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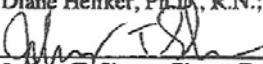
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**The Essence of the Experience of Polypharmacy in the Life-World of
the Community Dwelling Elder**

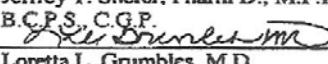
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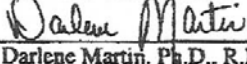
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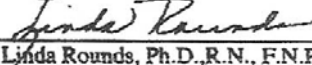
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**The Essence of the Experience of
Polypharmacy in the
Life-World of the Community Dwelling Elder**

by

Eugenia Martha Ybanez-Blomstrom, R. N., M.S.N., C.N.S., Psych/M.H.

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The University of Texas Medical Branch at Galveston
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Dedication

This dissertation is dedicated to my family, my husband David Blomstrom and my children, David Blomstrom, M. D. and Deborah Volek, for their time, patience, and faith. It is dedicated to my parents, brothers, sisters, and my grandchildren for their unselfish love and devotion to me. It is through my parents, and specifically my mother, that I learned to love elders and their need for empathic advocacy groups. It was my own experience through my mother, who was illiterate and struggled with a complex healthcare system with less than empathic caretakers, which guided me through my journey toward this topic of study.

This dissertation is also dedicated to my participants (pseudonyms given): Barb, Barry, Bea, Belinda, Ben, Benito, Benjamin, Benny, Major B. (Bert), Bettye, Beverly, BJ, Blanca, Bonchia, Bonnie, Boyd, Brandi, Brianna, Brittney, and Brooks. Thank you for sharing your stories and your experiences with living polypharmacy. Without your voices, this dissertation would not have been possible.

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The Essence of the Experience of Polypharmacy in the Life-World of the Community Dwelling Elder

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Eugenia Martha Ybanez-Blomstrom, Ph.D.

The University of Texas Medical Branch, 2008

Supervisor: Diane Heliker

Thirteen percent of the United States' population is 65 years of age and older, and consumes 33% of prescribed medications and 40% of over the counter medications. Most research addressing polypharmacy in the elderly population focuses on the consequences of polypharmacy, such as medication misadventures, falls, fractures, and death—factors that are easily measured and quantified. Few researchers have studied living polypharmacy through the perspective of the one experiencing the phenomenon, which is not easily measured or quantified. This topic, living polypharmacy in the life-world of the community dwelling elder, is significant to healthcare providers, nurses included, as it focuses on the culture of the elderly and allows new consideration of everyday, taken-for-granted practices such as changes in terminology. The research questions for this study were: 1) What are the common essences (meaning) in experiencing the meaning of polypharmacy in the life-world of the community dwelling elder; 2) What impact does taking multiple medications have on the quality of life in the life-world of the older adult; 3) What impact does Medicare Part D (New Drug Plan) have on "living polypharmacy"; and 4) What do community dwelling elders want healthcare professionals to know about polypharmacy in their life-world? The purpose of this Husserlian phenomenological study was to describe the experience of living polypharmacy. A purposive sample of 20 community dwelling elders volunteered, and during tape-recorded interviews they were asked open-ended questions. The interviews were transcribed verbatim. Colaizzi's (1978) interpretive stages (7) were utilized for analysis. Criteria for trustworthiness were addressed by using Lincoln & Guba's (1985) rigor. Twelve theme clusters emerged from the data. These themes were integrated into three overarching topical areas deemed relevant and essential to an expanded perspective of living polypharmacy: collaborating and co-creating, communicating, and caring. Implications for the thematic results of this study included increased understanding of the phenomenon of living polypharmacy and the development of an educational program that addresses a cultural change movement

towards restructuring the status quo. Implications address a consumer-focused, life-world driven medication management model (MMM).

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Chapter One: Introduction

The purpose of this phenomenological study is to explore and describe the meaning of the experience of ‘living polypharmacy’ in the life-world of the community dwelling elder, from their perspective, in order to increase awareness of this dilemma and its ramifications among policy makers, academicians, and healthcare professionals. An increased understanding of ‘living polypharmacy’ has the potential to improve the healthcare providers’ ability to address selective aspects of polypharmacy and to improve the everyday life of senior adults. Currently, polypharmacy, which is the use of multiple medications daily, is a complex dilemma with serious consequences.

Polypharmacy increases the incidence of medication misadventures, leading to falls, fractures, and even death. This trend of daily multiple medication usage is a complex dilemma that applies ethical and social ramifications to major healthcare issues, which, in turn, affect individuals, their families, the healthcare system, and society.

Chapter One defines the problem and incidence of polypharmacy both in the United States and globally. Beginning with my rationale for studying polypharmacy in depth, this chapter presents an overview of the scientific literature and continued multidimensional challenges related to polypharmacy. Included are the historical trends and incidence of polypharmacy, factors related to polypharmacy and its consequences specific to healthcare providers, consumers, and the medications themselves, and the cost of polypharmacy to both individuals and society. Further, evidence-based strategies aimed at reducing polypharmacy are examined in depth. The significance of polypharmacy to nursing and to nursing research is also discussed. Finally, the purpose of this study is discussed, along with an overview of the methodology used to address the primary research question: What is the essence (meaning) of the experience of living polypharmacy in the life-world of community dwelling older adults?

BACKGROUND

Expressed patient concerns, general observations, past and present prescribing trends, and my concern for ethical and safe health care practices spurred my interest in

polypharmacy in the community-dwelling elderly. As I listened to the senior adults' voices describe how they managed their everyday life of medications, I became more interested in their stories, as well as more aware of what I needed to learn about "living polypharmacy" to better promote health and prevent illness or harm in the elderly.

The enigma of polypharmacy, coupled with significant adverse events observed in the clinical setting, presents a challenge to today's healthcare environment. An example of such a challenge is demonstrated by the frequency of inquiries made by elders regarding medication side effects that they may be experiencing. Polypharmacy may involve physical and psychological risks, including bruising, fatigue, falls, fractures, incontinence, depression, and cognitive disorders. In addition to these adverse drug events, multiple medication usage increases the potential for inappropriate prescription, non-compliance, pill sharing, and even death (Fick et al., 2003; Gurwitz et al., 1990). Unfortunately, many healthcare providers continue the practice of prescribing excessive numbers of medications. Almost every office visit by a senior adult results in at least one medication prescription. The proportion of office visits involving polypharmacy increased from 7% in 1990 to 19% in 2000 (Aparasu et al., 2005). This researcher noted an increase in the number of prescribed medications, listened to elders' complaints and concerns, and observed instances of: 1) medication misadventures that culminated in hospitalizations due to increased confusion, falls, and fractures; and 2) treatment of symptoms of medication misadventures with yet another medication, a phenomenon known as cascading. Cascading, as noted by Tamblyn (1996), occurs as much as 80% of the time.

Initially, it was the patients' concerns with medication misadventures that led to my interest in polypharmacy. The term "medication misadventures" encompasses drug-drug interactions, drug-food interactions, inappropriate prescribing, and adverse drug events, and conveys the concept of harmful reactions related to medications. The questions and concerns of the patients alerted me of my responsibility for the safety of the patient across the life span, and in particular, the elderly.

HISTORICAL SIGNIFICANCE AND INCIDENCE OF POLYPHARMACY

The United States Food and Drug Administration reported an increase in serious drug misadventures and fatal drug events between 1998 and 2005. From 1998 to 2005, serious drug misadventures increased from 34,966 to 89,842, and fatal drug events increased from 5,519 to 15,107. Yet even after the Food and Drug Administration's report, polypharmacy, a major contributing factor to adverse drug events, continued to increase (Moore et al., 2007). On the other hand, reports of polypharmacy trends act as a catalyst for increased research related to the incidence of polypharmacy, both nationally and internationally (Bjerrum et al., 1997). Elderly annual office visits (polypharmacy visits per 100 elderly persons) involving polypharmacy have increased from 33.8 in 1990 to 114.8 in 2000 (Aparasu et al., 2005). Overall, the existing literature suggests that polypharmacy patterns have increased. Thus, further investigation is needed to identify this alarming trend.

Researchers have reported the trend of increased polypharmacy in the senior adult community throughout the world. In Finland, the number of persons 65 years of age and older who are taking five or more medications daily increased from 19% between 1990 and 1991 to 25% between 1998 and 1999 (Linjakumpu et al., 2002). A Danish study found similar results, citing polypharmacy incidence in 22% of elders in 1994 (Rosholm et al., 1998). Sweden reported that 39% of the senior adults received the same number of drugs (five or more) as those in the Finland, Denmark, England, and Wales (Chen et al., 2001; Jorgensen et al., 2001). Kaufman et al. (2002) reported comparable evidence of multiple medication usage in the United States, citing polypharmacy incidence of 19% for males and 23% for females over 65 years of age. Fillit et al. (1999) studied a managed care organization in Texas and reported that 15% of its senior adult members were taking five or more medications daily.

Hanlon et al. (2004) concur with the above researchers that elders continue to take more prescribed medications daily, and that this practice increases the probability of inappropriate and unsafe medication regimens and adverse drug events. Inappropriate medication regimens associated with polypharmacy often pose a greater risk for harming

the patient than any potential benefit. Moreover, they are less effective and more costly than therapeutic alternatives (Zhan, 2005).

Beers developed an explicit list of inappropriate medications for the elderly based on the risk benefit definition of appropriateness (Beers et al., 1991; Beers, 1997; Fick et al., 2003). This list addresses medications deemed as inappropriate and as having potential risks that outweighed their benefits. Today, Beers' criterion is used as a reference to improve medication use in the elderly. For example, the use of Norpace for heart failure is on the list for potentially inappropriate medication use, as this drug has the propensity to promote fluid retention and exacerbate heart failure. Yet evidence may suggest that this is the one drug of choice for congestive heart failure (Fick et al., 2003). Beers' initial criteria, presented in 1991 and intended for nursing home residents, were revised in 1997 to include community dwelling senior adults. In 2003, the updated list added medications that could be used with caution and frequent monitoring for all senior adults (Fick et al., 2003; Zhan, 2005).

Goulding (2004), found that healthcare providers prescribed at least one drug classified by Zhan's expert panel as never or rarely appropriate for use by the elderly 3.7% of the time in 1995, 3.8% of the time in 2000, and least one drug on the Beers criteria list was prescribed 7.8% of the time for elders during ambulatory care visits. In a retrospective analysis using Beers' criteria, Caterino et al. (2004) reported that inappropriate medication was prescribed to senior adults on 16.1 million occasions from 1992 to 2000.

One factor that might contribute to polypharmacy is the tendency to self-medicate by using over-the-counter medication in addition to the prescribed medication regimen. Another anomaly is the tendency to share medication with friends and other family members (Cosentino, 2002).

Thus, historical and current data on the incidence of polypharmacy strongly suggest an increase of polypharmacy use within the last ten years. It is likely that this trend will continue to increase rather than decline due to three factors. One factor is the advances in pharmacological therapies. The second factor is an increase in the elderly

population. The third factor is the push to medicate, quickly treat the symptoms, and reduce or prevent a hospital stay. Further, the extant literature presents limited data on polypharmacy and predictions of elders at risk. Many studies were clinically based, few studies examined polypharmacy in the community dwelling elderly population, and even fewer explored the impact of taking multiple medications in the daily life of the senior adult. Several factors, however, were indicated in the literature as contributing to polypharmacy.

FACTORS RELATED TO POLYPHARMACY

Factors that contribute to the enigma of polypharmacy among senior adults are complex and involve healthcare providers, individuals, and the medication itself. Occasionally, the components of the medications contribute to medication misadventures as well. In the following section, these factors are addressed briefly, ending with a summary noting which elders are at risk for polypharmacy.

Healthcare Providers

The healthcare provider contributes to polypharmacy through prescribing complex medication regimens to treat chronic illnesses. Evidence-based treatment guidelines often advocate use of multiple medication regimens. Other contributing factors are the availability of pharmaceutical agents and multiple providers and prescribers. Clinicians are often encouraged to prescribe more medications than they have in the past due to their increased availability, access, and treatment guidelines. On the other hand, there is no tool to sufficiently assess for polypharmacy and the “brown bag” method is at times inaccurate. The brown bag method is a method used by some physicians requesting that patients bring all their medications on each office visit in a bag. At times, the patient might bring all the medication that they are currently taking, but not necessarily the medication that was prescribed or supplemental over-the-counter (OTC) medications.

Health Consumers (Individuals)

The individual might add to the dilemma by using multipharmacies. Hughes (2004) developed the term multipharmacies to indicate the use of more than one pharmacy per individual to fill prescriptions. Many senior adults visit multiple providers

and various specialists, receiving different prescriptions from each. Some senior adults shop for bargains and use mail order suppliers, online vendors, over the counter drugs, and may even share pills with spouses or friends. Most elderly take over-the-counter (OTC) medications on their own initiative without the primary health care provider's knowledge. Another contributing factor is the complexity of the health of the elderly requiring multiple medications. More than 20% of senior adults have coexisting chronic conditions (Beyth & Shorr, 2002).

Medications

Other issues to consider are the pharmacokinetics and pharmacodynamics, such as components of prescription medication, which may delay the breakdown of the drug and alter its bioavailability. Dose, route, time of day and certain foods and fluids also have an effect on the efficacy of the medication.

In essence, the issue of polypharmacy is complex and compounded by the use of multiple healthcare providers, multiple medication regimens, multiple pharmacies, and the additional use of OTC drugs without a core coordinator to direct care or specifically assess for polypharmacy. This dilemma leads to a situation whereby neither the single provider nor the various pharmacists have knowledge of all the prescribed medications, not to mention additional unreported supplements.

In summary, the two major players in polypharmacy are the healthcare providers and the healthcare consumers, or patients. According to Aparasu et al. (2005), gender, insurance status, and co-morbidity are positively associated with polypharmacy. They report that females over 65 years of age are more likely to use multiple medications than their respective male cohort. Patients with multiple diagnoses who are covered by private insurance, Medicare, or Medicaid are three times more likely to be consuming multiple prescribed medications.

CONSEQUENCES OF POLYPHARMACY

The consequences of polypharmacy fall into four major categories, all interwoven and intricately linked. These categories are compliance (adherence), medication misadventures, risk for hospitalization, and excessive cost. A summary of each of these

categories follows, beginning with a description of the linkage of all four categories with compliance issues.

Compliance

Many factors contribute to compliance. The ability to understand the importance of the medication regimen is one factor that may contribute to compliance. The complexity of multiple medication regimens makes it harder for the patient to comply with medication regimens. An understanding of pharmacokinetics and pharmacodynamics by the provider as it relates to senior adults, as well as a clear explanation with minimal medical jargon, could improve compliance and circumvent polypharmacy issues in the elderly.

Researchers examining adherence to medication regimens in the elderly population reported cost as a contributing factor (Soumerai & Ross-Degnan, 1999; Weiden et al., 2004). The greater the number of medications consumed, the greater the cost and the higher the incidence of non-compliance. These sequences of events seem to have a domino effect. Risk of hospitalization is associated with compliance rates—lower compliance is correlated with a higher risk of hospitalization over and above any other risk factors for hospitalization (Weiden et al., 2004). Non-compliance accounts for an estimated 11% of hospital admissions (Col et al., 1990; Stewart, 1991).

The primary consequence of non-adherence is that the patient does not receive full benefits of the treatment, with outcomes ranging from an easily corrected complication to a life-threatening situation.

Polypharmacy and Medication Misadventures

The concurrent use of multiple medications leads to medication misadventures and increased cost; these events have been referred to as the "coral reef effect." These three events can be perceived as having a layered effect, similar to the structure of a coral reef, on elders' quality of life. Negative effects from medications contribute to escalating healthcare cost and have a serious impact on the geriatric population. The elderly are particularly vulnerable to adverse medication events, partly because of diminished physiological ability to effectively metabolize and excrete drug products, partly due to

coexisting challenges (co-morbidity), and partly because they consume a greater number of medications. Currently 13% of the United States population consists of persons 65 years of age and older; this segment of the population consumes 33% of all prescriptions and 40% of all OTC medications (Elwood, 2000; Whitelaw & Warden, 1999; Williams, 2002).

Medication misadventures also encompass adverse drug events. The greater the number of drugs consumed, the greater the potential for adverse drug events. A study of 27,600 Medicare patients reported over 1,500 adverse drug events in a single year (Gurwitz et al., 2003). Studies indicate that the average number of medications taken simultaneously by senior adults is 7-10 per day (Brummel-Smith, 1998; Caranasos, 2004). Average levels of medication use may be higher than 10 per day in assisted living and nursing home settings (Field et al., 2001; Sloane et al., 2004). There is, however, no evidence that this is typical of all prescriptive patterns; these authors only suggest that this is the number of drugs currently consumed in these settings. Nonetheless, the potential of adverse drug events increases with the number of drugs taken.

Two simultaneously prescribed medications increase the risk of adverse drug events by 6%, five medications increase the risk by 50%, and eight or more increase the risk by 100% (Williams, 2002). Yet, 75% of physician's visits by elders culminate in at least one new prescription (Balkrishnan, 1998; Beers et al., 2000; Brummel-Smith, 1998; Colley & Lucas, 1993; Williams, 2002). Hanlon et al. (1997) reported in their study of adverse drug events that more than one third of senior adults had experienced an adverse drug event. Among those with an adverse drug event, 63% required a clinic visit, 10% required an emergency room visit, and 11% were admitted to a hospital.

Nevertheless, researchers who evaluated a cohort of older community dwelling senior adults estimated that 27.6% of adverse drug events, a risk related to polypharmacy, are preventable (Ernst & Grizzle, 2001; Gurwitz et al., 2003). On the other hand, adverse events may go undetected due to symptoms associated with aging such as tremors, forgetfulness, and confusion.

Polypharmacy has been associated with dangerous drug-drug interactions and potentially inappropriate medications (Cannon et al., 2006). A major challenge among healthcare providers is to consider that by adding a drug to the older patient's regimen, the drug may interact with a different drug that the patient is currently taking. Drug-drug interactions are one of the negative but very real consequences of polypharmacy. A recent example of a drug-drug interaction involves the medication Propulsid. This medication gained Federal Drug Administration approval; however, it took three years to identify potential drug interactions and three more years before it was removed from the market. This lag time put a great number of consumers at risk for cardiovascular adverse events, ventricular tachycardia, ventricular fibrillation, and even death from interactions with anticoagulant therapy.

Researchers found inappropriate medications administered to the elderly in 12.6% of emergency department visits between 1992 and 2000 (Beers, 1997; Caterino et al., 2004). Other researchers found that the elderly were given an inappropriate medication 3.6% of the time during emergency room visits, and 5.6% had one erroneously prescribed medication upon discharge (Chin et al., 1999).

In summary, medication misadventures have a negative effect on the geriatric population. Polypharmacy contributes to increased rates of adverse drug events, undesirable drug-drug interactions, prescriptions for inappropriate medication (based on Beers' criteria), and the potential for hospitalization. All of these events result in excessive costs (resources, financial, and physical) to senior adult patients, their families, and society.

Polypharmacy and Increased Risk for Hospitalization

One consequence of polypharmacy is the increased risk for hospitalizations, as noted in studies by Col et al. (1990) and Stewart (1991). Polypharmacy accounts for 28% of hospital admissions in the elderly population (The American Society of Consultant Pharmacists [ASCP], 2000; Bates et al., 1997; Ernst & Grizzle, 2001; Hanlon et al., 1997; Johnson & Bootman, 1995). Nineteen percent of these hospital admissions are the result of falls and fractures requiring costly operative procedures (Brummel-Smith, 1998). Falls

contribute more than 90% of the hip fractures in persons over 65 years of age. Indeed, by the middle of the 21st century, the incidence of hip fractures is predicted to double (Rizzo et al., 1998). Each year, 60% of long term care residents and one third of community dwelling elders fall. One risk factor for these falls is medications that cause dizziness and confusion (Fuller, 2000). Annually, approximately 9,500 deaths of older adults are associated with falls (Capezuti, 1992; Dial, 1999). Use of multiple medications can increase the risk of falls and fractures, which contributes to a substantial increase in medical cost in at risk elders and, most importantly, it increases the risk of mortality.

Cost of Polypharmacy

Senior adults constitute one third of the spending of the trillion dollar health care budget in the United States (United States Department of Health and Human Services, 2000). Some of these costs involve morbidity and mortality, hospitalizations, and other medication related issues.

Johnson and Bootman (1995) estimated that the cost of drug related incidents of morbidity and mortality in the ambulatory care setting is approximately \$76.6 billion annually. Of that \$76.6 billion, 62% was comprised of drug-related hospitalizations. Thus, drug related problems account for a substantial increase in health cost (Cohen, 2000).

The American Society of Consultant Pharmacists (2000) reported that medication related problems were the nation's \$100 billion disease. Six years later, Bergman-Evans (2006) described medication related problems in the United States as a public health threat, costing 200,000 lives and \$200 billion a year. If ratings for medication related problems included death secondary to disease, it would rank as the fifth highest cause of death in the United States (The American Society of Consultant Pharmacists, 2000; Ernst & Grizzle, 2001; Gurwitz et al., 2003). Yet a substantial body of literature indicates that 95% of medication related problems are predictable, and approximately 60% are preventable (ASCP, 2000; Dennehy et al., 1996; Hanlon, 2001). Other researchers also suggest that half of the illness and death caused by medication related problems are preventable (Bates et al., 1997; Ernst & Grizzle, 2001; Gurwitz et al., 2000).

The United States has spent \$133 billion on drugs and an estimated \$177 billion managing drug related problems (Ernst & Grizzle, 2001). For every dollar spent on therapy, as much as \$1.30 is spent managing drug related problems, a fact that has prompted calls of numerous organizations to improve drug safety through reduction of polypharmacy and safer prescriptive practices (Ernst & Grizzle, 2001; United States Department of Health and Human Services, 2000).

Unfortunately, some of the medication-related problems and the consequences of polypharmacy occasionally mimic symptoms attributed to aging, such as confusion, weakness, tremors, and falls. Therefore, the results of polypharmacy may often be missed, overlooked, or treated with yet another drug. The cost of medication-related problems in the elderly community has an effect on everyone. This cost continues to escalate and generate a significant impact on all of these entities: the individual, society, the current healthcare system, and the future of our nation. While the literature on the consequences of polypharmacy deserves consideration, it is necessary to review how polypharmacy affects, and is affected by, certain evidence-based therapies.

POLYPHARMACY AND EVIDENCE-BASED THERAPIES

In the last few years, healthcare providers, working with the senior community, have emphasized health promotion and prevention and have attempted to apply evidence-based concepts to geriatric care (Gurwitz, 2004). Evidence-based therapies may improve the awareness of polypharmacy and positively influence clinical decision-making among healthcare providers. One example of the relationship between health promotion, evidence-based therapeutic strategies, and polypharmacy is found in the management of cardiovascular disease in the elderly. The burden of this disease is substantial and current evidence for treatment is well documented (Cleland et al., 2002). For some senior adults, however, treatment with multiple medications inadvertently increases the risk of medication misadventures (Williams, 2002). While the use of enteric-coated aspirin, plavix, angiotensin-converting enzyme (ACE), a statin, and a spironolactone might be appropriate for treatment of cardiovascular disease, this multiple medication regimen also has the propensity for drug-drug interactions and adverse drug events. Clinical decision

making for this age group is complex, due in part to the difficulty of balancing empirical evidence, clinical judgment, and medical practices that focus on the needs and wishes of the client. Striking a balance between evidence-based care and clinical judgment must include treatment with empirically proven data, as noted by Cleland et al. (2002) and Masoudi and Krumholz (2003). Above all, the healthcare provider must listen to the experiences of those taking multiple medications daily. Evidence-based strategies, clinical practice guidelines, and other standards for medical treatment have grown exponentially and have become more complex in the last decade. This dilemma is highlighted by the National Guideline Clearinghouse, which listed over 1,650 clinical practice guidelines in July 2005 (Boyd et al., 2005). O’Conner (2005) noted that many of these guidelines overlap, contradict one other, and add confusion to clinical practice guidelines (Boyd et al., 2005; Rosenstock, 2001). Clinical guidelines rarely address the treatment of patients with three or more chronic illnesses. Over 50% of patients 65 years and older have at least one chronic illness (Boyd et al., 2005; Rosenstock, 2001). Quality assurance initiatives and guidelines largely ignore the fact that multiple medication regimens, as recommended by various suggested treatment plans, yield only marginal benefits. Randomized clinical drug trials that are the foundation of evidence-based therapies rarely include elders, yet the majority of the consumers that will use the product *are* elders. Compounding the problem of polypharmacy and co-morbidity in the older adult is the notion that randomized trials, either explicitly or implicitly, exclude older patients with multiple co-morbidities (Heiat et al., 2002). Thus, efforts to balance evidence-based therapies, multiple medication regimens, and clinical decision making in an elderly population with co-existing chronic conditions remain extremely disappointing.

POLYPHARMACY MORBIDITY AND CO-MORBIDITY CHALLENGES

The numerous morbidities of older adults often lead to the prescribing of multiple medications in an effort to address each disease process. About 85% of elders have at least one chronic disease and one third have over two chronic illnesses, with 12% of the latter using at least 10 or more medications per week for these chronic illnesses (Kaufman et al., 2002). More than 20% of senior adults have over three coexisting chronic conditions requiring the use of multiple medications to treat each condition (Beyth & Shorr, 2002; Steinman et al., 2006). In a recent study of older adults admitted to a hospital with heart failure, Havranek et al. (2002) report that 38% of these individuals were diagnosed with diabetes, 18% with stroke, 33% with chronic lung disease, and 33% with atrial fibrillation. Treating coexisting conditions with many commonly used medications poses a challenge. For example, therapies that attempt to treat an elder with co-morbidities such as renal insufficiency and diabetes contradict the use of many antiarrhythmic drugs because of their cardio-depressant and pro-arrhythmic effects.

Another challenge related to polypharmacy and co-morbidity in the US is the fee-for-service system of management, which provides little attention to judging performance measures in the senior adult with co-morbidity issues.

POLYPHARMACY, A DIVERSE AGING POPULATION, AND HEALTH DISPARITIES

The 2000 US Census Bureau reported that the number of individuals over the age of 65 totaled 35 million people, a 12% increase since 1990's census. Moreover, the number of individuals over 85 years of age is predicted to reach 6.7 million by the year 2020 (Chelluri et al., 1992). Ever-increasing life spans also mean that more people are reaching the age of 100 years. The 1990 census noted that there were 37,306 centenarians in the US with projections estimated at 131,000 by the year 2010 and as many as 834,000 by 2050 (The United States Census Bureau, 2000).

In addition to the increased number of community dwelling elders, an increased life expectancy, and an equally impressive increase in chronic illnesses, there is a significant trend of increased office visits by the elderly, often culminating in polypharmacy (Aparasu et al., 2005). As the population of elderly increases due to the

“baby-boomers,” so does the potential for the occurrence of polypharmacy. The first wave of baby-boomers, those individuals born between 1946 and 1964, began turning 60 in 2006. Most communities are unprepared to address the increased healthcare demands of these individuals.

A recent survey of more than 1,790 towns, counties, and other municipalities in the United States found that only 46% of these entities are exploring strategies that address aging citizens and, in one-third of the communities, seniors do not have access to health education or medication counseling (National Association of Area Agencies on Aging, 2006). In light of this survey, and in an attempt to furnish healthcare providers with information regarding concerns related to polypharmacy, the participants selected for this study will be community dwelling senior adults who are 65 years of age or older.

As we continue to provide managed healthcare for our current and future senior adults, a complex cultural factor compounds our efforts. According to the United States Administration on Aging, the number of diverse minority elders living in the US is expected to increase by 217% in the coming decades, whereas Caucasian elders will only increase by 81%. The Administration on Aging predicts that the number of African American elders will increase by 128%, Asian elders by 301%, Hispanic elders by 322%, and American Indian and Alaskan Native elders by 193% (Krisberg, 2005).

Health disparities among the various ethnicities are a pervasive part of our healthcare system. Noted disparities include access to insurance, access to healthcare facilities, access to translators, appropriate knowledge regarding medications, and misunderstanding the details of prescription drug plans. Such disparities will increase and add to the complex issues surrounding polypharmacy as well as the need to address the current trends and prepare for future needs. Future needs include treatment guidelines that advocate use of multiple medication regimens, availability of pharmaceutical agents, multiple prescribers, and the need to assess for polypharmacy and inappropriate prescribing. Moreover, the future will see the continued need to advocate for safe practice and improved health for senior adults in our community.

POLYPHARMACY AND NURSING

Most nurses, with or without prescriptive authority, have a responsibility for monitoring proper utilization of multiple medications by community dwelling adults. Nurses, either directly or indirectly, administer, prescribe, educate, counsel, assess, or intervene in the management of drug events in the course of their scope of practice. Nursing's scope of practice places the nurse in a unique relationship with the patient. Nurses interact both directly, as a provider or patient advocate, and indirectly, as an educator, policy maker, or researcher. The patient-centered model of nursing, in existence since Florence Nightingale, recognizes and values therapeutic relationships between nurse and patient. Within this relationship, patients are encouraged to become their own advocates, responsible for the management of their environment and healthcare needs (Fitzpatrick & Whall, 1983; Levine, 1963). According to Parse (1981; 2001), the patient, environment, and nurse are interconnected—participation includes all dimensions of the health experience. This unique relationship encourages the nurse to explore and understand the meaning of a patient's experiences within the healthcare system. In essence, nurses listen to the patient and recognize that what the person has to say is important, meaningful, and helpful for that person's health and quality of life (Parse, 1981). Hence, the very existence of nursing as a profession relates to the phenomenon of the person and that person's experience with his or her health. Parse (2001) indicates that healing does not occur in isolation; rather, healing takes place in an interactive environment with oneself and others. Nurses can facilitate healing by creating a caring environment for themselves, families, and patients, thereby positively affecting patient outcomes. This understanding of health care considers the person's experiences and permits new possibilities of a caring practice.

The significance of a caring practice and a person's active participation in health care is readily apparent in the works of nurse scholars (Denyes et al., 2001; Diekelmann, 2002; Orem, 1980; Parse, 1981; Peplau, 1952; Peplau, 1968; Rogers, 1970; Rogers, 1980). Nursing's concept of a therapeutic relationship with a patient involves a firm commitment to advocacy for the individual's independence and freedom of choice. It is

through this nurse-patient interaction, an interpersonal process, that the nurse guides the patient, who still retains and controls the content of their experiences (Peplau, 1968). This interpersonal process is reflective of Roger's (1980) view of the dynamic interaction of person and environment. It is also reflective of the phenomenological view of a person's being, which is becoming or describing one's experiences in an intersubjective manner. In this co-creating mode, which includes reflecting on experiences through personal knowledge, a person is open to discovery and the phenomenon is opened to be discovered. The opportunity for discovery then emerges in the context of the person-world interrelationship (Parse, 1992).

Diekelmann (2002) best describes the interpersonal process between patient and nurse as a "concernful" practice that makes visible that which is meaningful and that which matters to the patient. This type of caring and understanding that recognizes the person as a valuable being helps to overcome depersonalizing experiences for the patients and their families and promotes positive patient outcomes.

It is through this interaction of person, environment, and nurse that humanist nursing has evolved by questioning, exploring, and analyzing nurses' experiences as nurses in an attempt to identify phenomena of importance to a caring and "concernful" profession (Diekelmann, 2002).

In summary, as nurses record the medication history, they begin to explore the person's intentionality, significance, and meaning of taking multiple medications every day in his or her everyday context, the life-world of the individual. It is through this interpersonal process, whether in the emergency room, doctor's office, or clinic, that the nurse begins to reflect on an experience that includes more than just ingesting medication. The nurse allows patients to make visible that which is meaningful *to them* as they describe the totality of the experience of polypharmacy, what the medications do to the body, and how the body responds to the medications. Nurses serve as guides to mediate basic nursing practices that offer care that is both appropriate and meaningful to patients. Such practice increases the potential for positive outcomes, safe practice, and

improved quality of life as it starts to address health objectives for the elderly in Healthy People 2010.

POLYPHARMACY, NURSING RESEARCH, AND NURSING EDUCATION

As discussed above, researchers have identified and documented problems resulting from polypharmacy in the elderly. Because polypharmacy continues to be a problem, further discussion, analysis, and research is needed to continue in an attempt to clearly define and address this complex issue (Cooper, 1990).

Clinical nursing practice stresses the concepts of observation, assessment, interviewing, interpersonal relations, interaction, and intervention. These same skills are highly relevant for a phenomenological nurse researcher. The nursing process and a phenomenological approach to care are a conceptual match (Knaack, 1984; Oiler, 1982; Parse, 1985). During an assessment, the nurse asks the patient to explore and report his or her experiences. The nurse then begins to interpret the meaning of these experiences along with the patient. As the structure of the essence or meaning of the experience is brought to light, new possibilities of self-understanding become visible and the patient starts to explore and describe that experience in depth. The nurse, through listening to the description of the experience, will formulate a plan of action with the patient's input (co-creation). The plan is patient-focused, related to the problem, and formulated with minimal healthcare provider bias.

CHALLENGE OF DEFINING POLYPHARMACY

A major limitation noted in the study of the complexity of polypharmacy is the issue of defining and estimating the occurrence of polypharmacy. Bjerrum et al. (1997) suggested estimating polypharmacy by calculating the period of consumption for each prescription. The duration of treatment is set to equal the number of drugs purchased as measured in defined daily doses (DDD), assuming a daily intake of one defined daily dose. With this formula, Bjerrum et al. (1997) defined polypharmacy as overlapping periods of consumption for different drugs. The World Health Organization (1998) calculated the defined daily doses from the information received by the participant. This

calculation involves the assumed average maintenance dose per day for a drug used for its main indication.

On the other hand, Barat et al. (2000) strongly suggested that the number of drugs prescribed and the number consumed, such as the defined daily dose, might not be the same. Barat et al. (2000) interviewed senior adults at home, examined their stored drugs, and noted the following information: 1) a large number of prescribed drugs (17%) were not in use at the time of the examination, 2) the primary physician lacked knowledge of 25% of the medications prescribed by other physicians, 3) 31% of the study population utilized multiple providers, and 4) a high risk potential for drug interactions with clinical significance positively correlated with polypharmacy among 15% of the participants. The daily medications listed by the patient, the actual medication in the medication container, and the defined daily dose might not be the same, thus compounding the problem.

Definition of Polypharmacy

In an effort to approach the study of polypharmacy in a consistent manner, monitor incidence, and identify related risks, a consensus regarding the definition of polypharmacy is necessary. Conceptually, polypharmacy is the taking of multiple medications several times a day. For the purpose of this study, polypharmacy will be operationally defined as taking four or more prescribed medications for at least 30 consecutive days prior to the study. This definition is gleaned from the literature reviewed and my own clinical experience with the geriatric population.

SUMMARY

Our goal as healthcare providers is to advocate for elders to remain in their home for as long as possible, to encourage autonomy, and to promote a good quality of life. Yet polypharmacy and the factors related to polypharmacy present a challenge for those prescribing, dispensing, and administering medications due to treatment guidelines that advocate use of multiple medication regimens, the availability of pharmaceutical agents, and the existence of multiple providers. Interwoven within the enigma of polypharmacy is its impact on society, the economy, health disparities, and nursing practice.

STATEMENT OF PROBLEM

As advances in science and medicine allow individuals to live longer, these benefits are not without cost. With continued growth in the older population, advances in science and medicine have contributed to polypharmacy and, in turn, the same technology has possibly contributed to coexisting chronic and acute disease conditions.

Polypharmacy has a significant impact on individual senior adults and their families, society, the economy, healthcare practice, education, administration, and research. Currently, there is research to support findings related to polypharmacy and the consequences of polypharmacy; however, what is not yet known is the essence of living the experience of polypharmacy in the life-world, the everyday experiences, of community-dwelling elders taking multiple medications. The gap in our current knowledge base relative to “living polypharmacy” needs to be explored. Exploring this gap will illuminate potential needs of society, safe practice, and, more specifically, address the needs of senior adults in the community as they describe the experience.

Insight into the experience of the meaning of living polypharmacy in community dwelling elders, from their perspective, is needed to establish healthcare interventions and safe practices that address the complexity of this dilemma. Remedies include targeting polypharmacy where it occurs—in the life-world of senior adults.

Increased understanding of the consumer’s (patient) perspective of living polypharmacy increases healthcare providers’ ability to address selective aspects of polypharmacy. Other information gathered will aid in guiding practitioners toward new possibilities of consumer driven evidence-based care—care that is patient-focused, safe, and cost effective. With this new knowledge and understanding, it is the goal of this study to address the gap between the original Food and Drug Administration’s report, past findings and current trends and to begin to address the future health challenges of community dwelling elders living polypharmacy.

RESEARCH QUESTION

The philosophical underpinnings used to guide this study and the research questions are based on Husserl's phenomenology and his concepts related to intentionality, essence, intersubjectivity, and bracketing. The phenomenon in focus here is polypharmacy as perceived by the individual living the experience of multiple medication use. This study seeks to uncover the meaning of "living polypharmacy" from the perspective of elders who are living the phenomenon. Some of the research mentioned earlier in this chapter suggests the far-reaching impact of polypharmacy on society and our economy, on the prevalence of polypharmacy in the elderly community, and the physical consequences of polypharmacy. Yet information relative to the essence (meaning) of polypharmacy in the day-to-day lives of elders is lacking. Exploring the meaning of "living polypharmacy" in the life-world of the community-dwelling individual addresses questions that lead to new possibilities of care, and that may ultimately address the dilemma of polypharmacy.

The following research questions best address the purpose of this study:

- **Research Question 1:** What are the common essences in experiencing the meaning of living polypharmacy in the life-world of the community dwelling elder?
- **Research Question 2:** What impact does taking multiple medications have on the quality of life in the life-world of the older adult?
- **Research Question 3:** What impact does Medicare Part D (New Drug Plan) have on "living polypharmacy"?
- **Research Question 4:** What do community dwelling elders want healthcare professionals to know about polypharmacy in their life-world?

ORGANIZATION OF THE STUDY

The text will proceed as follows: Chapter Two presents a review of literature and state of the science related to polypharmacy trends and incidences in the elderly population. Chapter Three describes the methodology of the study including the research design and underlying Husserlian philosophical assumptions. The methodology will also

include the sampling plan, recruitment strategies, setting, ethical considerations, data gathering, interpretive analysis based on Colaizzi's method, and criteria for rigor. Chapter Four presents a description of the participants and the context of the study, followed by the interpretive findings and meaning of polypharmacy along with the essential structure of the phenomenon, leading to a revised definition of the essence of taking multiple medications daily. Chapter Five concludes the study with a summary, overview of the problem, major findings, findings in relation to the literature and Husserlian phenomenology, conclusions, limitations, strengths, implications for nursing practice and policy, and recommendations for further research.

Chapter Two: Review of the Literature

INTRODUCTION

The purpose of this chapter is to review the literature that addresses polypharmacy in the life-world of the senior adult, beginning with a discussion exploring the construct of polypharmacy in an attempt to address the ambiguity that currently exists. The second and third sections examine and summarize empirical and qualitative research as well as policy and ethical aspects of polypharmacy. The fourth section details Husserlian phenomenological conceptualizations of the life-world and the nature of essence, concluding with a preview of the Chapter Three.

Many factors contribute to polypharmacy and the bulk of the literature considers polypharmacy to be associated with potential for a myriad of risks and consequences. These risks from polypharmacy include adverse drug events, drug interactions, compliance issues, and prescribing of inappropriate medications (Balkrishnan, 1998; Barat et al., 2000; Beers et al., 1991; Carbonin et al., 1990; Gurwitz et al., 1990; Henderson et al., 2006; Hughes, 2004; Kohn et al., 1999; Nash et al., 2000; Rosenstock, 2001; Rumble & Morgan, 1994). Additionally, a consensus exists that polypharmacy contributes to some major untoward health events, including falls, fractures, and even death (Beers et al. 1991; Kohn et al., 1999; Nash et al., 2000). Fortunately, pharmacists are beginning to address medication management problems and demonstrating positive outcomes (Galt, 1998; Jameson et al., 1995). However, some negative outcomes have also been reported, in particular the application of evidence-based strategies that ignore co-morbidity issues (Boyd et al., 2005). Thus, further research is warranted.

Although researchers offer numerous definitions of polypharmacy and examine prevalence, trends, and consequences of multiple medication use along with interventions, there are few existing studies that explore the experience of elders who live polypharmacy everyday. Few reports explore the experience of taking multiple medications, or what effect this daily ritual has on the life-world of community-dwelling elders or any other elders. This gap between the rationale for and medical outcome of

prescribing multiple medications and an elder's experience of taking these myriad medications everyday is discussed below.

Polypharmacy: Construct and Definition

The phenomenon of prescribing multiple medications, as documented in the literature, is termed "polypharmacy." Polypharmacy is usually defined as the number of medications taken, the use of medication without indication, or both the number and use of medication without indication. However, most research focuses on a numeric definition (Bjerrum et al., 1997; Bjerrum et al., 1999; Jorgensen et al. 2001; Linjakumpu et al. 2002; Rosholm et al., 1998). Most of the numeric definitions range from the use of two drugs to five drugs. The use of two drugs is considered less severe polypharmacy than the use of five drugs, which is considered a more severe form of polypharmacy (Bjerrum et al. 1997; Jorgensen et al. 2001; Linjakumpu et al.; 2002). While a numeric definition does not infer appropriateness of therapy, it does highlight the concurrent use of multiple medications.

Hyperpolypharmacotherapy (multiple pharmacies), a recently coined term used interchangeably with polypharmacy, was noted in the literature as an attempt to clarify the differences between the use of multiple medications and the use of multiple pharmacies. Both terms, polypharmacy and hyperpolypharmacotherapy, lack clarity and add to the ambiguity of the construct (Bushart & Jones, 2005).

For the purpose of this study, only the term polypharmacy, defined as the use of multiple medications, will be used. In a position statement, the American Nurses Association (1990) defined polypharmacy as the concurrent use of several drugs and acknowledged that the elderly use more drugs than younger people, may often require a multiple medication regimen, and run a greater risk of adverse drug events due to the increased number of medications. Barat et al. (2000) defined polypharmacy as the use of three or more drugs daily.

Bejerrum et al. (1997) defined polypharmacy as the use of two or more medications and developed a formula to calculate the defined daily dose (DDD). With this formula (DDD), they further defined polypharmacy as an overlapping period of consumption of different drugs. Totter (2001) suggested that the concurrent use of many medications may or may not be justified in the geriatric population, and adds three

categories to the definition: 1) minor, or the use of two to three drugs; 2) moderate, or the use of four or five medications; and 3) major, or the use of more than five medications. Bejerrum et al. (1997) categorized the use of two to four drugs as minor and over five prescriptions as major polypharmacy. Bushart and Jones (2005) offered a simplified definition of polypharmacy, the use of multiple medications. Veehof et al. (1999) added time constraints and a specific number of drugs in their definition, parameters that reflect long-term use, and simultaneous use of two or more medications for 480 days or longer. It merits mentioning that one may have difficulty validating an individual's consistency with a medication regimen for a total of 480 days.

Yvette (2004) expanded the definition to suggest a numeric component, specific criteria, and two major categories. The numeric component states that it is not only the use of five prescribed medications, but also the inclusion of specific criteria. Specific criteria include taking medication that has no apparent clinical indication, using therapeutic equivalents to treat the same illness, using medications concurrently that have interacting potential, taking medication of inappropriate dosage, and engaging in the cascade phenomenon. The cascade event is the use of medications to treat symptoms usually caused by other medication. The two major categories noted by Yvette (2004) are therapeutic and contratherapeutic categories. Therapeutic polypharmacy would be the use of multiple medication regimens, carefully monitored, such as in the treatment of tuberculosis. Contratherapeutic polypharmacy would be the use of medication that often culminates in unexpected and untoward effects because of a poorly monitored medication regimen.

Several challenges to the numerical definition of polypharmacy deserve further consideration. One challenge is the balance between evidence-based strategies and guidelines in the treatment of certain conditions, such as cardiac problems with multiple co-morbidities, which advocate the use of multiple medications. Another challenge is the risk of an adverse drug event associated with the number of medications being consumed. The use of two concurrent drugs increases the risk of an adverse event by 6% and eight or more drugs increases the risk by 100% (Williams, 2002). Other challenges include the concurrent use of both prescribed and OTC medications and the use of the same drugs

over many years in addition to recently added prescriptions. The clarity of the construct is central to understanding both the lived experience and appropriateness of polypharmacy.

The literature clearly demonstrates that there is no generally accepted definition that fully captures the complexity of polypharmacy. Some of the researchers in the above discussion define polypharmacy as excessive or unnecessary use of medications, while others use defined daily doses as indicators. Still others use prescription, administration, and use of more medications than are clinically indicated, or the use of medications for over 480 consecutive days, as criteria for polypharmacy. Other researchers combined numeric components, specific criteria, categories, and the use of yet another term, hyperpolypharmacotherapy, to define the construct of polypharmacy.

Operational Definition of Polypharmacy

For the purpose of the current study, the operational definition of polypharmacy (as noted in Chapter One) is stated as the daily use of four or more prescribed medications for at least 30 consecutive days prior to the study. This definition was developed after careful analysis of the literature. One consideration is based on the premise that in an effort to predict frequency, monitor occurrences of polypharmacy, and identify risks related to polypharmacy, a specific number is most commonly used in the reported definitions (Barat et al., 2000; Bjerrum et al., 1997; Veehof et al., 1999; Yvette, 2004). A second consideration is that two to four drugs are generally indicative of minor to moderate polypharmacy, producing a potential for an adverse drug event of less than 50%, whereas more than four drugs have a pronounced risk for adverse drug events (Bjerrum et al., 1997; Totter, 2001; Williams, 2002). This definition summarizes and quantifies the scientific characteristics of polypharmacy but does not address the nature or essence of the phenomenon as experienced in one's everyday life-world.

Polypharmacy: Past and Current State of Science

Researchers who explore drug efficacy, examine adverse drug reactions, and advocate principles of geriatric prescription practices have contributed to the understanding of polypharmacy since the 1990s. One event was The American Nurses Association's (1990) development of a definition for polypharmacy, the concurrent use of medications, after considering effective and safe drug therapy collaboratively with those who prescribe, administer, and consume the medications.

A second event was Beers et al.'s (1991) study that proposed criteria for medication management specifically for frail elders in skilled nursing facilities. Beers (1997) updated the criteria to encompass inappropriate medications for all elderly patients, including community-dwelling seniors over 65 years of age. More recently, Fick et al. (2003) revised and updated the Beers' criteria for potentially inappropriate medication use in the elderly in the United States by including disease-drug combinations. Even though polypharmacy has been of great concern for the past 20 years and has been well documented, the incidence of polypharmacy and its associated risks continue to increase. This has prompted Congress to establish objectives to improve the health and quality of life for elders by the year 2010 (United States Department of Health and Human Services, 2000).

Increased concern about polypharmacy may be due to an increase in the number of elders who choose to remain in their community as well as the increase in life expectancy. Additionally, an equally impressive increase in disease processes and co-morbidities and an increase in drug misadventures may contribute to this heightened concern. The current trend of office visits by elder adults that culminate in polypharmacy may be another factor (Aparasu et al., 2005). Other contributing factors are related to the increased efficacy of many medications and scientific gains in treating co-morbidity (Gurwitz, 2004). The new Medicare drug coverage plan and recent awareness of the first surge of baby boomers that began turning 60 in 2006 have certainly stimulated interest and added a sense of urgency to the complex phenomenon of polypharmacy.

Regardless of the impetus, when polypharmacy has been linked to the community-dwelling elder in research studies, discrepancies are often discerned. Reviewing empirical studies that span over 10 years helps one to determine the current state of the science and to uncover areas that have yet to be explored.

Systemic Review of Polypharmacy (January 1991 - October 2003)

In a systematic review of national electronic databases between January 1991 and October 2003, Fulton and Allen (2005) investigated polypharmacy and reported that 16 studies met their inclusion criteria. These criteria focused on the following three aims: 1) to determine definitions of polypharmacy used by primary providers, 2) to explore

methods used by primary caregivers to assess polypharmacy, and 3) to evaluate interventions that address polypharmacy in individuals 60 years and older.

Six of the 16 studies addressed polypharmacy in countries other than the United States: Canada, Denmark, Finland, Sweden, and the Netherlands (Bjerrum et al., 1997; Bjerrum et al., 1999; Jorgensen et al., 2001; Linjakumpu et al., 2002; Rosholm et al., 1998). The researchers found that multiple definitions were used to define polypharmacy and that there was no consensus on any one definition (Fulton & Allen, 2005). This information is consistent with the multiple, at times conflicting, definitions in the literature. One common factor was that a particular definition might be region-specific. For example, the United States defined polypharmacy relative to clinical indications, whereas the European countries addressed the number of medications. Due to the lack of definitional consensus and differing sample sizes, the incidence and prevalence of polypharmacy varied greatly.

Fulton and Allen's (2005) review noted several reasons for the increased risk of polypharmacy. Several studies reported the use of multiple cardiovascular medications—based on evidence and recommended guidelines—that can increase the risk of polypharmacy (Cleland et al., 2002; Masoudi & Krumholz, 2003). Others reported that advancing age and increased visits to the doctor, typically five or more visits per year, increased the incidence of polypharmacy, as does co-morbidity and female gender (Jorgensen et al., 2001; Kaufman et al., 2002; Veehof et al., 2000). It was also discovered that more females were taking multiple medications than their male counterparts with similar medical indications.

The second aim in Fulton and Allen's (2005) study, evaluating protocols to assess polypharmacy, produced few conclusive findings. Methods of assessment were recommended in the theoretical literature. Only three empirical studies on assessment methods were found: 1) the brown bag approach, 2) periodic medication review, and 3) medication adherence evaluation. No research was identified addressing the third aim of the review, effective interventions, and only a limited number of studies were located assessing polypharmacy in individual 60 years and older.

A summary of the findings in Fulton and Allen's (2005) review indicated that most research on polypharmacy related to the elderly is conducted in European countries;

studies in the United States focus more specifically on inappropriate medications. Additionally, they reported that only 12 studies conducted in the United States addressed polypharmacy issues not related to inappropriate medications. Moreover, there was no clear consensus on the definition of "polypharmacy."

Further, several gaps in the literature were noted, such as a lack of research aimed at specifically assessing polypharmacy. The three methods to assess polypharmacy, as noted above, are not necessarily accurate. Barat et al. (2000) reported that the number of drugs prescribed and the number consumed might not be the same. Barat et al. (2000) interviewed senior adults at home, examined their stored drug supply, and noted a large number of prescribed drugs (17%) in the drug storage container or brown bag at the time of the examination were not in use. Research relating to interventions aimed at decreasing the incidence of medication not clinically indicated was not addressed. Fulton and Allen's (2005) systematic review of polypharmacy points toward a significant gap in polypharmacological knowledge, indicating the need for future research and education necessary to achieve the Healthy People 2010 initiative. This initiative aims to improve the health of elders and ensure safe medication management for senior adults.

Polypharmacy and Patterns of Prescribed Drug Usage

One way to review safe medication management for the elderly is to reconsider trends in prescribing medications. In examining trends of prescribing medication, Rumble and Morgan (1994) used a longitudinal repeated measures design over a four-year period to assess prescription patterns in the senior population. Initially, the participants in the study were community dwelling elders. However, as noted in other longitudinal studies, attrition rate is often problematic; indeed, by the end of this study, some of the participants were in long-term care and some had died. A 318 item questionnaire was administered to collect data for a comprehensive profile of health, well-being, and socioeconomic status. Twenty-five general practitioners were asked to identify all patients 65 years of age and older within the survey population. All eligible individuals at the start of the study were non-institutionalized, under the care of their own general practitioner, living at the address provided, and randomly selected. Of the original 1,299 subjects, 80% took part in the first wave of the study. Of those who dropped out, 261 had

died, 63 refused follow-up interviews, and 25 were untraceable. Additionally, three participants moved out of the country.

The strength of the Rumble and Morgan study was related to the verification of the drugs in use. The researchers examined all prescriptions in the subjects' homes. While all prescriptions were validated, adherence to the medication was not monitored. Findings in the study indicated that, in general, there was a consistent overall increase in the mean number of medications used with increasing age at each measurement point. During the four year period, the mean number of drugs in use by the senior adults increased by 18%. The number of medications used was greatest during the fourth year of the study in all age groups except the 85-88 year old age group. A similar study reported the same findings even when the age-related pathology was controlled for (Stewart et al., 1991). Thus, according to Stewart et al. (1991), the demand for preventative drug therapies will lead to increased pressure to use multiple medication regimens.

Other findings in Rumble and Morgan's (1994) study indicated that the majority of elders take at least one drug, with 45%-54% taking two or more. Polypharmacy increases the risk of adverse drug events, and several researchers report that taking over four drugs is a better predictor of adverse drug events than age alone (Carbonin et al., 1990; Gurwitz et al., 1990). At each measurement point, Rumble and Morgan (1994) indicate that 7% of the participants reported taking more than four prescribed medications. The trend of women taking more medication than men during the four-year study was also observed. The top four therapeutic classes of drugs prescribed involved the cardiovascular system, central nervous system, musculoskeletal system, and gastrointestinal system. The most commonly used drugs by the residential and nursing home participants were diuretics, cardiac glycosides, hypnotics, anxiolytics, and analgesics. Conclusions of these studies have led other scientists to explore other trends attributing to polypharmacy.

Polypharmacy, Multiple Prescribers and Drug Interactions

The trend of multiple drug usage, which has the propensity to increase drug interactions, is often related to multiple prescribers. Findings in the Barat et al. (2000) study indicate that one of the major problems related to polypharmacy involved multiple prescribers, i.e., a positive correlation existed between polypharmacy and the number of

prescribers. More than one physician prescribed 31% of the drugs and the primary physicians were unaware of 25% of the prescribed drugs possessed by the study subjects. Prescriptions from multiple prescribers, as indicated in this study, were prone to polypharmacy with an increased risk for drug interactions. The use of polypharmacy was high in the study and drug interactions were more frequent than in other studies. Sixty percent of the participants used over three different drugs daily. Earlier studies indicate a lower percentage range of 24-40% of multiple medication usage (Stuck et al., 1994; Thomas et al., 1999).

Barat et al. (2000) interviewed 492 subjects (53% female and 47% male) to examine drug consumption and the extent of polypharmacy in 75 year old seniors living at home. The only demographics noted in this population were that 71% of the males and 41% of the females in this population lived with their partners; information related to socioeconomic status and level of education was not reported. The average number of drugs used in this population was 4.2 medications per person. Over 60% of the subjects consumed three or more prescribed drugs and 34% used five or more medications, with the top two categories of therapeutic drugs involving the central nervous system and the cardiovascular system. Females in the study used more diuretics, analgesics, antidepressants, and hypnotics, while males used more calcium channel blockers and hypoglycemics.

The strength of Barat et al.'s (2000) study was that the interview for prescribed medications was conducted at the home of the subject. Examining all medications on site minimized the potential for underreporting. However, 17% of the participants stored medications that were no longer in use in the current medication container, which may suggest a discrepancy in the actual number of medications consumed. The participation of primary physicians in the interview to validate prescribed medications added to the strength of the study. On the other hand, while the primary physician validated the prescribed medication, they had no knowledge of what was actually consumed. The study was limited to adults 75 years old. The demographic data were limited to age and living arrangements. Biographic information, such as ethnicity, socioeconomic status, cultural identity, or physical and mental conditions, was not reported. Another limitation was that the interview was limited to information about the medication, e.g., name, dose,

frequency. There were no questions related to compliance, misadventures with the medications, or participant knowledge about the medication. It was not clear if the information provided was obtained directly from the participant, a caretaker, or both.

Research detailing the participants' knowledge about medications may be as helpful as the healthcare providers' knowledge about the participants' medications in promoting health in the senior community. The information presented in this section indicates a continuous increase in drug usage and number of prescribers between 1994 and 2000, and thus a potential for increased risk for drug misadventures and the need for further research to address the complexity of polypharmacy. The need for a tool to manage medication regimen between prescribers might decrease the incidence of drug interactions.

Polypharmacy, Quality of Life, and Compliance (Adherence)

Polypharmacy contributes to non-compliance with prescribed medication regimens and affects quality of life directly and indirectly. The outcome of non-compliance can range from a decreased efficacy of treatment to life-threatening consequences (Rollason & Vogt, 2003).

To explore the possible association between the degree of polypharmacy and health-related quality of life, Henderson et al. (2006) designed a multivariate correlational study using one-way ANOVA and linear regression to evaluate medication usage among older American Indians in four age categories: 51-57, 58-66, 67-73, and 74-89 years of age. The interviewers recorded the subjects' medication in their homes from the prescription containers and administered the Medical Outcomes short form-36 questionnaire. There were 63 subjects: 59% were women with a mean age of 66.4 years. Subjects had been recruited from a local pharmacy department and were currently taking four or more prescribed medications. Thirty-six percent had a post-high school education, 43% were married or cohabiting, 50% were hospitalized the year preceding the start of the study, and 24% were hospitalized 3 months following the beginning of the study.

The factor of age in the Henderson et al. (2006) study was not significantly associated with the number of medications taken and did not affect the relationship between medications used and health-related quality of life. Small sample size may have influenced this finding. Increased medication use was positively correlated with self-

reported poor health, chronic disease scores, and negatively correlated with levels of education. Polypharmacy was significantly and positively associated with the perceived health scores, particularly with instrumental activities of daily living, even when controlling for chronic medical conditions. Henderson et al. (2006) cite instrumental activities of daily living (IADL) together with activities of daily living (ADL) as the most sensitive assessment of function in the older adult. These two instruments, IADL and ADL, measure the ability of the independent elderly to perform activities of daily living, such as bathing, dressing, and getting in and out of bed. Instrumental activities of daily living include the ability to go shopping, manage finances, prepare meals, and do light or heavy housework.

Perceptions of health may also be a factor within culturally diverse populations. American Indians and other indigenous people's perceptions of health might differ from that of the general population, as they tend to medicate with traditional medicine and may have a higher threshold for pain (Fortinash & Worret, 2004; Henderson et al., 2006).

Data collection methods can be considered particularly strong, as interviewers entered subjects' homes to record the actual medications prescribed. The limitations of the method used to collect data were the absence of information regarding adherence to medication regimens and lack of information regarding medications no longer in use. Balkrishnan (1998) and Hughes (2004) suggested other variables associated with adherence issues such as economic factors, medication knowledge, and untoward effects of the drug on the body. It is possible that not all medication was taken as prescribed. Another weakness in the study might be the self report response to a structured questionnaire related to general health, as different cultures might have different perceptions of health related issues. Lack of culturally sensitive instrumentation presents further challenges to both the polypharmacy dilemma and adherence to any prescribed medication regimen.

Adherence issues in the elderly community are, at times, overlooked, as they may resemble behaviors attributed to a stereotypic perception of aging. In a descriptive study comparing compliance behaviors of 70 patients over the age of 65 with those of younger patients, Evangelista et al. (2003) found that the older patients continued to have difficulty following prescribed regimens for several reasons, including forgetfulness,

unpleasant side effects of the medication, and concerns about costs. Earlier investigators shared the same findings (Cline et al., 1999). Ironically, polypharmacy, which is frequent in the elderly, contributes to forgetfulness, unpleasant side effects, and unpleasant taste.

Limitations in the Evangelista et al. (2003) study include small sample size, lack of clarity relative to gender and age of the younger sample, and a highly educated population with a strong support group, which may not be typical of this age cohort. The strength of the study lies in its validation of the accuracy of the compliance questionnaire with a family member and the resulting significant correlation. Research using an unstructured interview with the patient and the family might unveil a different response to compliance issues, including the potential for assessing reasons for non-adherence and formulation of positive intervention strategies. An unstructured interview with the patient may also explore their quality of life as it relates to culturally sensitive issues and non-adherence.

Polypharmacy and Adverse Drug Events

Adverse drug events significantly complicate expected outcomes, affect prognosis, present inordinate costs, and increase the risk for harm and even death (Bates et al., 1991). Like non-adherence, adverse drug events can culminate in life-threatening situations (Hanlon et al., 2000).

Veehof et al. (1999), in a retrospective, cross-sectional analysis, examined the relationship of drug-induced problems in general practice and polypharmacy in elderly patients 64 years of age and older. Data were collected over a two-year period from three general practice settings, and polypharmacy was defined as the use of two or more drugs used simultaneously for over 280 days. The sample consisted of 218 persons aged 65 to 74 years. One hundred and ninety-five of the participants reported a total of 247 adverse drug events. Due to incomplete data, the analysis was limited to 185 patients with 215 adverse drug event episodes. Most (69%) of the adverse drug events occurred in women over the age of 75 years, with an average age of 75.2 (CI 95%, 74.2-76.2). Elders experiencing adverse drug events were frequently experiencing moderate polypharmacy, i.e., four or five medications over a long-term period.

A summary of the findings of the Veehof et al. (1999) study indicates that antibiotics caused adverse events 15% of the time, antihypertensives were responsible for

adverse events 13% of the time, and non-steroidal anti-inflammatory drugs caused adverse events 8% of the time. Only one patient experienced one adverse event episode, 22 experienced two episodes, two experienced three episodes, and one had seven episodes. A review of the patients' medical histories indicated that those at risk for adverse drug events included patients with urinary tract infections, coronary ischemic disease, and chronic obstructive pulmonary disease. Veehof et al. (1999) did not confirm an increase in risk for drug events relative to the number of drugs used. This may be due to several factors, such as the long-term use of the same medications as opposed to recently prescribed drugs. Polypharmacy was only measured based on two or more drugs taken over a period of 240 days, and most adverse reactions occurred within weeks of adding new drugs to the current regimen. Interestingly, the physicians in this study used computer programs with reminders about the risks of potential interactions. Such computer programs can circumvent or at least decrease the prescription of medications that have the potential for an adverse reaction. One study limitation is the data collection method, which includes only recently reported adverse events. In many cases, elders might not visit their physician because of minor adverse events. Senior adults may not consider suspected adverse events to be serious, or they might expect and accept that all drugs have minor side effects (Cartwright, 1990). Moreover, only the recognized adverse reaction by the practitioner was recorded rather than recording information from the elder experiencing the reaction. If the elder had a reaction several weeks prior to the visit to the practitioner's office, discontinued the drug at that time, and was uncertain that a reaction had occurred, it is possible that no recognizable reaction would be recorded. The researchers recommend the need for future studies to reduce polypharmacy. A shortfall of the research lies in the absence of strategies to minimize adverse clinical events induced by polypharmacy. Further, consideration of senior adults' perspective related to the experience of physiological medication responses (pharmacokinetics and Pharmacodynamics) should be assessed.

Veehof et al.'s (1999) study did not confirm an increased risk for drug events with the number of drugs used. However, Garrett and Martin (2003) estimated that the frequency of adverse drug reactions increases with the number of drugs taken: 6% when the patient takes 2 drugs, 50% with 5 drugs, and 100% with 8 or more drugs.

Additionally, pharmacists have documented interventions to reduce incidences of medication-related risks in elders (Farrell et al., 2003; Jameson & VanNoord, 2001).

Polypharmacy and Pharmacist Intervention

Pharmacist intervention and consults have been shown to decrease the use of polypharmacy in both total number of drugs taken and total number of doses per day (Galt, 1998; Zarowitz et al., 2005). Doucette et al. (2005) and Galt (1998) concluded that an intervention of any kind by a pharmacist can reduce polypharmacy. Zarowitz et al. (2005) studied two waves of identical interventions separated by one year and noted a decrease in the average number of prescriptions per patient per month. The two identical interventions consisted of three components with a clinical pharmacist: 1) performance of drug therapy reviews, 2) education of physicians and patients about drug safety and polypharmacy, and 3) medication rounds and collaboration with physicians and the patients to correct polypharmacy issues. A decrease of 4.6 to 4.2 medications during the first wave and a decrease of 4.5 to 4 medications during the second wave were reported. The participants included 195,971 patients with complete data and were included in both interventions. The Henry Ford Medical Group is an organization with over 800 multispecialty physicians, over 25 outpatient clinics, and a group of clinical pharmacists in their clinics. All of the participants received prescriptions and medical care coverage by the managed care organization and were treated by the physicians in the group. Findings of the two interventions were almost identical, suggestive of both an effective intervention and the value of a sustained pharmacist's presence. A weakness in the study was that 91% of the participants in the second wave had also participated in the first wave, and it is possible that appropriate drug changes were made during the first intervention. Another potential bias might exist in the link between the participants and the researchers, who also acted as the healthcare providers for the participants. Further research is warranted and may add support for safe practice and improved health in medication management for senior adults in the community.

Chumney and Robinson (2006) reviewed the research literature related to pharmacist interventions with patients taking multiple medications and also noted a decrease in polypharmacy with interventions. In the 16 studies reviewed, the cornerstone of intervention was the medication review by pharmacists. The medication review

included: 1) patient interviews to evaluate medication usage and adherence, 2) a quality of life survey, 3) cost of the patients' medications, and 4) any reported problems with the medications. In addition to the medication review, the pharmacists made rounds with the medical team, were available for consult, and provided educational sessions for healthcare professionals. In the review, they observed one study with a 28% reduction in medications, a decrease from 5.7 to 4.4 prescriptions taken before and after an intervention, and 35% of the intervention patients had a dosage reduction for at least 1 medication (Schrader et al., 1996).

Pharmacists' interventions also demonstrated decreases in the average number of prescriptions in other studies (Galt, 1998; Jameson et al., 1995). While it is important to note that a decrease in polypharmacy is possible, it is also important to recognize that the optimization of therapy may include a change in medication regimen to more appropriate drugs—not necessarily so that the number of drugs will decrease, but more importantly so that the incidence of misadventures due to polypharmacy will decline.

Also reported by Chumney and Robinson's review (2006) was a humanistic outcome: improved quality of life along with decreased polypharmacy. The findings presented indicate that pharmacists' interventions not only improve patient outcomes but also decrease costs both for patients and for society in general. Yet, these studies are difficult to compare and synthesize as they differ in design, targeted population, and type of intervention.

Polypharmacy, Hospitalization, and Home Care

Successful interventions that can reduce medication usage are significant; especially when one considers that a negative consequence of polypharmacy is an increased risk for hospitalization (Col et al., 1990; Stewart, 1991). Hospitalization is a burden to the patient, family, healthcare profession, and society.

In a retrospective study, Flaherty et al. (2000) examined the relation between polypharmacy and environment in two different patient settings. There were a total of 833 subjects over 64 years of age. All were discharged consecutively from a single homecare agency to return home for independent or family care (Group A) or to be admitted to the hospital (Group B). Medication assessment for the two groups included data related to total medication usage (prescription and non-prescription drugs), degree of

polypharmacy (5-6, 7-9, and 10 or more drugs), and prevalence for different types of medications, including different types of inappropriate medications. Inappropriate medications were designated using a modified Delphi technique with a panel of 13 experts. Student's t-test and chi-square test were used to analyze continuous and categorical variables. Findings revealed no significant differences between age, gender, or primary diagnosis in the patients that were discharged and those admitted to the hospital. There was, however, a difference in the degree of polypharmacy between the two groups. The hospitalized group was taking a higher average number of medications (mean \pm SD: 6.6 ± 3.9 vs. 5.7 ± 3.4 , $p=.004$). The percentage of patients taking seven or more or 10 or more medications was also higher in the hospitalized group (46.0% vs. 26.2%, $p=.002$ and 21.2% vs. 10.0%, $p=.005$, respectively). About 50% of patients in the hospitalized group were taking more than seven medications. No differences were noted between the two groups taking five to six medications, and there were no significant differences in prevalence of medication usage between the two groups. However, the prevalence of clonidine, mineral supplements, and metoclopramide was higher in the hospitalized group. The use of inappropriate medication was higher in the independent home group compared to the hospitalized group (27% vs. 20%, $p=.040$). This group had a higher percentage of patients taking at least one inappropriate medication.

The clinical significance of the Flaherty et al. (2000) study examining polypharmacy and hospitalization in the senior adult population is consistent with other studies. (Classen et al., 1997; Col et al., 1990; Colt & Shapiro, 1989). Findings suggest that polypharmacy among the hospitalized group might have resulted in more adverse reactions, drug-drug interactions, and decreased compliance, contributing to the hospitalization. One of the hallmarks of adverse drug events is the degree of polypharmacy, with the risk of an adverse drug event approaching 100% as the number of drugs prescribed reaches 8 to 10 (Colt & Shapiro, 1989; Williams, 2002). Conclusions of this study provide evidence for the need for further investigation concerning the meaning of "living polypharmacy" in the community-dwelling older adult population, and the need to develop approaches to medication management that address prevention of misadventures and decrease the burden on elders, their families, and the healthcare system.

A strength in the Flaherty et al. (2000) study lies with the data collection protocol, in that all medications, prescribed and non-prescribed, were recorded by a registered nurse on the initial home visit. A limitation is that the sample was recruited from one single homecare agency in one geographic location. Thus, it might be difficult to generalize results to other agencies or geographic locations. Another observed limitation involved the chart review that only included patients currently enrolled in this particular homecare agency, and excluded patients that may have been discharged to a nursing home setting, moved to another agency, or perhaps died. The measurement of total medications prescribed and over the counter drugs might not give an accurate degree of polypharmacy, as the use of over the counter drugs among the elderly has been reported to be seven-fold that of the general population (Colt & Shapiro, 1989).

Flaherty et al. (2000) conclude that hospitalized patients have a higher degree of polypharmacy compared to the independent home group of patients, who nonetheless experienced higher incidences of inappropriate prescriptions. Whether polypharmacy is an indicator of sicker patients already at risk for hospitalization or that polypharmacy might directly lead to hospitalization due to drug misadventures is not clear. Further research is necessary to explore the meaning of the experience of polypharmacy, and to expand the existing knowledge of appropriate interventions, education, and safe practice modalities that address the need for multiple medication use.

Polypharmacy and Inappropriate Medication

Polypharmacy has been associated with increased rates of potentially inappropriate medication and dangerous drug interactions (Cannon, 2006). Taking less than 4 drugs is associated with a 12% increase in potentially inappropriate medications, while taking more than 5 drugs per day increases the risk to 40% (Lau et al., 2004). Healthcare providers have an opportunity to improve health related outcomes in the senior community by focusing on polypharmacy, thus decreasing inappropriately prescribed medications.

The link between polypharmacy, potentially inappropriate medications, and subsequent major health events has been cited in chapter one. The most commonly named criteria for potentially inappropriate medications for the elderly were developed by Beers et al. (1991), updated to include community dwelling elderly Beers (1997), and

most recently revised by Fick et al. (2003). Despite Beers' criteria, however, inappropriate medication use in the elderly population is prevalent, especially in long-term care situations (Zhan, 2005).

Lau et al. (2005) studied the consequences of inappropriate medications. They examined the association of potentially inappropriate medication with hospitalization and death among elders residing in long-term care for at least three consecutive months or longer. The goal of the study was to provide empirical evidence confirming this association. Beers' criteria were used to define potentially inappropriate prescriptions. Trained staff reviewed medical records and data were analyzed using descriptive statistics and regression analysis. Almost 50% of the participants were 85 years old and older, white, female, and more than half were experiencing dementia. Fifty percent of the residents had one or more exposure to potentially inappropriate medication during the year. One third of the residents were hospitalized during the year, and almost one in five died. Patients receiving potentially inappropriate prescriptions the preceding month were at a 30% higher risk for hospitalization and an additional 33% higher risk was posed for those who received potentially inappropriate prescriptions for two consecutive months. Those exposed to potentially inappropriate medication, as compared to those with no exposure, faced a 21% higher risk of death. Residents receiving intermittent exposure to potentially inappropriate prescriptions appeared to have an 87% higher risk of death.

Factors correlated with potentially inappropriate medication prescriptions included Medicaid coverage, functional deficits, communication problems, low nurse-patient ratios, questionable accreditation status of the facility, and lower income. Mental status, race, and nurse-patient ratio were associated with exposure and hospitalization, while Medicaid coverage, communication issues and the residents' functional status were associated with exposure and death. The number of medications was associated with potentially inappropriate medication exposure; however, this variable was not included in the analysis.

Lau et al. (2005) hypothesized that polypharmacy would exert an effect on adverse outcomes, such as hospitalizations and death, by increasing the risk of exposure to potentially inappropriate prescriptions. Although Lau et al. (2005) used longitudinal data to investigate the relationship of potentially inappropriate medication to adverse

outcomes for nursing home residents, clinical studies might be useful to address other issues associated with prescribing behaviors in the elderly community. What is not known is the experience of the exposure to potentially inappropriate medication through the perspective of the elder living the experience.

Interventions to Reduce Inappropriate Prescribing

Allard et al. (2001) evaluated the impact of an intervention program that targeted physicians, with an aim of reducing inappropriate prescription medication. They recruited 260 community dwelling elders to participate in a longitudinal, randomized controlled trial to monitor polypharmacy and the frequency of inappropriate medication prescriptions over a one-year period. Participants were randomly assigned to either the experimental group (n=80) or the control group (n=90). All were over 75 years of age and were prescribed more than three medications to be taken every day. The intervention was a case conference with a team composed of two physicians, a pharmacist, and a nurse collecting data. Pharmacological recommendations were sent to the physician as needed, based on a list of inappropriate medications. A nurse met with the experimental group in their home to record the medication inventory, document diagnoses, obtain permission for the study, inform private physicians of the study, and request the physicians' cooperation. During the study period, the nurse met with each participant monthly to review any changes in medications. The control group received traditional care by their primary physician.

Potentially inappropriate medication was monitored prior to and after the one year intervention. The data collector, a nurse, was blinded to group assignments. A team of experts had developed the list of potentially inappropriate medications; however, like Beers' criteria, the list was never scientifically validated.

There were no significant differences between the two groups. Attrition was fairly high, with 20 subjects dying during the year—six from the experimental group and 14 from the control group. Three participants from the experimental group refused to be assessed after the intervention program. Fifty-nine general practitioners and 12 specialists participated in the experimental group, while 63 practitioners and 14 specialists participated in the control group. The global assessment of the change in medication between the pre-intervention and post-intervention measure for each group showed an

improvement in the drug profile of 20% of the participants and remained stable at 70%. However, no statistical significance was noted between the experimental and control group. While there was a decrease in the number of potentially inappropriate medications in the experimental group, there was a similar decrease in the control group. This could be explained by the reduced power of the study, which ended with only 80 participants completing the final measurement. The intervention itself caused no significant decrease in the number of drugs prescribed and had no significant effect on reducing potentially inappropriate medication prescriptions.

Several studies have shown that as the number of physicians participating in a patient's care increases, so does the risk for polypharmacy and potentially inappropriate prescribed medications (Tamblyn et al., 1996). Goulding (2004) reported a positive association between polypharmacy and risk for inappropriate prescribing.

SUMMARY OF EMPIRICAL STUDIES

The systemic review of literature for the period of January 1989 through January 2006 demonstrates the complexity involved when elders are taking multiple prescribed medications. Implications extend to unsafe hospital and institutional care, the added burden on the individual, the family, and the economy. Other concerns include the high cost of medications, increased visits to the doctor, increased hospitalizations, more frequent visits to the emergency room, decreased quality of life, and even death. Incidences of polypharmacy vary greatly in the research literature secondary to the conceptual ambiguity of polypharmacy. Polypharmacy problems continue in spite of scientific evidence suggesting increased risks associated with this practice. Few of the research studies reported methods that indicated primary healthcare providers' assessment of polypharmacy. Most studies indicated continued use of potentially inappropriate medication despite the availability of the Beers' criteria.

Beers' criteria, as described at the beginning of this chapter, were initially developed by a team of expert professionals such as gerontologists and pharmacists in 1991 to address the medication management specifically in nursing homes. The criteria, while never tested empirically, were updated in 1997 to include the community-dwelling senior adults, and again in 2003 to include other drugs that can be used with caution. The medications on Beers' criteria list are medications that have been found by the expert

panel to be problematic for elders, but have the possibility to be used with caution if monitored closely. The list also contains medications that should never be used by elders.

Missing from this group of experts on the Beer's criteria were the voices of senior adults who are prescribed these numerous medications. Excluding the elderly from the Beers' criteria panel of experts might be analogous to the current trial studies on medications that do not use senior adults to test the very medications prescribed for them. Historically, senior adults who use at least 33% of all medications prescribed have been systemically excluded from participation in clinical trials (Gurwitz et al., 1992).

Within the United States, few studies were found that examined polypharmacy in the ambulatory senior community, and none was found that explored the essence of the experience of polypharmacy in the life-world of this community. Historically, the literature related to polypharmacy has presented few positive outcomes and some alarming negative outcomes, such as falls, fractures, and even death; nonetheless, the practice continues. While the literature reviewed suggests there exists a relationship between polypharmacy and increased risk for adverse drug reactions, potential for inappropriate prescribing, negative affect on quality of life, and non-compliance issues, little research has been performed to describe what it is like for elders who live polypharmacy everyday. Such gaps in the current literature leave health care providers, educators, and policymakers ill-informed about community-dwelling elders' experiences with medication use in the context of their daily lives. Until the community-dwelling senior adults' voices are included in the research process, our knowledge base, senior policies, and quality care strategies to meet the needs of this aging group of individuals will remain limited.

Polypharmacy and Non-Empirical (Qualitative) Research

Polypharmacy is an important component of the medical care of many elderly Americans. However, a tension currently exists between avoiding excessive use of medication and providing evidence-based therapies that may have a beneficial affect on morbidity and mortality, specifically in patients with multiple co-morbidities. Efforts to fully address the issue of polypharmacy in the elderly community must focus on expanding the knowledge base of risks, compliance, quality of living, and benefits of

medications by including seniors in the decisions that are made for them and research that will directly affect them.

Older Women's Needs and Medications

After reviewing the literature related to polypharmacy and senior adults in the community, little qualitative research surfaced. However, one descriptive study designed to elicit the medication experience of older, independent women was found. This study explored the older women's direct experiences with taking medication (de Crespigny et al., 1997). The aims of the study were to identify strengths and needs of older women, their medication use and related health issues, and to inform current education programs for primary health care workers and women. Researchers interviewed 142 women with the median age of 73 and an age range of 50 to 102. The flexibility in age was a purposeful consideration to include a diverse age cohort. All of the women in the study expressed confidence in managing their medications, making decisions, and all were physically active to some degree, some managing personal care even with debilitating health issues. Participants experienced a wide range of health problems such as hypertension, diabetes, coronary artery disease, high cholesterol, arthritis, stroke, and issues with poor vision and hearing difficulties.

Focus groups were conducted at two pharmacies: one was located in an upper-middle class area and the other in a lower socioeconomic class area. The participants were encouraged to voice their experience with medication. During periodic peer debriefing team meetings, themes were identified and discussed. Findings revealed that participants used a wide range of prescription and non-prescription medication. Collectively, over 66 different medications were consumed among these participants. This finding is similar to that in other studies (Brummel-Smith, 1998; Caranasos, 2004; Salzman, 1995). Less than five women in the study took sedatives, only one took an antidepressant, one was prescribed hormone replacement therapy and three took calcium for prevention of osteoporosis. Very few used antidepressants, tranquilizers, and sedatives. Local physicians prescribed all medications and only one participant was seeing a specialist.

Key themes that were identified in the study included medication use, access to medication information, interactions with health care professionals, self-efficacy, and

social support. The recurring theme was the need for quality, user-friendly medication information. Most of the women had minimal understanding of the pharmacological effects of their medications or the problems associated with polypharmacy. Most attributed a positive quality of life to their use of medications. Over 50% of the women had not received, sought, or accessed information from the physician, because they felt that the doctor's role was to make decisions for them and their role was to follow the instructions. Other reasons the women gave for not seeking information about medications from the physicians included lack of opportunity, poor comprehension of medical terminology, and perceptions of exhausting the physician's time. Less than 50% of the women stated that they would seek information about medications from the pharmacist in the future; fewer than 50% would make inquiries about medications from the nurse. Although the women had contact with the nurse in the hospital and at home, few saw the registered nurse as being willing and able to offer information and advice. Several of the participants stated they would seek information from family members. Many of the participants could only describe their medication by color and size. Few could pronounce the names of their medications or knew the action of the medications, and less than ten stated they read the information provided with the medications.

It is evident from de Crespigny et al.'s (1997) study, as in Henderson et al.'s (2006) study, that there were broad knowledge deficits related to medications among almost all participants, and that participants demonstrated a desire to communicate and build a relationship with health care providers. Despite increasing medical problems associated with medications and medication usage, participants demonstrated high levels of resilience in everyday activities along with continued community involvement. This finding is consistent with other studies, e.g., Kirkby et al. (1995); moreover, Gillespie (1995) argues for a shift in the stereotypic perception of older women in the community as being fragile, dependent, and a burden to the community. The study findings support this shift and suggest the development of educational strategies related specifically to the concerns and needs of this population.

Appropriateness of Medication Use

While de Crespigny et al.'s (1997) study identified medication usage related to women in the community, Spinewine et al. (2005) explore appropriateness of use of medications in the elderly in an inpatient setting. The purposive sample was comprised of five physicians, four nurses, three pharmacists, and 17 patients in five acute wards. The setting included five hospitals. This qualitative design used a semi-structured interview format to explore the perspectives of these healthcare professionals along with observations of care. Focus groups of older patients were conducted to examine the views of elders on healthcare issues.

Results of the Spinewine et al. (2005) study found that physicians, pharmacists, and nurses admitted that prescribing was sometimes inappropriate, counseling was inadequate, and discharge information was insufficient and usually limited to a list of medications. Observations and focus group data complemented the findings. Three categories underlying inappropriate use of medication emerged: 1) reliance on general acute care and short-term treatment, 2) passive attitudes toward learning, and 3) paternalistic decision-making.

The first category, reliance on general acute care, considered only acute care issues and seemed to overlook other considerations such as medications for chronic conditions. There was limited transfer of information on medication from primary to secondary care, which highlights the importance of continuity of care (Al Rashed et al., 2002). Several interviews indicated that prescribing was often not tailored to the older patient, such as consideration for renal and liver status (pharmacodynamics and pharmacokinetics) or consideration for the patient's ability to swallow. That notion is particularly poignant for those physicians not familiar with problems unique to the geriatric population, who often times may be the general practitioner or specialist in a non-geriatric setting.

The second category, passive attitudes toward learning, was sometimes due to the physician's lack of interest in teaching or not being familiar with medication needs for the geriatric patient. Some of the physicians offered explanations such as low perceived interest on medication management during undergraduate studies, lack of time for active learning during training, and difficulty with time constraints such as time needed to

review the information on the computer or the reference book each time medication information was not readily available. Lack of training for the physicians who write prescriptions for senior adults seems to be a worldwide issue (Larson, 2001).

The third category, paternalistic decision-making, included the perception that patients were passive and often not told about the side effects of a medication because the patient would be fearful of the medication or take the medication and immediately report signs of untoward effects. Several of those interviewed thought that the problems underlying their hesitation were insufficient decision-making and poor sharing of information. The pharmacists in the study thought that if the patients were given the information, they might be able to comprehend it. A final issue reported was the difficulty in sharing decisions about treatment with other prescribers because physicians were reluctant to interfere with treatment delivered by their colleagues. Indeed, two physicians acknowledged that information transferred to their colleagues might be limited for fear of offending them with comments related to inappropriate prescribing. These issues related to multiple prescribers were raised in a quantitative study as well (Kroenke & Pinholt, 1990).

Four physicians, two pharmacists, and one observer described the process leading to treatment review for inappropriate medication use in the Spinewine et al. (2005) study. The first stimulus to review treatment was the perceived multiple use of medications by the patients. Four of the geriatricians agreed that the use of more than five medications is cause for concern. Several physicians and pharmacists agreed that perceived input from a geriatrician with expertise in medication management of senior adults was valuable.

Several weaknesses were also noted in the study (Spinewine et al., 2005). Generalizability is an issue relative to the limited number of respondents in a limited number of hospitals. It is possible that healthcare professionals in the study paid more attention to medication issues when observers were present. Overall, this research confirms the value of qualitative approaches to study underlying assumptions of inappropriate medication use. There remains a need to explore other issues specific to "living polypharmacy" and factors that might support improved communication between healthcare providers and patients, ultimately improving healthcare practice.

SUMMARY OF QUALITATIVE STUDIES

While qualitative studies were limited, those reviewed indicated similar data as those found in empirical studies, namely that there were broad knowledge deficits related to medication usage among all participants, the need to communicate with the consumer and among all health care providers, limited or lack of medication information, and questionable safety concerns in medication management. Similar concerns existed related to addressing only acute care issues in acute care settings and, perhaps overlooking other considerations such as medications for chronic conditions specific to the elderly. Often, the medications for chronic conditions were missed. Another consideration was the limited transfer of information on medications from different levels of care. Several interviewers indicated that prescribing was often not tailored to the elderly patient, such as consideration for renal and liver status (pharmacodynamics and pharmacokinetics).

Few qualitative studies have addressed polypharmacy issues and fewer still have explored the meaning that the use of multiple medications has for community dwelling older adults. Future research exploring polypharmacy using a human science approach might lead to an emergence of new and safer opportunities to manage medication regimens in the senior adult community, thus addressing Healthy People's 2010 national agenda to improve the health of the elderly.

Polypharmacy, Politics, and Policy

As noted in the literature review, some issues related to polypharmacy have been quantified, qualified, and identified. One of the factors impacting polypharmacy may include policy directives aimed at meeting the needs of the aging population. Texas state law, for example, mandates that the Texas Department on Aging (TDoA) promote expertise and advice to legislators and elected officials on aging issues such as polypharmacy and the risks related to polypharmacy (TDoA, 2007). One of the risks of polypharmacy, as noted in the literature, is falls. Falls alone account for 87% of fractures in the elderly community and 60% of falls occur at homes lacking established prevention techniques. Falls increase emergency room visits, extend hospital stays, and result in long-term medical stays (Sahyoun et al., 2001; Sattin, 1992).

While the TDoA and stakeholders (TDoA representatives) evaluated numerous policy recommendations centered on prevention and recognized that polypharmacy is of

the utmost concern, they only addressed fall prevention as it relates to home modifications. Moreover, the panel's primary goal in creating prevention strategies was to remove environmental fall hazards, not necessarily to address the contributive dilemma of polypharmacy.

One of the United States health care system's most pressing social concerns is the prevention of injury and harm to the public. Public and political advances are being made in five areas, one of which is the prevention and promotion of autonomy in health care; nursing takes a leading role in this cause. The other initiatives include delivery and financing of healthcare, development of resources for personal and community health services, development of new knowledge through research, and health care planning as a matter of policy and regulations (American Nurses Association, 2003). The public initiatives are being developed through political channels at a time of transition from a disease-oriented system to a health-oriented system. This transition is in part due to the increasing costs of our current health care system. Traditionally, the trend is such that when the cost of health care increases, inquiries related to the possibility of reducing cost through prevention strategies are entertained. Currently, of the \$76.6 billion drug-related health care costs, 62% are attributed to hospitalizations, a substantial increase from years past (Cohen, 2000). Bergman-Evans (2006) implicates medication related problems in the United States as a public health threat, costing 200,000 lives and \$200 billion a year.

In summary, although the current policy, which attempts to decrease falls by modifying the home environment, is a start in the process of addressing health-related issues in the elderly community, a need still remains to explore falls related to polypharmacy and to develop interventions for prevention. Our political system's tendency to examine prevention strategies in trying to reduce health care cost may benefit from further research that explores living polypharmacy.

Polypharmacy and Ethics

In light of the literature that addresses polypharmacy in the senior adult community in relation to its trends, incidences, positive and negative outcomes, and political and policy determinations, the ethical component that addresses elders' societal value must not be overlooked. While there are numerous approaches for addressing ethics, The Code of Ethics for Nurses adheres to the moral intent of nursing practice

(American Nurses Association [ANA], 2001). The moral intent, often used interchangeably with the notion of "ethical," is more closely aligned with personal beliefs and cultural values; the term "ethical," on the other hand, refers to an individual's rationale for how one ought to act in a given situation. A code of ethics makes explicit the responsibilities of the nursing profession (ANA, 2001).

The Code of Ethics for Nurses with Interpretive Statements, ANA (2001) provides a framework for nurses to use in ethical analysis, decision-making, and resolving moral problems in their everyday practice. In the everydayness of practice, the nurse establishes a relationship with the patient that is respectful and unbiased. This respect extends to all who require health care services for the promotion of health and the prevention of injury and or illness.

Ethical principles that apply to "living polypharmacy" include beneficence, or seeking to do good and give quality care, and nonmaleficence, or attempting to circumvent or diminish the risk for harm (Bandman & Bandman, 2002). Additionally, two other ethical principles include respect for human dignity and collaboration to address the health needs of the individual and the public. The ANA's Code of Ethics (2001) clearly indicates that the nurse's primary commitment is the health, well-being, and safety of patients across the life span and in all settings, including community-dwelling senior adults. It is the nurse's responsibility, which encompasses moral, ethical, and legal obligations, to advocate for patient safety. This advocacy includes the prevention of medication misadventures related to the use of multiple medications. It is also the responsibility of the healthcare provider to listen to the elderly in a dignified manner, and to advocate collaboratively for their needs based on their lived experiences.

Unfortunately, in the United States there is little public outrage regarding ageism. While Gillespie (1995) argued for a shift in the stereotypic perception of older women in the community as being fragile and dependent, stereotyping the elderly continues. The elderly are not always treated with respect and dignity; instead, they are stereotyped as being senile and a burden to society (Bandman & Bandman, 2002; Gillespie 1995). Stereotyping the elderly is in conflict with the Code of Ethics that promotes respect and dignity in the health care setting and the community.

The consequences of living polypharmacy are presented in Chapter One and in this literature review. While some of the consequences are minor and can be resolved easily, many are major and represent a burden to the individual, the families, the healthcare system, and society in general. The consequences of polypharmacy also affect the nurse who is trying to advocate safe practice within the Code of Ethics for Nurses.

In summary, there is a tension between polypharmacy and nurses' moral and ethical responsibility to "first do no harm." The issue of polypharmacy, its consequences, and the moral intent of nursing has significant implications for research.

Implications for Research

Senior adults are frequent users of medication, as they consume at least 35% of all prescription drugs in the United States (Avorn, 1995). Seventeen percent of hospital admissions in this age group are due to drug misadventures associated with polypharmacy (Balkrishnan, 1998). Yet, there is limited research that focuses on the elder's perspective relative to polypharmacy. Most of the literature addresses the consequences of polypharmacy and interventions, which include falls, fractures, delirium, and even death. Interventions address strategies related to compliance or adherence issues. Research conveying the totality of the experience from the perspective of the mature adult, however, was not found in the literature. Although nursing has been recognized as a science and an art rooted in the human sciences (Orem, 1980; Parse, 1981; Parse, 2001; Roy, 1970), the scientific community has not embraced human science, phenomenology, or the science of essence.

HUSSERLIAN PHENOMENOLOGY AND "LIVING POLYPHARMACY"

Polypharmacy and the Life-World

The context in which polypharmacy occurs will now be addressed using conceptualizations developed by philosopher, Edmund Husserl. What we know about "living polypharmacy" in the life-world of the senior adult and the implications of taking four or more medications everyday on one's consciousness will be explored. According to Husserl (1970), the experience of the life-world is spatially structured and provides an indispensable foundation for all human experience. Life-world structures are experienced pre-reflectively, without being made the object of explicit reflection; life-world functions

in everydayness as the taken for granted in all human experience—always familiar, yet transparent. Thus, the life-world comprises the foundation of all of one's everydayness.

Husserl (1970) proposes that we all have a world pre-given, pre-reflective, with its own ontic meaning, and that each thing that is experienced gives itself as a thing in the world. In every experience of a thing, such as polypharmacy, the life-world is the backdrop, given as the ultimate foundation of all objective knowledge. That which is given is experienced as the thing itself in immediate presence or in memory. The life-world comprises the totality of man's involvement in everyday activities, which includes interpretation and description of one's experience (Husserl, 1970; Husserl 1973; Velarde-Mayol, 2000). The senior adult's perspective of the "living polypharmacy" experience and how it presents itself to one's consciousness forms the framework of one's being.

Nature of the Essence (Meaning) of Polypharmacy

Husserl interpreted the term "essence," which comes from the Greek language meaning to denote form, idea, and meaning. Essence makes a thing that which it is. Essence is the meaning or the structure of a particular thing or idea. In Husserl's writings, essence refers to the "what" of the thing, or its meaning, rather than the "that," its existence. Essence provides meaning to the experience of polypharmacy. It is in the probing of the phenomenon for typical structures and essential characteristics that one might start to understand "living polypharmacy." These conceptualizations—life-world and essence—form the basis of the study of "living polypharmacy" as its meaning to the person who is experiencing taking more than four medications is made visible in his or her taken-for-granted everydayness.

In conclusion, exploring the meaning of the experience of the use of multiple medications from the perspective of elders who are experiencing the phenomenon requires a Husserlian approach that can complement and extend the findings of empirical studies. Some of the limitations in empirical studies cited the use of secondary data, public data files, data from a larger study, and retrospective chart reviews, all of which may limit reliability and validity of findings. Other studies reported the use of self-report data, which may or may not be completely reliable (Aparasu et al., 2005; Evangelista et al. 2003; Flaherty et al., 2000; Veehof, et al., 1999). Other studies related to polypharmacy were fraught with conceptual and methodological issues relative to

compliance and non-compliance, and polypharmacy and lack of conceptual clarity (Pesznecker et al., 1990).

Polypharmacy has been extensively studied internationally and is reportedly increasing in incidence among the elderly. Exploring the meaning of the experience of multiple medication usage with a humanistic science approach may reveal the presence of myriad realities and possibilities to manage medication regimens in the life-world of the community-dwelling elder.

Husserlian phenomenology will be explained in greater detail in the following chapter. Furthermore, Chapter Three will delineate the study's guiding philosophical framework and methodology.

Chapter Three: Methodology

INTRODUCTION

This chapter introduces the rationale and philosophical assumptions for the qualitative design selected—Husserlian phenomenology. An introduction to Edmund Husserl (the father of phenomenology), his descriptive approach, and underlying assumptions precede a description of the methodology used in this study. The research methodology that explores the essence of the experience of polypharmacy includes the design, sampling plan, setting, ethical considerations, data collection, data analysis, criteria for rigor, and study limitations. A summary follows the criteria for rigor.

PROBLEM STATEMENT

Recent estimates suggest that the older population in the U.S. will grow by 75% over the next 30 years. The number of individuals 85 years of age and older is predicted to reach 3 million by the year 2020. In 2050, there will be 18 million in the 85-95 year old age group. Marinella et al. (2000) reported that this group, 85 years and older, is the most rapidly growing group of the entire population (Chelluri et al., 1992). Advances in science and medicine are allowing individuals to live longer, but these benefits are not without cost. Although these advances have led to new and increasingly effective treatment regimens, they may also contribute to polypharmacy due to surges in coexisting chronic illnesses and acute disease states, each requiring a different medication regimen.

Already, polypharmacy has seriously impacted the elderly community. Researchers who evaluated a cohort of older, community-dwelling senior adults estimated that 27.6% of adverse drug events, a risk related to polypharmacy, are preventable. Preventative drug-related morbidity is the fifth most costly health condition in the United States (Ernst & Grizzle, 2001; Gurwitz, et al., 2003). For every dollar spent on therapy, as much as \$1.30 is spent managing drug-related problems, a statistic that has prompted calls to improve drug safety through a reduction in polypharmacy (Ernst & Grizzle, 2001). Nonetheless, polypharmacy continues to have a significant impact on senior adults, families, society, economy, and healthcare practices.

PURPOSE, SPECIFIC AIMS, AND RESEARCH QUESTIONS

The purpose of this study is to explore the meaning of the experience of polypharmacy in the life-world of the community dwelling elder in order to increase awareness of this condition among policy makers, academicians, and healthcare professionals. It is assumed that an increased awareness of the experience of living polypharmacy will help improve the everyday life of senior adults.

The specific aims are: 1) to explore how community-dwelling elderly who take multiple medications daily describe the essence of their experience with polypharmacy in the context of their life-world; 2) to expand the body of knowledge needed to educate policy makers, researchers, and healthcare professionals regarding the perspective of an individual who is "living polypharmacy"; and 3) to address the Healthy People 2010 initiative to improve the quality and health of senior adults.

Moreover, the answers to the study's guiding research questions will better explain what it is like for elders to be "living polypharmacy." In particular, research question one is presented to draw correlations and similarities in an effort to describe the ways in which elders explain their understanding of taking multiple medications on a daily basis. Research question two builds off this knowledge to determine how elders are impacted by taking multiple medications, i.e., does their quality of life suffer, what coping mechanisms do elders create for the challenge of multiple medication use? Further, research question three aims to decode what challenges the elderly face, if any, by the complexities of Medicare Part D, and the strategies elders employ to navigate through this system. Finally, the study aims to answer a final question: what can healthcare providers learn from elders who live with the realities of polypharmacy in their everyday lives?

RESEARCH DESIGN

A descriptive phenomenological approach was chosen to explore the senior adult's life-world of living polypharmacy. The goal of this approach is to describe the essence, or meaning, of the phenomenon called "living polypharmacy." This methodology is an approach that accurately describes the structure of an existing phenomenon as it appears to the consciousness of an individual living the phenomenon (Husserl, 1970; Husserl, 1998). In this study, the phenomenon of interest is the senior

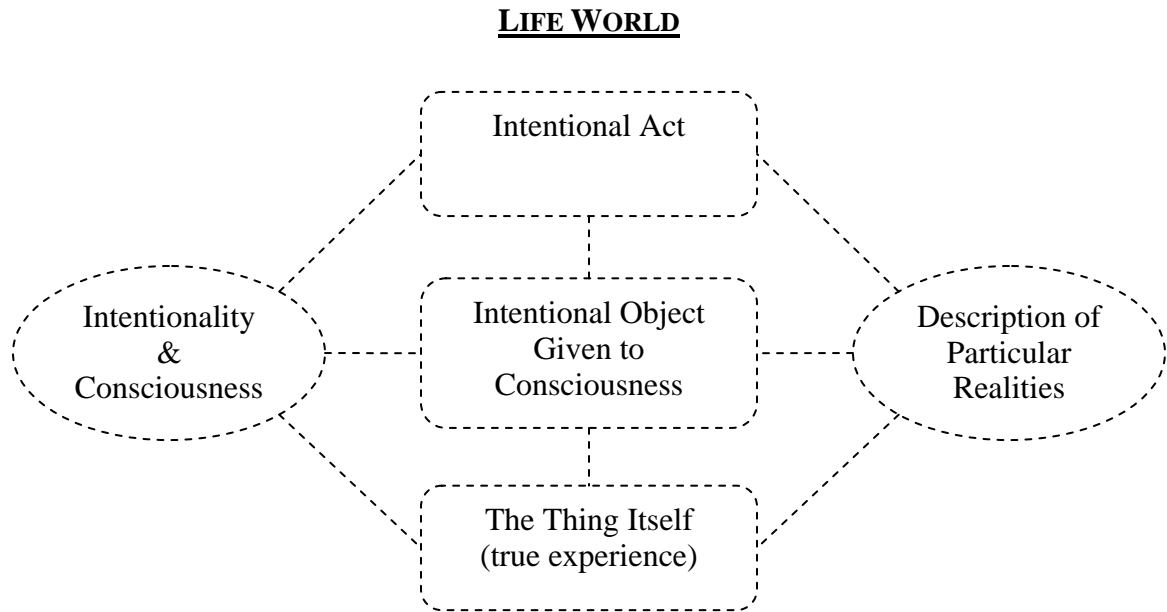
adult's life-world experiences and perceived meanings of daily use of multiple medications (Husserl, 1970; Velarde-Mayol, 2000). Husserl's philosophical underpinnings and concepts related to intentionality, essence, bracketing, intersubjectivity, and meaning of "lived polypharmacy" are relevant in this study and will be used to guide the research methodology.

Introduction to Husserlian Phenomenology

Some scholars characterize Husserl's philosophy after his retirement as a transition from basic phenomenology to phenomenology of the life-world (Velarde-Mayol, 2000). His later life interests in history and the life-world seemed to have motivated his departure from his initial Cartesian-based philosophy. For Husserl, the attraction of phenomenology was in its promise as a new science that could achieve true meaning by penetrating deep into one's consciousness. Phenomenology is what is given to knowledge as one returns to the thing itself. Thus, phenomenology is interested in essences, meanings, and descriptions of essential data given to consciousness in a person's life-world (Husserl, 1970; Velarde-Mayol, 2000).

Edmund Husserl is a deeply complex and often inaccessible philosopher. Nonetheless, his work is deeply relevant and some of his salient notions will be briefly discussed to lend accessibility to the philosophical assumptions of this study. The dominant notions that are essential to understanding Husserlian phenomenology are intentionality, essence, bracketing, and intersubjectivity (Husserl, 1970; Moran, 2005; Patocka, 1996). Husserl investigated the essential structures of consciousness and how particular experiences were established. Koch et al. (1995) noted that Husserl viewed consciousness as a dialogue between an individual and that person's life-world, or one's "everydayness." A model to clarify this phenomenological approach is presented here (Figure 1).

Figure 1: Husserl's Life-World and the Structure of Consciousness



Bracketing: elimination of preconceived notions.
Reality given in an experience is reduced to this experience.

As noted in the model, the life-world that we encounter daily is our taken-for-granted world, and it encompasses intentional acts, intentional objects given to consciousness, and the thing or lived phenomenon itself. In this study, the life-world is the everyday experience of "living polypharmacy." This experience has meaning and history for each individual, as he or she directly and intentionally grasps the essence of the phenomenon (intentional act). The individual describes the particular realities (intentional object given to consciousness) as the true experience of living polypharmacy surfaces (the thing itself). Husserl (1970) and Moran (2005) view the participant as an aggregate, or component, of his or her life-world and one who remains in constant dialogue with their life-world. Individuals taking multiple medications daily experience polypharmacy; thus, they can best describe the phenomenon as it becomes structured within their consciousness. It is the participant who is the most reliable source and who can best describe the thing itself *as it is experienced*. As the individual self-interprets the

experience, the researcher listens to the description. Together, the participant and the researcher co-create the meaning or reality of that experience as it unfolds. As the participant explores the experience, the researcher continues to bracket preconceived notions while focusing on the phenomenon.

Husserlian Concepts

A brief exploration of Husserlian concepts that are pertinent to this study follows.

1) Intentionality is central to understanding Husserl's philosophy (Smith & Smith, 1995). In his book *Ideas I*, Husserl (1913) explains intentionality as the process by which the mind is directed toward objects wherein one can develop a description of a particular reality. The fundamental structure of consciousness is intentional, and intentionality indicates the inseparable connectedness of the human being to the world. A human being is in constant dialogue with his or her life-world. Husserl held that there must be some kind of content in the mind that accounts for this directedness or intention (Husserl, 1913). One cannot describe that of which one has no knowledge. Moreover, it is not possible to think without being cognate "of" something, e.g., an object. The characteristic of this mental act, or the thinking, seeing, describing, and referring to an object, is intentionality. The building of one's knowledge of reality starts with conscious awareness, and intentionality becomes self-evident as it is how we experience everything in our life-world. Intentionality names all the sets of correlations between subjectivity and objectivity (Moran, 2005). In this study, as one intentionally raises awareness of the enigma of living polypharmacy, possibilities for interventions may surface. These possibilities are made visible through the person who knows and is living the experience.

2) Bracketing is also foundational to Husserl's thinking (Husserl, 1913). It is the process of suspending one's preconceived notions, judgments, and beliefs in the reality of a natural world in order to study the essential structures of the world and to achieve the purest form of description. It is a neutralization of belief. Bracketing continues throughout the research process in order to circumvent contamination of data. Husserl used the words bracketing, eidetic

reduction, and epoche interchangeably to describe the change of attitude necessary for philosophical inquiry. For the purpose of this study, the notion of bracketing is used with reference to eidetic reduction and epoche to denote suspension of empirical subjectivity so that the phenomenon of living polypharmacy may be defined in its essential and absolute form. Hence, the researcher suspends attitudes, prejudices, judgments, and pre-conceived ideas in order to place in brackets whatever facts belong to essential being. This study made use of phenomenological reduction, or bracketing, through preparation, field notes, journaling, meeting with the research team at each decision-making level, and by providing a copy of the transcript to each participant after each interview to discuss their descriptions and clarify any judgments by the researcher that might circumvent pure description. Husserl (1913) referred to this process as a cleansing of the mind to concentrate the attention on essences, or the meaning, of the phenomenon of interest.

- 3) **Essence** is crucial to understanding Husserl's philosophy. It is the meaning, essential structure, and characteristic of a thing uncovered once reduction has been achieved. Essence is the true being of something. It is what makes something what it is, without which it would not be what it is. To confuse the essences of things with the mental representations of these essences is to confuse the aims of Husserl's phenomenology. Essence is the essential structure of consciousness uncovered; it is what surfaces from consciousness as an object or experience is made unique from other experiences. It illuminates or causes the thing, or the experience, to be what it is. In Husserl's (1913, 1970) writings, he refers to the meaning or essence as the *what* of the thing. In the process of successfully achieving contact with essences, the structures of consciousness come face to face with the thing itself. This study seeks the essence, the meaning, and the structure of living polypharmacy.
- 4) **Intersubjectivity** refers to how we understand each other and how we consider others. Within social interactions, intersubjectivity is understood with reference to how one is in the world. How we are in the world with others is through our human capacity for shared language and meaning. Husserl (1950)

noted in *Cartesian Meditations* that the world in which we live encompasses our shared meanings and language, and it is through this mechanism that one can describe, explore and share one's experiences.

Conceptual Application of Husserl's Ideas to Nursing Practice

Applying Intentionality

Intentionality, which should not be confused with intention, is having something in mind, and is the fundamental characteristic of all consciousness. Nurse theorist Jean Watson notes that intentionality conveys a philosophical meaning referring to a consciousness that is directed towards a mental object or toward an expectation or belief (Watson, 2002). The person experiencing the use of multiple medications can grasp this notion and describe it best, for they are the vehicle through which the essential structure or the meaning of the phenomenon of interest ("living polypharmacy") may be accessed and subsequently described. Frequently, nurses are called upon to grasp what is in their consciousness as they are asked to move from a familiar hospital unit to an unfamiliar one due to staffing patterns. The nurse, with intentionality, draws from his or her body of knowledge, or experience, to facilitate functioning in a different area. Another area that is unique to nursing practice is assessment—the patient is asked to reflect with intentionality and to describe what is happening when, for example, new medications have been prescribed and untoward physical reactions are being experienced. Requesting that the patient describe the essence of the experience in this intersubjective manner is reflective of a phenomenological view of a person's life-world. One describes the experience through personal knowledge and co-creates with the nurse what is meaningful and possible. In this co-creating mode, the person's mind is directed toward an object, or idea, and both nurse and patient are open to discovery to new possibilities for care. The opportunity for discovery emerges in the context of the experience in the life-worlds of both patient and nurse (Parse 1981).

Jean Watson (2002) views intentionality and caring-healing consciousness as a new and visionary way of nursing practice. She proposes that intentionality and setting one's intentions within the context of caring consciousness reminds and directs the nurse to the essence of what is important in healthcare.

Applying Bracketing

By suspending assumptions about the existence of things, one can focus attention to the actual phenomenon in their intentionality. Nurses are expected to practice the art and science of nursing as they bracket emotions and experiences in order to provide concerned care. Nurses bring their own cultural values, beliefs, and principles to the clinical practice setting; however, it is possible for a nurse with certain values to suspend those beliefs in caring for an individual with a different value system. For example, a nurse in a hospice setting might recently have experienced a death in their family. Yet that nurse is able to suspend personal emotion and experience in order to make the patient more visible. The nurse in the emergency room caring for an elderly person experiencing an adverse drug event might have had a similar experience recently with a loved one. Perhaps a nurse, assessing a patient recently diagnosed with HIV, might also be experiencing the loss of a sister who contracted HIV from a blood transfusion. According to Parse (1981), the ability of nurses to focus on bearing witness to what patients say is important and meaningful for patient health and, in so doing, nurses suspend personal judgments of the patient; in turn, patient quality of care is improved. Nurses are in constant dialogue with the life-world of caring and providing quality care. Bringing one's own emotions, concerns, and personal experiences into the practice setting might impair care for the patient and pose an ethical dilemma. Thus, one learns quickly to bracket preconceived ideas and prejudices in an effort to provide ethical and safe practice and to contribute towards positive treatment outcomes.

Another avenue to explore in relation to bracketing is the assumption held by some healthcare providers that senior adults are demented, frail, and helpless. Others might have the notion they will not have to worry about caring for the older adult due to the specific area of expertise, which is exclusive of geriatric care (Bandman & Bandman, 2002). Yet senior adults often visit clinics, emergency rooms, coronary care units, and other areas that are not necessarily staffed by healthcare providers trained in geriatric health care issues. Frequently, nurses, due to staffing patterns and nurse-patient ratios, gravitate to other units in a healthcare facility. In these settings and situations, the nurse must filter out stereotypical thinking and focus on the ethical considerations in delivering quality healthcare to all, regardless of age (Bandman & Bandman, 2002). In summary,

bracketing is inherent in nursing's code of ethics, as nurse-patient relationships are established and care is delivered without prejudice (ANA, 2001).

Applying Essence

The essence or meaning that each senior adult draws from that which is immanent in his or her consciousness reflects the values, beliefs, and uniqueness within the context of one's life-world. While some argue that Husserl restricted his focus to the individualized, personal meaning of an experience and did not explore how others might experience a phenomenon, others view this as an opportunity to expand understanding. Swanwick and Barlow (1994) use this opportunity to suggest that the analysis of several unique meanings could lead to a greater understanding of the phenomenon being explored. While three different senior adults might describe the essence of their personal experience with the use of multiple medications, a theme or several themes might surface that lead to a greater understanding of the phenomenon. It is, in fact, establishing triangulation by validating data as the story unfolds.

Applying Intersubjectivity

Intersubjectivity is unique to human interaction. It is how we are in the world with others and how through shared meaning and language we come to understand one another. As the healthcare providers interact with consumers who are living polypharmacy, the consumers' experiences are responses to the healthcare providers' inner experience. Some of the patients are non-compliant with medications; however, they may not share this with the provider for fear of being rebuked or having their concerns devalued. The objective of the consumer is to be recognized, valued, and understood in his or her world, and to participate in making healthcare decisions for one's own body. The ability to care, to collaborate with patients as they manage their own care plan, and to listen empathically encourages human value. This type of caring and understanding promotes positive patient outcomes (Diekelmann, 2002).

Additionally, one of the principles in ANA's Code of Ethics (2001) includes respect for human dignity and as the nurse and the consumer interact, it is imperative that the nurse listen and value the individual's experience in a relational manner. The participant's objective is to describe his or her need, or experience with the medication. That experience might include concerns with reaction to the medication, such as

nosebleeds and bruising, and the nurse's responsibility is to respond by understanding that individual's concerns and fears.

METHODOLOGY

In describing polypharmacy as given to and structured in consciousness, Husserl's (1970) philosophy offers a way of accessing that which is essential in the lived phenomenon. His approach supports various realities and possibilities rather than focusing on limits. It is within this phenomenological philosophy that interpretation of the essence of living polypharmacy, as explored through the perspectives of community dwelling elder, allows for the discovery of new meanings and strategies for teaching and practice.

Sample

After obtaining approval from the University of Texas Medical Branch Institutional Review Board (IRB), the researcher initiated a purposeful sampling plan to recruit 20 volunteers. Since the goal of phenomenology is not generalization of findings but to acquire understanding of the meaning and essence of an experience from the individual's perspective, a sample size of 20 participants with thick, rich narratives was appropriate. The sample consisted of 20 urban and rural individuals, living polypharmacy, residing in southwest Texas, and over the age of 65 (range: 65-90 years of age).

Recruitment and orientation meetings were scheduled through community colleagues, the educational director of a church in southwest Texas, the president of an AARP group in Fort Bend County, and the president of a Recreational Vehicle Club (RVC) for retired senior adults. These individuals, the educational director and the two presidents, were contacted personally; the study was explained to them, questions answered, and an invitation extended to the researcher to meet with groups of seniors at a monthly scheduled meeting. The educational director of the church scheduled the first orientation meeting during the senior adult monthly scheduled "game day." The researcher provided refreshments. Informed consent (Appendix B) was read during the orientation meeting, questions regarding the study were answered in detail, and the researcher explained that this information would be repeated prior to the interview with each individual volunteer. After a complete explanation of the study, copies of the

informational flyer (Appendix A) were distributed. The flyer includes the phone number of the researcher and the individuals were encouraged to contact the researcher after the meeting at their convenience or later via phone to ensure privacy. Meetings with the AARP and RVC group followed the same format. Both of these groups were oriented during dinner meetings. Additionally, the RVC group included a weekend stay at an RV camp. The Friday evening orientation meeting with the RVC group was followed by scheduled interviews for Saturday and Sunday. The volunteers that attended the orientation meetings encouraged others to call the researcher and a second orientation meeting was scheduled.

The first interview, scheduled after a participant contacted the researcher, was held at a time and place convenient for both participant and the researcher. Prior to each interview, the researcher met with the participant to visit, and once again read the consent form, answered any questions, and reviewed the study in detail. The participant signed the consent form after he or she was clear about participation and a copy of the consent form was given to each participant.

Confidentiality of each participant record, in audio-tape form or print, was ensured by removal of all identifying data and use of a pseudonym and a numerical code. The signed consent form, the only document bearing the participant's name, was stored in a doubled locked file separate from other study documents.

All volunteers, eleven female and nine male, met the inclusionary criteria. They were 65 years of age or older, had the ability to verbally articulate in English or Spanish, and were currently consuming at least four prescribed medications daily for at least 30 days prior to the study. The researcher is fluent in English and Spanish. The criterion of four medications was selected based on the definition discussed in Chapter One. Attrition involved only one participant who expired prior to the second interview.

Setting

The researcher conducted all interviews at a setting that was convenient to both the participant and the researcher. All interviews took place in a quiet private area in homes, a coffee house in a hospital lobby early Sunday morning, three RVC camp offices, a church library, and an AARP community center library. The RV camps were at Mathis Lake, La Marque, and San Antonio.

Data Collection

All data collection occurred over a period of twelve months. Data included reflective journaling, field notes, and notes related specifically to the decision making process. Demographic data regarding gender, age, ethnicity, educational level, marital status, cohabitation status, economical status, insurance affiliation, and geographical status (Appendix D) and medication history (Appendix E) were also gathered. Participants provided a list of their medications and their medication containers in the initial interview. Some of the participants provided documentation of their medical histories, medication adjustment periods, blood pressure and blood sugar charts, and laboratory findings. One individual had a medical history dating back to 1939.

The participants had an opportunity to ask questions as the researcher visited with each participant for at least one hour before the interview and up to an hour after the interview. Interview visits occurred at various times: over lunch, breakfast, tea, a visit in the home, or a visit in a private office. The actual interviews lasted 30-90 minutes and were conducted by the principle investigator. The format for all the RVC interviews included a weekend stay at the RV camp for Saturday and Sunday interviews, meals, and fellowship. Interviews with all participants were conversational and included topics such as politics, family news, changes in the complexity of the neighborhood, World War II memories, and past, present, and future events.

While the visit began with general conversation, the actual interview was introduced with an open-ended question asking each participant to describe his or her experience of taking medication daily. This was followed by other open-ended interview questions. An interview guide with possible probe questions (Appendix C) was used to facilitate the conversation. The purpose of this format, the general conversations followed by interview questions, was two-fold. First, the researcher established rapport and trust with the participant and secondly, the broad question was intended to elicit reflective thinking about experiences with medication and what living polypharmacy meant to each individual in his or her own words. Each interview was tape-recorded and transcribed verbatim by a trained transcriptionist. The researcher removed all identifying markers prior to the transcription and destroyed all tapes after completion of the study.

Ten to fifteen minutes following each interview, the researcher taped additional information that was later documented in the field notes and into the journal. This information included, but was not limited to, the general impression of the participant, the environment, and participants' emotions, as well as the researcher's impressions, mood of the moment, observations, perceptions, and possible biases. Journal notes were also made during the reading of the transcripts. This information was shared with the research team during debriefings.

Each participant received his or her transcribed text and its interpretation in the mail prior to the second scheduled meeting. During the second interview, the researcher validated interpretations and descriptions of the phenomenon and gathered any new information provided by the nineteen remaining participants. Preceding the final or third interview, a letter that summarized the structure and meaning of living polypharmacy based on the interviews was sent to all participants (Appendix F). All participants wrote comments on the letter and made several comments about the letter during the interview. The third interview served two purposes: 1) to return the final description of polypharmacy, its structure, essence, and characteristics, to the source (the participant) who could best verify its accuracy; and 2) to add any additional data that the participant voiced. The researcher individually met with twenty volunteers for the first interview and nineteen for the second and third interviews.

In summary, the data collection included prolonged visits that produced rich, thick narratives from fifty-eight interviews that were taped and transcribed by a trained transcriptionist. Field notes and journaling with data relevant to the participant's effect and the general atmosphere of the environment were recorded immediately after each interview. Other data collected included demographic data and medication history.

Data Analysis

Analysis for this descriptive phenomenological study followed Colaizzi's (1978) interpretive method. Colaizzi's method is appropriate for this descriptive study as it aligns with the Husserlian phenomenological exploration of the essence of a phenomenon. His analysis involves a process of decontextualizing and recontextualizing narratives, and regrouping text into overarching analytic themes. Research nurses, a colleague, and a philosophical scholar who has experience with Colaizzi's method

participated on the interpretive team. The dissertation committee members also had an opportunity to review the data. An explanation of Colaizzi's steps of analysis follows:

- Stage 1: Acquiring a sense of each participant's description required reading and re-reading all the participants' descriptions of the phenomenon at least three times. In addition, transcripts were compared with the tape recordings for accuracy, tone, and pacing. The researcher also referred to her field notes and journal entries that documented the context in which polypharmacy is situated.
- Stage 2: Significant statements or direct quotes that pertained directly to the phenomenon were extracted in the re-reading of the transcripts.
- Stage 3: Formulation of meanings is the result of interpretation of the information extracted in step two related to the experience of taking multiple medications. In keeping with Husserl's bracketing notion, the researcher used a reflective journal to make visible personal biases and remain focused on the original text, allowing the data to stand on their own. Journal entries and field notes were discussed in the debriefing meetings.
- Stage 4: Organizing formulated meanings into clusters of themes was done by reviewing the significant statements from the original interview and remaining faithful to the text. The aggregated meanings were arranged into clusters of themes. Husserl's assumption of returning to the thing itself was addressed by returning to what is given to experience. The researcher returned to the original participant descriptions to verify the clusters of themes.
- Stage 5: An exhaustive description of the phenomenon was accomplished by integrating all the ideas generated from the data into one structured description.
- Stage 6: Describing the fundamental structure of the phenomenon was achieved by reducing the exhaustive description to its essential structure, an unequivocal statement of identification noted as descriptive identification of the essence of polypharmacy.
- Stage 7: Final validation was achieved by returning to each participant for a final interview to elicit his or her views on the essential structure of the phenomenon, to ensure that it represented the participant's experience, the participant's own

voice, and to ensure that any new data be included in the final document. This stage ensures that the data obtained were correct, complete, and clear and that nothing was changed, added, deleted, or ignored. A letter was mailed with the description of the findings to all participants and a meeting was scheduled so each participant had an opportunity for final review and input.

Rigor

Criteria for rigor throughout the study are based on Lincoln and Guba's (1985) method to establish trustworthiness. Ultimately, it is the researcher's responsibility to establish that the findings for this study are credible and faithful to the interview text. The following is a description of each criterion, and how it was met in this study.

1. *Credibility* is defined as the degree of confidence one has in the truth-value of the findings, and was established by the following methods.
 - a. Prolonged multiple interviews (prolonged engagement) were conducted with each participant to establish rapport; one interview with 20 participants and two with nineteen participants over a period of 12 months. Although interviews lasted 30-90 minutes, the actual visits lasted one to three hours each. In addition, the RVC group interviews entailed a weekend stay each time.
 - b. Member confirmation (member checks) included mailing a copy of the transcript to each participant after each interview. On each subsequent visit, the participants were asked if the interpretation coincided with their descriptions. Prior to the third interview, the participants were mailed a letter summarizing the findings of all the participants and were asked again if the interpretations met their descriptions, as well as, "Did I get the story correct or do I need to add, change, or delete anything?"
 - c. Peer debriefing was accomplished at periodic research team meetings conducted to attain consensus related to themes and to discuss the reflective journaling and field notes. Potential prejudices and biases were discussed; interpretations and themes were clarified and decisions at every level of the process were affirmed.

- d. Triangulation, or exploring multiple sources of data as the story unfolds to improve the quality of findings, was achieved by conducting multiple interviews with each participant, journaling, and maintaining field notes. In the third interview, some participants validated each other's responses, as the findings were in a letter with a summary of the findings. Some of the participants commented, "This is not something I said but I agree with it and it needs to be included."
2. *Applicability* refers to transferability of findings (Lincoln & Guba, 1985). When the participants' descriptions are comprehensive, thus considered thick and rich, and can be applied in other settings, they are considered to be applicable. Applicability was met by dictating field notes about 10-15 minutes after each interview to allow for accurate recall of events related to environmental factors, mood and affect of the participant and the researcher, and all potential judgments and events surrounding the moment of interview. Demographic data along with medication histories were also gathered.
3. *Dependability* is the ability to establish stability of findings; to meet this criterion, an audit or paper trail was established to monitor each step of the study process. Credibility establishes dependability.
4. *Confirmability* is validation that applicability, dependability, and credibility have been established. The major technique for establishing confirmability is the audit trail as noted above. Confirmability was achieved by verifying that interpretations were supported by the data via reflective journaling to reveal underlying assumptions, verbatim transcriptions, data reduction, and field notes.

LIMITATIONS AND STRENGTHS

The interview in phenomenology is a dialogue between the participant and the interviewer, the researcher. The participant delves into his or her consciousness to describe the experience, and the interviewer becomes present to the participant in an effort to understand the description of the phenomenon. This form of interview depends on and can be limited by the interviewer's ability to suspend judgment and bracket the truth of the experience. The rigor maintained throughout the process, however, demonstrates the strength of the methodology.

The findings in this study are limited to the characteristics of the sample. Conclusions cannot be generalized in the same manner as quantitative studies. The strengths of the study lie in the meanings that emerged from the large amount of rich and detailed data collected over a prolonged period (over 730 pages of text; 20 verbatim interviews initially with second and third follow-up interviews, for a total of 58 interviews, field notes and journaling). Further, the 20 participants from both rural and urban communities developed rapport and trust with the researcher and, in doing so, shared their authentic experiences of living polypharmacy. These 20 participants generated rich and detailed data, allowing for the emergence of themes and validating the structure of the phenomenon.

The goal of the study is to assess educational possibilities based on participants' personal experiences. Emergent themes can be incorporated into intervention strategies and healthcare provider education programs. Such programs would address policy makers, academics, and healthcare professionals regarding the dilemma of polypharmacy.

SUMMARY

A descriptive Husserlian phenomenological method is the best approach to address the aims of this study. These specific aims are to explore the essence of the experience of polypharmacy, to expand the body of knowledge related to polypharmacy, and to improve health care in the life-world of the elderly community. This qualitative design is applicable to healthcare practice, as it represents an approach that advocates for a clear description of the structure of an existing phenomenon- polypharmacy, as it is lived everyday. The philosophy, methodology, and rigor were also presented in this chapter. Chapter Four presents the essence and meaning of living polypharmacy, along with supportive interview text.

Chapter Four: Findings

INTRODUCTION

In keeping with the aims of this study, which are to explore the essence of the experience of polypharmacy, to expand the body of knowledge, and to address the Healthy 2010 initiative, the findings of this Husserlian descriptive phenomenological study are presented in this chapter. Thematic findings, extrapolated by tapping into the participants' descriptions of the essence of the experience of living polypharmacy, are reported in the following procedural stages as delineated by Colaizzi (1978).

A description of the sample precedes the demographic data and medication history, followed by Colaizzi's seven stages of analysis. The stages of analysis begin with a brief description of the participant followed by significant extracted statements (PSS) that lead to formulated meanings (FM). Cluster of themes (CT) were developed, providing an exhaustive description of the phenomenon and the fundamental structure of living polypharmacy. In alignment with the philosophical tenets of descriptive phenomenology, it is recognized that the researcher cannot separate her assumptions from the participant's experiences; indeed, both shape the interview. As noted in Chapter Three, the rigor of this design includes maintaining a journal to explicate the reflections, biases, and values of the researcher as she attempts to bracket and focus on the phenomenon itself. Therefore, brief excerpts from the researcher's journal, designated as "Journal Excerpts" (JEs), will be included in the analysis. These JEs will allow the reader to assess credibility and dependability criteria. The rigor used is explained throughout the analysis, and a summary concludes the chapter.

SAMPLE

Twenty (20) culturally diverse senior adults from both urban and rural backgrounds participated in this study. All the participants met the inclusionary criteria: all were 65 years old and older, spoke English (two spoke both English and Spanish), were cognitively intact, and consumed at least four prescribed medications daily for at least 30 days prior to the study. There was an even distribution between male and female participants, with 85% being over the age of 70 years. The age range of the participants was 65 to 88 years of age. All of the participants were from Southwest Texas (Table 1).

Table 1: Demographic Data

Gender	Age	Marital Status	Ethnicity	Cohabitation	Education	Annual Income	Insurance	Rural Urban
F	88	Married	C	Husband	G.S.	42,000-57,000	M/P	R
F	71	Married	H	Husband	H.S.	42,000-57,000	M	R
F	81	Married	C	Husband	H.S.	>57,000	M/P	U
F	78	Married	C	Husband	H.S.	>57,000	M/P	U
F	65	Married	C	Husband	H.S.	>57,000	M/P	U
F	80	Married	C	Husband	H.S.	>57,000	G	U
F	86	Widow	C	Alone	G.S.	>57,000	M/P	R
F	86	Widow	C	Alone	H.S.	42,000-57,000	M/P	R
F	81	Married	C	Husband	H.S.	42,000-57,000	M/G	R
F	72	Married	C	Husband	College	>57,000	M/P	R
F	71	Married	C	Husband	College	42,000-57,000	M	R
M	80	Married	C	Wife	H.S.	>57,000	G	U
M	78	Married	C	Wife	H.S.	>57,000	G	U
M	80	Married	C	Wife	College	>57,000	M/G.	U
M	75	Married	C	Wife	College	>57,000	M/P	U
M	80	Widow	C	Alone	College	>57,000	P	R
M	70	Married	C	Wife	College	>57,000	M/P	R
M	86	Married	C	Wife	College	>57,000	G	R
M	75	Married	C	Wife	College	>57,000	M/P	U
M	67	Married	C	Wife	College	>57,000	M/P	R

Legend:

C - Caucasian
H - Hispanic

G.S. - Grade School
H.S. - High School

G - Government
M - Medicare

R - Rural
U - Urban

MEDICATION HISTORY

The primary four medications for all the participants included medications in the following categories: antihypertensive (95%), antilipiemics (90%), antiplatelets (70%), and gastric acid suppressants (90%). Furthermore, 50% of the female participants' consumed hypothyroid medication and 70% took antiosteoporotics, while 66% of the males were taking medication prescribed for benign prostatic hyperplasia (BPH). Three of the female participants and one male took an antidepressant. Ninety-five percent of the participants described taking medications for longer than eight years, sixty percent expressed living polypharmacy for over 20 years, and two participants over 81 years of age, cited a history of multiple medication consumption spanning approximately 50 years or longer. The range of prescribed medication taken daily was 4 to 20 pills (Table 2).

Table 2: Medication History

Gender	Age	Number of Prescribed Medication/Day	Number of Prescribers	Monthly Out of Pocket Expense
F	88	7	2	\$100.00
F	71	11	3	\$800.00
F	81	8	2	\$70.00
F	78	6	2	\$100.00
F	65	7	3	\$200.00
F	80	4	2	\$90.00
F	86	20	2	\$300.00
F	86	13	2	\$200.00
F	81	4	2	\$35.00
F	72	5	2	\$200.00
F	71	11	5	\$600.00
M	80	4	3	\$50.00
M	78	10	2	\$100.00
M	80	8	4	\$200.00
M	75	6	6	\$75.00
M	80	18	3	\$60.00
M	70	9	2	\$200.00
M	86	4	1	\$35.00
M	75	5	3	\$100.00
M	67	4	2	\$200.00

PHENOMENOLOGICAL DATA ANALYSIS

The following section of this chapter will demonstrate the application of each stage of Colaizzi's (1978) analysis. Findings often overlap, as interpretation is circular in phenomenology; however, the seven stages, guided by the research questions and actual questions posed to the participant, are presented sequentially to explicate the basic interpretive process. The research question is followed by examples of relevant verbatim text and significant statements that were extracted. The following is a summary of the seven stages discussed in Chapter Three.

Stage One consists of gaining a sense of each participant's description of "living polypharmacy" by having the researcher (myself) immersed in the data, listening to each tape-recorded interview three, and in some cases four, times, and reading and re-reading each verbatim transcript text at least three times. Additionally, the researcher reviewed the reflective journal with recorded thoughts, feelings, emotions, and concerns about the interview. Stage Two consists of extracting significant statements from each the participant's original description that pertain to the experience of taking multiple medications. In Stage Three, or the formulation of meanings, the researcher exercised great caution in staying with the descriptive text. The researcher returned to the original transcripts, the statements associated with each formulated meaning, and the research team attempted to determine if participant experiences were addressed during the interpretive process without bias. Organizing formulated meanings into cluster of themes in Stage Four was accomplished by reviewing the significant statements from the original interviews and remaining faithful to the text. All the interpretations generated in Stage One through Stage Four were synthesized and integrated into an exhaustive description of the phenomenon in Stage Five. In Stage Six, the exhaustive description was reduced to its essential structure, and the fundamental structure of the essence of the experience of polypharmacy was developed. Stage Seven included returning the fundamental structure to each participant for validation and assessing any new, relevant data. All the participants responded, made comments, edited some of the descriptions, and agreed that the narrative represented their experiences. Comments from the final interview presented in Stage Seven reflect the participant's responses.

Format of the Seven Stages

A sketch of how the findings are reported in table form follows:

Stage One. During Stage One, I recorded thoughts, feelings, emotions, and concerns about the transcript in my reflective journal, and remained aware of any preconceived ideas and prejudices related to living polypharmacy. I returned to my research team at each level of the methodological process to inquire about my own assumptions and to enable me to audit and focus the direction of my thinking.

Stage Two, Stage Three, and Stage Four. Each table is labeled with a thematic cluster (**TC**) followed by a sample of participants' significant statements (**PSS**) and formulated meanings (**FM**). The **FM** is depicted in italics. To ensure confidentiality, each participant is assigned a pseudonym followed by his or her occupation and a brief medical and medication history to remind the reader of the individual's context or life-world. Thereafter, each succeeding **PSS** will be preceded by only the pseudonym. Thus, Barry in Table 3A, **TC One**, would be the same participant as Barry in Table 3E. Some of the participants have not yet retired; some are semi-retired and remain active in activities such as guiding tours and investing. Sporadically an excerpt from the researcher's journal (**JE**) will be included in bold to clarify or demonstrate the process of bracketing.

One hundred and two significant statements (**PSS**) from Research Question 1 were reduced to 23 formulated meanings describing living polypharmacy. Eventually, they were clustered into five themes in Stage Four (Tables 3A to 3E). Research Questions 2 and 3 had five formulated meanings, each with one thematic cluster per question (Tables 4 and 5). Recommendations from participants describing what healthcare providers should know about living polypharmacy are reported in Tables 6A to 6E, and noted as "providing care." In Table 6A to Table 6B, each **TC** is followed by several **PSS** with a corresponding **FM**. The reason for this format is that several participants voiced *wanting to be heard or feel valued*; thus each **TC** is supported by several **PSS** with a common **FM**.

Stage Five. Following the tables, all formulated meanings culminate in an exhaustive description of the essences of the experience of polypharmacy in the life-world of the community dwelling elders. This exhaustive description is presented in Stage Five.

Stage Six. The exhaustive description in Stage Five is reduced to its essential structure. The essential structure was returned to the participants for review (member checks).

Stage Seven. Stage Seven represents the final interview, with each participant's comments related to the exhaustive description and essential structure of the phenomenon. The participants were asked if they agreed with the interpretation, and if the description was comparable to their experiences taking multiple medications. Further, they were given an opportunity to add any relevant new data.

In accord with the rigor maintained through this interpretive process, a paper trail was maintained through reflective journaling, field notes, verbatim transcripts, and notes from the team meetings. Additionally, the researcher continuously returned to the data and to the research team to explore biases, inconsistencies, and meanings.

Since the analysis is guided by the research questions, a research question followed by the question to the participant precedes the extrapolated theme(s). Thus, the first question is followed by five themes. Following are the stages depicted in table form.

Stages Two, Three, and Four (Tables with TC, PSS, FM, and JE)

Research Question 1: What are the common essences in experiencing polypharmacy in the life-world of the community-dwelling elder?

Question to the participant: What is it like to take medication everyday?

[The researcher may add clarification in brackets within the verbatim text]

Table 3A: Living polypharmacy as trusting, collaborating, and co-creating one's medication regimen

TC: THEME ONE: Living Polypharmacy as trusting, collaborating, and co-creating one's medication regimen

Barry, an 80 year-old retired mechanical engineer, has a medication history that spans over 50 years. Barry's parents and five siblings were diagnosed with hypertension. He was diagnosed with hypertension in his early 30s. Barry reported taking 18 medications per day at the time of the first interview. He had kept a meticulous medication record that he took to his doctor on each visit. The record listed the name of the medication, dose/day, its action, and the length of time he had been taking it. For example, one entry read "hydrochlorothiazide 25mg, 1/day for hypertension, taken for 30 years." He also documented medications from which he had experienced an adverse effect, over-the-counter medications taken routinely, and a list of vitamins and dietary supplements.

PSS: For me, it is a matter of graphing and plotting the process. About 20 years ago, I noticed a discrepancy of 10-15 points in my B/P between my right and left arm. My family doctor, whom I trust, sent me to a cardiologist. After a period of experimenting, plotting, and graphing, we [he and his doctor] came down to these four medications and he has been my cardiologist since then. These medications keep my pressure like a "sound wave," abnormal-normal. The others keep my cholesterol down and my stomach regular.

FM: *The activity of plotting and graphing the information as new medication was added or deleted and sharing this with his doctor, whom he trusted, was understood as relevant to his experience of living polypharmacy. As I reflected upon this data and noted how important it was for this educated and independent gentleman to be a part of the solution, I developed this phrase as an essence of living polypharmacy, the need to co-create a medication regimen.*

JE: **I listened to Barry's narrative twice, thinking that he was just rambling and being too detailed. He was not talking about the burden of taking medications daily for all those years, and I was concerned that I had not captured information that was relevant to the study. On my second interview, he clarified that taking medications daily was not a burden for him. Once I bracketed my own preconceived notions, I was able to capture the true experience. For him, a burden would have been complications from hypertension, such as a stroke, as he had experienced with his family members. Having worked with his doctor to be like a "sound wave" and circumventing complications, by plotting and graphing, was information he proudly shared. He trusted his doctor. Thus, taking medications daily was not a burden; rather polypharmacy kept him from experiencing serious complications.**

[Table 3A, Cont.]

Belinda, an 86 year-old widow and a political activist lives alone in an affluent neighborhood in southwest Texas. She is currently taking 20 pills/day. She has been on medications for over 50 years. A few years ago, she had a myocardial infarction, was taken to the hospital by life-flight, and her doctor successfully resuscitated her. He saved her life.

PSS: No, my doctor is my friend and when he got married, I was invited. He saved my life. I'll do anything they want me to do. I'll take any pill he wants me to take and I don't care what it is made of so I can be just like I am now, healthy. I'm going to see him tomorrow so we can talk about my blood work and my Coumadin. He explains everything and if I'm not doing well with a drug we talk about another one. We have to change some of my cholesterol medications; something is causing discomfort to my legs and knees.

FM: *Belinda trusts that together, she and the doctor can collaborate and monitor her medications, the lab work, and keep her healthy. By describing her adverse effects, she is confident certain medications will be changed.*

Brooks is an 80-year-old WW II veteran, taking eight prescribed medications daily. He was diagnosed with Parkinson's "many years ago." Additionally he takes medication for hypertension, cancer of the bladder, potassium replacement, and an anticholinergic.

PSS: I'm military and sometimes it might be a different doctor but they all work together. There isn't much you can change about the medications for Parkinson's and pretty much the medications for cancer of the bladder are kind of routine. But every now and then I have to get with my doctor and we do what we can to take care of things. You learn to live with life; jerky movements, frequency, and things like that and you have to trust the professionals with what they know and keep your eyes open for anything new. Life in the military helped define who I am.

FM: Brooks' experience living polypharmacy is closely connected to his life in the military. Military living has revealed a life-world of being with others, trusting and working together as a team to make things happen. This life-world carries over as Brooks works alongside different doctors, managing his medication regimen and co-creating care to take care of things.

JE: **As I reflected on Brooks' history with medications and life in the military I got a sense of his living in the world with others, trusting and working together. On my second interview, he validated my assumptions: "that is how it happens in the real world, together you can do more."**

Brandi has a long history of multiple medication use, specifically with chronic pain. She is a 71 years old registered nurse (RN) who currently volunteers at a hospital just to stay in touch.

[Table 3A, Cont.]

PSS: He has been my doctor for many years; I worked for him but I don't abuse that relationship. We are professionals. He understands my situation too with cost and all. He ordered 5 mg of, I forget, but Medicare wouldn't pay for it. They would pay for 10 mg so he changed the prescription. I get 10 mg, Medicare pays for it, and I split it in half. He is good about working with me and as a nurse. I insist on it.

FM: *Brandi's world as an RN has been about collaborating and co-creating care plans. She has learned to negotiate her way around the health care system and now she uses that experience in her life-world of polypharmacy.*

Beverly is an 80-year-old female who worked as an educator while her husband served in the armed services. She had a transient ischemic attack while traveling through Colorado and took 4-6 aspirin daily until she could return to her doctor, whom she trusts.

PSS: Yes, definitely it's about knowing the latest. My doctor reads and he tells you. Like this Crestor he doesn't give me more than 10 milligrams because people that have had more than 10 milligrams have had problems with their liver. If I was to have problems with that, he would give me something else. He gives me the information that I need.

FM: *Getting the latest information from her doctor increases her confidence in his knowledge and enhances their collaborating efforts for safe medication management.*

While text from all twenty participants was analyzed, if the participants said the same thing or addressed essentially the same theme, it was not included in the table to avoid redundancy. However, all participants' data are used for the totality of the analysis. Thus, Table 3A demonstrates how these five participants described their experience related to living polypharmacy as collaborating, trusting, and co-creating their medication regimen. The participants spoke of the relevance of collaborating for safe medication management. Additionally, they described how living polypharmacy was closely connected to the way in which they lived other parts of their lives, such as their prior careers as engineers, registered nurses, and members of the military.

Table 3B: Living polypharmacy as feeling betrayed by the medication that was prescribed to help

TC: Living Polypharmacy as feeling betrayed by the medication that was prescribed to help

Benny, an articulate WWII veteran who verbalizes his experience with great emotion, is 80 years old. He reflects on his experience and life without medications and with medications for the last 20-30 years. He thinks it is important to exercise discipline. Benny's doctors know him and his record. His doctors recommended Bacillus Calmette-Guerin (BCG), as it has been demonstrated to be effective as an immunotherapeutic agent since the 1980s in the treatment of bladder cancer. BCG is an inactive form of the bacterium *Mycobacterium tuberculosis*.

PSS: You know what tuberculosis is like? Mind you, I didn't have it but I had all the symptoms. I was sleeping on rubber sheets, depressed, scared. The medications were worse than the tumor. They [physicians] said something went array. They just said chemo, for me that means to reduce, to burn, no one said it was BCG. I hate to say this; I was never informed of any reactions that might take place like that. No one said a thing. Maybe it's good that the doctor tells you that and maybe it's not. Some people might say well, oh, I could possibly get this reaction from that, and maybe say no, I don't want the chemo. I was willing to go along with his choices because he's a professional. You know had I known in advance that I was going to get as sick as I did. Believe me I don't know that I would have agreed to it. Let me go on, it might help others. I stopped taking it.

FM: *Benny felt betrayed, frightened, and confused by the reaction to the BCG. His perception of the concept chemo was to reduce, to burn, something tolerable, and that concept became a different reality. Now he describes his true experience with the medication as betraying his body and limiting his life-world [depressed, scared, lost 30 pounds].*

JE: **As I reviewed the data, I reflected on Benny's struggle as he portrayed his reaction with BCG with such emotion. He cried, bit his lower lip to gain control, and showed me how he shook as his bed needed to be changed. I asked him if he wanted to stop. He made it clear as he re-lived his experience that he wanted others to know. Nothing compared to this experience. He was severely ill for four months, depressed, and lost over 30 pounds.**

Benito is a 78 -year-old WWII machinist specialist with a history of hypertension and cardiac surgery (stents) taking 10 medications daily. His use of polypharmacy spans over 20 years with hospital admissions related to adverse events.

PSS: I was getting nosebleeds. I can just touch myself like that and I bruise. He cut me back on the aspirin for a couple of weeks, then back on. I still bleed. He put me on Xanax and something else for my anxiety. It helps but it kind of knocks you out. There's a difference in a good sound sleep and being knocked out. Your body relaxes a little bit but

[Table 3B, Cont.]

PSS (cont.): up here doesn't [pointing to head]. You are tired, have weird dreams and headaches. All those medications tore my stomach up and now I'm on something else for that.

FM: *Benito believes that the medications are betraying his body as he continues to experience bruising, nosebleeds, anxiety, stomach problems, and waking up tired with severe headaches.*

Barb, an 81-year-old retired librarian, is currently on four medications daily. She would like to be on none. A diagnosis with shingles increased her medication regimen as anti-depressants and something to help her sleep were added.

PSS: It made me feel like a zombie, I couldn't eat anything and I just felt like I was in another world in a sense. It wasn't me, you know. I didn't like how those medications made me feel. I just stopped taking them.

FM: *Barb shares her observations as not feeling like herself, feeling like a zombie. The medications took over, limited her familiar life-world and nothing was the same. She decided that these effects were not acceptable in her life world and made a decision to stop taking them [as did Benny].*

Brianna, an educated 72-year-old designer and homemaker, has been on medications for over 20 years. She had trouble regulating her medications, especially her antihypertensive and Synthroid, after her brother died.

PSS: My medications for B/P were changed and I had this cough. Even in church, you know, I had to take a cough drop or something to stop it. I thought something was wrong with me. The coughing interfered with my sleep medication. It was scary, as I would get up, I'm on Ambien, and make tea and not know anything about it until the next day. I looked it up on the Internet and called my doctor about the coughing and the medications.

FM: *Brianna shares that it is scary to think that you awake, make tea and are never conscious of doing so until hours later. She felt that her coughing was as much an intrusion on her as it was on others. The medication betrayed her and limited the world that had meaning for her, such as peaceful sleep, church, friends, and socialization.*

Benjamin is a 67-year-old financial planner taking four medications daily. He had a myocardial infarction about eight years ago that culminated with a stent. He was discharged from the hospital on several prescription drugs. He was hospitalized with medication complications twice.

PSS: I'm very busy, I'm still in charge. Well, in charge of my business. About eight years ago I had a heart attack, right in the middle of my busy season, went into the hospital, my doctor recommended a cardiologist and the next thing I know I was

[Table 3B, Cont.]

PSS (cont.): scheduled for a stent. After that it's one pill for high blood pressure, next is one to thin your blood and then it starts. You bleed, bruise, and your heart rate drops and you are told it's the nature of the medication? It's like a spread sheet, you put the numbers down and you make sure they are where they belong. You ask what you can live with; what can you change.

FM: *Benjamin's view of his structured world of being in charge and working with predictable figures is seen through the lens of someone who has been betrayed by the medications in ways he cannot predict or put on the spreadsheet and manipulate. He describes his experience, living polypharmacy, as a betrayal as he tries to manage the bleeding and the correct mixture of medications [as he asks, "what can I live with, what can I change"].*

Bonnie, an active 86 year-old retired secretary, is currently taking 13 medications per day. Sometimes she schedules her medications around her daily activity. If she is going on an outing for the day, she holds her diuretic. Bonnie has a history of sick sinus syndrome. She was hospitalized after experiencing a medication misadventure and admitted to the intensive care unit.

PSS: Sometimes it is scary; they gave me Persantine and Adenosine. My throat closed up. I thought I was, dying, dead [Bonnie was experiencing an adverse reaction].

FM: *Bonnie reflected on her frightful reaction to the medication misadventure and supported her description of this reality as she painted a picture of the betrayal as a possibility of her future closing down as her throat closed up and she thought she was dead.*

Table 3B represents six voices describing living polypharmacy as the medications prescribed to help an ailing body betrayed this intention thereby limiting the life-world of these community dwelling elders. The participants describe how this experience limited the future possibilities as they felt betrayed, scared, unlike themselves, zombies, and like they were dead.

Table 3C: Living polypharmacy as knowing one's body, knowing what medications work and what does not work

TC: THEME THREE: Living Polypharmacy as knowing one's body, knowing what medications work and what do not work

Bea, an 88 year-old keeper of her neighborhood, has lived in her home for over 50 years. She has taken prescribed medication for over 20 years, is currently taking seven drugs per day, and had some difficulty with medication management after diagnoses of hypertension and diabetes.

PSS: I kept telling him that I felt goofy, dizzy, and unstable. I couldn't even drive or go to church. The medications weren't acting right.

FM: *Bea is listening to her body and, as an expert, knows that the medications are making her feel a certain way. As she listens to her body she describes her reality, the truth that dwells within, as feeling goofy and unstable.*

Blanca, a 71-year-old homemaker, has a long history of multiple medication usage and seems to know what works well. She consumes 11 medications per day for depression, sleep disorder, hypertension, hypothyroidism, and hyperlipidemia.

PSS: Generics don't work for me. I get more depressed, goofier, crying, not caring what happens to me. I told them I was depressed, didn't care about getting out of the bed, didn't really know what was happening around me. When I take the brand names, like I'm taking them now, I don't have no problems. I am just regular; I am myself, no problem at all. I know myself and I know what is going on around me.

FM: *As Blanca described her experience with generics she went on to explain why it was important to her for others to listen; she knows her body and she knows what works. These supporting explanations, feeling goofier and depressed vs. feeling regular and like self, are references to the content of her experience with generics in her life-world.*

BJ, a 70-year-old retired veteran, coach and bronco-rider, is an insulin dependent diabetic taking nine medications daily. He is currently struggling with the possibility of a toe, foot, or below the knee (BK) amputation.

PSS: Well, like this foot doctor, he gave me prescriptions for three weeks. I don't see him [the doctor] for three weeks and I can't see my foot, it has a bandage, and the medications make me sick. I didn't like it, I didn't like what I felt, it hurt, and I couldn't see it [the foot]. After three weeks, I went to the therapist so she put my foot in a sonic bath and she looked at it and she said that looks infected.

FM: *BJ explained what it was like to hear what might be going on under the bandage even as he took his medications. He described what his body told him; it hurt, it did not feel good, and he did not like not knowing. Now he is told he has an infection.*

Table 3C, Cont.]

Benjamin

PSS: I was so tired all the time. I was having to take naps and I don't take naps, that was new. I was just dragging in the afternoon and that was after a mid-day nap at the office. I could tell something was different after he added that second medication for my B/P. After they changed them, I was back to normal. My heart rate was too low.

FM: *Benjamin describes the fatigue that results from taking new added medications – naps, feeling tired, and dragging in the afternoon; his entire life-world is affected in a negative way.*

Table 3C reveals how those living polypharmacy must listen to their bodies to discern the normal from the abnormal. They often struggle with new medications in between doctor visits. The participants' descriptions of feeling goofy, dizzy, hurting napping attest to what was happening within themselves and in their worlds with their medications.

Table 3D: Living polypharmacy as remembering to remember and creating remembering systems.

TC: THEME FOUR: Living Polypharmacy as remembering to remember and creating remembering systems

Boyd, 75 years of age, is a retired pilot and teacher and is currently taking seven medications daily. He has been on medications for over 15 years. Boyd retired as a pilot after a diagnosis of glaucoma. He has had several facial surgeries for skin cancer, and is currently taking medications for cardiac arrhythmia (bradycardia), ulcers, and cancer of the bladder.

PSS: It's [living polypharmacy] about having to remember daily so I have a system of mere precision. In other words, I might put them here [Boyd points to the kitchen cabinet] before I take them. As I take them, I put them over here [Boyd points to another cabinet above the sink]. That is an issue because you know, despite any system, there does come a time when you can't be sure. All systems fail. It's a nuisance to have to remind yourself to remember.

FM: *Boyd recognizes the importance of having to take the medications, thus having to remember so he has a "system of mere precision."*

Bonicha is a 65-year-old female who is currently taking seven medications daily for angina, hypertension, hyperlipidemia, osteoporosis, shingles, hypothyroidism, and a recent urinary tract infection. She manages a restaurant and visits her mother in the nursing home daily.

PSS: For me, it's an effort to remember. I keep them in my little pill cup and that way I know when I take it for supper or after supper. Just my, well, I keep the weekly pillboxes too. I have what I take for this day and so on in the cup and what I take tomorrow in the pillbox. I refill it on Tuesday. 'Cause that's when I run out'. Sometimes everyone has trouble remembering at a certain age, but you have to remember.

FM: *Bonicha explains a system to remember to take the medication for the day by taking them out of the pillbox and placing them in a pill cup. The weekly medications are placed in the pillbox. On Tuesday the pillbox is filled for the week and the pills for that day are placed in a pill cup. She repeats the process on Tuesday as she notes the empty containers on that date. She compares with others (Bonicha mentions that everyone has trouble remembering, sometimes), yet describes her experience as an effort, you have to remember.*

Brittney is a 78-year-old taking six medications daily. She is a homemaker and was a grade school teacher many years ago. She takes medication for atrial fibrillation, depression, gastroesophageal reflux disease (GEERD), hypothyroidism, and osteoporosis. She takes the synthroid at night as she gets up to use the bathroom.

[Table 3D, Cont.]

PSS: It's hard to remember. I have them set-up for morning and evening and I forget the morning ones as often as not. I double up in the evening, if I forget. This one I don't forget, I take it in the middle of the night when I go to the bathroom. I refill the container on Sunday evening so it can be ready at the beginning of a week for me. No, I don't want once a month, I have trouble remembering weekly, once a month would be difficult.

FM: *While Brittney forgets to take her medications at times, she has a system that works. She thinks that daily medications are somehow easier to trigger the memory vs. once a month dosages of medication.*

Benny

PSS: I have to constantly remind myself you know to be sure that I do [take my medicine]. But then again, I think, compared to others, I'm doing ok for my age, my mind is ok too. I train my brain to say take your medication in the morning and I take some of it in the morning and take some in the evening before I go to bed so that's it. You have discipline yourself to be sure that you take them.

FM: *Benny appraises the extent of his memory as he compares himself with others; compared to others my mind is ok. He explains that remembering is a matter of training your brain and self-discipline.*

Belinda

PSS: Every Thursday I'm reminded to fill my pill box every Thursday morning. No, I don't get up out of bed and come back, if I forget to take it. I just take it the next day. Except for Coumadin, that's the important one out of the 20 that I have to have. That one is my life, the others you can take later.

TM: *Belinda has a routine to remember. However if she forgets to remember, there is one medication out of 20 that she will remember to get up for. She describes that remembering to take that one has meaning in her life-world, the one that 'is my life.'*

In Table 3D, five participants describe the challenge of having to trigger the mind to remember and the importance of remembering. Living polypharmacy as remembering to remember is described as an effort that requires creative systems such as placing the medications in one place prior to taking it and at a different place after taking it for the day. The participants also compare their ability to remember to others. This comparison is important, as they describe their triggering systems in their life-world of taking multiple medications. If the drug is especially meaningful, they will remember to remember; they will make the effort to remember medication that is their "life."

Table 3E: Living polypharmacy as sensing a lack of concern, as not being heard, not being seen, not being known.

TC: THEME FIVE: Living Polypharmacy as sensing a lack of concern, not being heard, not being seen, not being known

Bettye is an 81 year-old female with multiple cardiac problems. She recently moved, changed doctors, is looking for a female cardiologist, and is taking eight medications daily. Bettye was a bookkeeper for a small firm as the children were younger, a homemaker, and most recently a bookkeeper/secretary and registrar for the national RVC club.

PSS: And I loved her [former physician] dearly; she and I got along famously and I felt like she listened to me and she talked to me. When we moved and I got a new cardiologist, I like him fine except that I don't really think he even hears me when I talk to him. He's writing constantly and then he says well we're going to try you on this drug and he gives me a new prescription. If he says why aren't you taking this one that I gave you, and I say because it did this and this to me. He doesn't listen, he just says, well take this one [Bettye makes a gesture as though to slap something in my hand without looking at me].

FM: *Bettye senses that the doctor is not engaged in her life-world; he just writes, does not look at her, and does not respond to her description of a possible adverse event with previous prescription drugs. Betty misses her former physician, who heard her, saw her, knew her.*

Benito

PSS: Yes, I told him [physician] I was still bleeding. He said absolutely not; I will not take you off any medications. That's the nature of the medication; you have to learn to live with it. They say you can get it [medication information] from the computer that [the notion of getting the medication information from the computer] is not the personal. I like them to sit down, look at me, and talk to me, the personal.

FM: *Benito speaks of the frustration of having to continue his medication even though it is causing him to bleed. He describes the feeling of being disconnected; not feeling cared for in a personal way, not being engaged with his physician.*

Blanca

PSS: She [the physician] just writes a prescription and says, here, I'll see you in three months. [Blanca extends her arm, gesturing that she is giving me something, as she lowers her voice and her eyes]. She never looks at me. She doesn't know me. I want them [the doctor, the staff in the office] to ask, how are you, to know who I am. The other doctor [her previous doctor] use to know what was going on with my family.

FM: *For Blanca, acknowledgement of her existence by her physician, the concern for her life-world such as knowing "what is going on with her family" is meaningful. Blanca*

[Table 3E, Cont.]

FM (cont.): *describes her doctor's visit, noting that she is not seen or known by her. She is merely the receiver of a prescription.*

Bea

PSS: I kept telling him [physician] that it wasn't working. He said, "you have to take it, you're a diabetic." I was going to look for another doctor. There are too busy sometimes.

FM: *Bea tells the physician of her concerns but senses that she is not heard by doctors that are "too busy."*

Bonicha

PSS: I don't want to hear [Bonicha does not want to hear the doctors say] let's try you on this drug. I'm not a guinea pig. I want to talk about why we [Bonicha and the doctor, she wants to know why he is trying this drug on her] are doing what we are doing.

FM: *Bonicha describes her experience with comments that she senses as being dehumanizing as she explains that she is not an object, "a guinea pig." She wants to be in a dialogue with her physician, co-creating a plan of care. She wants to be a part of the "we."*

Boyd

PSS: I don't think that anybody cares. I have talked to my ophthalmologist and the drug companies. As an ex-pilot, I can't imagine me not listening to the consumer. So taking medications is about not listening. You know they want to do deep research on molecules and stuff like that. But no matter what you do, the end thing is, can the patient administer it reliably and safely? They don't seem to care.

FM: *Boyd approaches the notion of caring from his experience as a pilot. He has talked to the companies that market eye drops to tell them his experience with the eye drops. He has suggested possibilities in answering his needs, yet no one listens, no one seems to care. He perceives drug company research as involved in only the basic chemical substances of medications. These companies neglect to see the human being who must take these drugs. Boyd describes his frustration of not being heard no matter what you do.*

Table 3E describes six participants' experiences with living polypharmacy as sensing a lack of concern such as not being heard and feeling invisible – as unseen. These statements describe various degrees of experiencing dehumanizing healthcare practices. Participants describe the need to be heard, seen, and known personally. They expect to be respected and recognized as individuals with unique pasts and experiences. They do not

want to feel like a “guinea pig,” or someone just receiving a prescription. One participant even offered a solution to the problem only to sense that no one cared; he felt rebuffed and devalued.

Research Question 2: What impact does taking multiple medications have on quality of life in the life-world of the older adult?

Question to the participant: Help me understand what a typical day is like for you and your quality of life, as you know it. What is that like?

Table 4: Living polypharmacy as perceiving having an impact on one’s quality of life.

TC: THEME ONE: Living Polypharmacy as perceiving having an impact on one’s quality of life

Major B (Bert) is an 86-year-old retired WWII Major. He was consuming four medications per day. He stated that he went to the doctor only if he had to. He was currently on medication for atrial arrhythmia and thrombi (anticoagulant), peptic ulcers, hyperlipidemia, and hypertension.

PSS: My quality of life is great. Medication helps but that is not all there is to it. I have a good wife, a good family, and a good life. See, I’m retired Army Major, so I’m on military retirement. I spent twenty-two years in the army and I have been in the hospital once, in France, after a bullet wound to the face and larynx. I enjoy life. I have a good life and you know it is just a joy. Sometimes you have to work on it.

FM: *One of the Major’s descriptors for quality of life involved being with a good family. The medication was only one aspect of his great quality of life. More important was who he was in the world; he credits his quality of life to good wife, good family, and successful army career.*

Ben, a 75-year-old retired pharmacist taking five medications daily, states he tries to take care of his body with diet, exercise and some alternative medication for joint and muscle stiffness. Ben has two stents and is currently taking medication for hypertension, hyperlipidemia, GEERD, and an antiplatelet agent.

[Table 4, Cont.]

PSS: I'm active, play golf, my shoulders hurts sometime, but I just go on with my normal life. Sure, the medications help keep the pressure down and the other helps with a nervous condition that I have, but quality is your attitude helping the medications. You have to be up and stay active.

FM: *Ben believes his quality of life is enhanced with medication but he credits his positive attitude and remaining active, even with some pain, as the more significant reasons for good quality.*

Bettye

PSS: It is like anything else; when you get to be our age, you realize your body is not going to let you do all the things that you use to or else you're a fool. You slow down and it is not fun. You can either hate your life or you can learn to be flexible with it. I love my computer; I do a lot of stuff with that; I have been very, very active with this, and it was hard to give up being secretary because it kept me so busy. It is more about being flexible and doing things, staying busy.

FM: *Bettye's perception of her experience with living polypharmacy and the impact on quality of life is about restructuring one's life world as one ages, starts slowing down, and being flexible. She relates that she misses her job as a secretary, a very busy life. She speaks of her body, an aging body that prevents valued activities of the past. Another choice would be just to hate this slowed life. Bettye chooses to continue to stay busy with her computer. She never mentions the role of medication in her quality of life.*

Boyd

PSS: I don't think any medication that I'm taking affects my quality of life whatever. It is a matter of simply being inconvenient, it is a nuisance to have to remember. Twenty-five years ago, I started taking alphagan eye drops. When the ophthalmologist later said they were not effective enough he added three other drugs to the alphagan. I was a pilot, it is a nuisance to have to remember but it does not add to my quality of life.

FM: *Added medications do not add to the quality of life; it is more of an inconvenience. Just another medication to remember.*

Brooks

PSS: Quality is what is inside, who you are, your values. With Parkinson's, the medication does not work all the time and there are some serious side effects. You do what you need to do and enjoy what you can and you go on.

FM: *Brooks describes quality of life as determined by what is inside, one's values, beliefs, and inner strength—who you are. It is the inner person, not the medication, medication that may or may not work, that makes the difference.*

Table 4 depicts five participants' description of their quality of life. Their perceptions reveal that medications might or might not have an impact on one's quality of life. Perceiving quality of life is linked to attitude, values, inner strength and being active, being content with life, family, and self. It is about restructuring, being flexible, and going on with life.

Question 3. What impact does Medicare Part D (New Drug Plan) have on "living polypharmacy"?

Participant Question: Tell me about the new drug plan; what has been most helpful and what has been least helpful?

Table 5: Living polypharmacy as having an impact on the new drug plan. (The impact of Medicare Part D on obtaining medications.)

TC: THEME ONE: Living Polypharmacy as having an impact on obtaining medication with the new drug plan.

Major B

PSS: For me it has no impact, I'm a retired Army Major. I served my country for over twenty years and my plan is better than any drug plan. I just have my prescriptions called-in and my wife and I go the San Antonio and pick them up.

FM: *Major B perceives no impact on obtaining his medication other than the occasional trip to San Antonio to pick up his prescriptions. He has a military plan.*

Beverly

PSS: I'm very lucky, my daughter works for a cardiologist and I get all free samples. I get the rest at the military base or at Sam's and some from Canada. We travel a lot in our RV. I looked at the plan and it is too complicated.

FM: *Beverly has successfully negotiated a way to obtain her medications. The plan is complicated for her and she has found several options and choices including free samples and the base*

Brandi

PSS: For me it's a good [drug] plan but I still have a large expense. I stopped taking some of my medications because it was too expensive and it would put me in the doughnut hole. You have to be willing to take generics and to know what the cut off is for the doughnut hole. [The "doughnut hole" refers to a coverage gap in the Plan D

[Table 5, Cont.]

PSS (cont.): program. The beneficiary who reaches the initial coverage limit falls into the doughnut hole and becomes responsible for the total cost of all medications. The standard initial coverage limit for the year 2007 is \$2,400. This amount is reached by taking into consideration the full cost of the all drugs. For example, if a drug costs \$150 and the beneficiary's co-payment is \$40, the full \$150 counts toward the initial coverage limit. The doughnut hole starts after the beneficiary has reached this limit. However, that individual will continue to pay the monthly premium for the next \$3,216 of the drug costs out-of-pocket.]

FM: *The drug plan is useful for Brandi. However, she feels that you have to make concessions, take generics and stop taking some medications to meet the criteria. Brandi still has a large medication expense and had to make the decision to stop certain medications to avoid reaching the initial coverage limit.*

Belinda

PSS: It [the drug plan] does not work for me. I have to have the real McCoy. My doctor wants me to have the real thing and I will pay for it. You pay for what ever it takes to keep healthy.

FM: *Belinda cannot use the plan because her doctor does not want her on generic forms of the medication. She trusts her physician's preference for brand names and will pay out of pocket for the "real thing" to stay healthy.*

Blanca

PSS: I paid for it but I can't use generics. I fell into that doughnut hole. I can't use it but I'm still paying for it.

FM: *Blanca has the plan, paid for it, and is paying for the premium; however she cannot use generic forms of medication, has a large medication bill to pay monthly, and consequently has fallen into the doughnut hole. She is responsible for her medication cost out-of-pocket.*

Table 5 describes the impact of Plan D on five participants. The participants describe the plan as being helpful with some qualifiers, such as being able to change to generics and knowing how much is allowed prior to falling into the doughnut hole (being responsible for medication costs out of pocket). The participants who are unable to switch to generics have difficulty with the plan and some perceive it as being too complicated. Less than 3% of the participants in this study are enrolled in the Medicare Plan D program.

Research Question 4: What do community-dwelling elderly want healthcare professionals to know about polypharmacy in their life-world?

Participant Question: With your experience with medication, if you had an opportunity to teach healthcare professionals anything, what would that be, in your own words?

Table 6A: Providing care as listening and valuing the person

THEME ONE: Providing Care as Listening and Valuing the Person

Bea

PSS: I want them to listen if I say it is not working, don't laugh.

Blanca

PSS: I want them to look at me when they talk. I want them to know who I am. I want them to do more than say take this and come back in 3 months.

Benjamin

PSS: Take care of the client, talk to me, let me make some decisions about myself

Benito

PSS: Listen to my concerns. Hear my fear about bleeding. Do not just close me off with an explanation that that is the nature of the medication. Do not just tell me to go to the internet to get information. I need to seat and talk. I need the personal touch.

Bettye

PSS: Understand that my time is valuable too and don't insult me by ignoring me.

FM: *The participants describe the need to be valued. They want their voices heard.*

Table 6A reveals how elders wish to be treated, valued, and respected when they meet with healthcare providers.

Table 6B: Providing care as collaborating and co-creating a health plan

THEME TWO: Providing Care as Collaborating and Co-creating a Health Plan

BJ

PSS: I want to know what is going on; I want to be a part of the team, if not the coach at least a player and call some of the plays.

Brandi

PSS: I know the value of being the captain of the team. I insist upon it.

Barry

PSS: It is up to the patient to request that all the doctors communicate with each other so each will know what the other is doing. It's very important.

FM: *The participants want to be a part of the team, co-create their medication regimen.*

In Table 6B, the participants describe their need to be a part of the team in collaborating and co-creating a medication management plan with all providers involved in their care.

Table 6C: Providing care as communicating and giving clear understandable information to all persons

THEME THREE: Providing Care as Communication and Giving Clear Understandable Information to Persons [healthcare recipients]

Benny

PSS: You need to tell us what we need to know and you need to hear what we have to say. Communication is listening, hearing, caring.

Major B

PSS: The main thing is to stay with the doctor and always let them know how everything is working, talk to all your doctors. Communication is very important, that is the key: communicate.

Beverly

PSS: Be up to date on the medications and explain what it is, when to take, how to take, what it is suppose to do and what it is not suppose to do. Trust that we will not develop symptoms because they have been suggested.

Brianna

PSS: They [the providers] need to trust us with the information about the medications. They do not need to think that if they tell us about side effects we are going to have the side effects.

[Table 6C, cont.]

Brittney

PSS: I guess encouraging maybe to call back, if they have any new symptoms that come up. You know, be more open to, have someone there and you know, answer your question.

Barb

PSS: Be very clear with instructions, say I'm going to put you on these other ones and throw away what you have. Be clear with the time of day to take the medication, once a day after lunch, three times a day after each meal.

FM: *Clear communication, two-way communication, is important for the participant. Elders want to be given clear and complete information about their medications; they want to be trusted to handle this information as intelligent partners in their care.*

Table 6C represents the participants' description of the need to provide clear communication about all medications. It is not enough for the provider to say the medication is to be taken once a day; the participant wants to be very clear about the timing such as with a meal or early in the morning without a meal. The participants' also want to know the expectations, positive and negative, of the medications and want to be encouraged to communicate all drug misadventures.

Table 6D: Providing care as offering options (alternative care choices)

THEME FOUR: Providing Care as Offering Options (alternative care choices)

Brianna

PSS: They [the providers] need to know what options are available. They shouldn't just give you a pill for every thing and not everyone needs to be on the same medications. We are all different and react differently. I am going to a sleep clinic now and will be off the Ambien soon. No one offered me a sleep clinic when I was having trouble sleeping. My friend told me about.

Benny

PSS: And there are certain doctors out there that have found other ways to help people control their blood pressure and their cholesterol without taking some serious medication, share that information.

FM: *Participants describe the need to be given other options and care choices based on their unique situation rather than a one size fits all pill; alternative solutions might include other ways to maintain blood pressure without medications.*

Table 6D focuses on the need to offer other options rather than just drugs. The participants state that they know of other options and the information needs to be shared. They imply that there might be other approaches to providing healthcare besides medications.

Table 6E: Providing care as recognizing economic limitations and negotiating cost

THEME FOUR: Providing Care as Recognizing Economic Limitations and Negotiating Cost

Bonnie

PSS: They [the providers] need to consider cost and if it's a new drug just order 7-10 pills until they know for sure that the drug is going to do what it is suppose to do.

FM: *Providers need to consider cost of medications and the need to negotiate for a supply of 1-2 weeks on new prescriptions as the individual might have an adverse effect. Insurance companies supply medications for one month and, in the case of a new medication, the individual might have an adverse effect after the first or second dose and is left with 25-26 pills in the medication cabinet, not to mention the cost.*

Table 6E examines the way in which participants wish that providers understood their needs in terms of economic logistics. The participants feel limited by the economics restrictions of their prescriptions.

In summary, Tables 6A to 6E demonstrate 17 statements listing five areas that participants want healthcare providers to focus on when providing care to the community dwelling elder. The participants describe the need to be valued: their voices need to be heard. It is important for the participant to make decisions and be a part of managing their medications, co-creating a care plan. They demonstrate an interest in options and request clear communication and cost containment measures. Healthcare providers need to hear and understand that elders are seeking greater participation in the decisions about their health such as managing medications, being offered options, and considering cost.

Stage Five--Exhaustive Narrative Description of Living Polypharmacy

Stage Five incorporates all data in an exhaustive narrative describing the essences of the experience of polypharmacy in the life-world of the community dwelling elder. The exhaustive description of the phenomenon and the corresponding theme clusters follow. The exhaustive description includes all research questions.

Responses to Research Question One—the meaning of living polypharmacy—are summarized by five Theme Clusters.

Theme Cluster One – Living Polypharmacy as trusting, collaborating , and co-creating one’s medication regimen – The meaning of living polypharmacy for the community dwelling elder involves the need to have confidence in the doctor and to co-create a safe medication regimen just as one lives other activities in life. It means greater individual participation in managing ones healthcare needs with multiple medication.

Theme Cluster Two – Living Polypharmacy as feeling betrayed by the medication that was prescribed to help – Living polypharmacy means that sometimes the medication that is intended to alleviate the symptoms betray the body and limits the individual’s life-world. It means that reactions to medications can be frightening to the individual elder as he or she experience unfamiliar events and the possibility of death.

Theme Cluster Three – Living Polypharmacy as knowing one’s body and knowing what medications work and what do not work – The meaning of living polypharmacy includes listening to one’s own body, explaining what one hears, and expecting a healthcare provider to listen to the individual with the experience. Essential to living polypharmacy is listening to the elder’s voice as the body’s response to the medication, such as feeling goofy, dizzy, and hurting and fatigued, is described. It means that the elders’ explanations of feeling “goofy or like a zombie” references the context and life-world of that individual. Underlying “living polypharmacy” is the essential premise that the elder is the expert and can accurately describe responses to multiple medications.

Theme Cluster Four – Living Polypharmacy as remembering to remember and creating remembering systems – Living polypharmacy involves understanding that remembering to be compliant, to take all the medications accurately, is a daily challenge

that requires creative planning. It means having to create unique strategies that trigger one's memory several times a day, everyday, requiring high levels of intentionality.

Theme Cluster Five – Living Polypharmacy as sensing a lack of concern, not being heard, not being seen, not being known – The meaning of living polypharmacy includes the need for humanizing values that encompass being heard and being seen by healthcare professionals. It means more than just a person receiving a prescription or feeling like a guinea pig or feeling rebuffed. It means being cared about by a healthcare practitioner who hears, sees, and knows the participant and responds to concerns in a respectful manner.

Responses to Research Question Two—impact of multiple medications on quality of life—are described in one Theme Cluster.

Theme Cluster One – Living Polypharmacy as perceived as having an impact on one's quality of life – The meaning of polypharmacy as having an impact on one's quality of life involves inner strength and personal beliefs. Participants describe how, in some cases, the medication helps to keep the body running smoothly; however, one's life-world and how one is in the world with others has more of an impact than the challenge of taking multiple medications everyday. Indicators of quality of life described by those living polypharmacy include being active, restructuring one's life-world, being flexible, being content with family, life, others, and self, and going on with life.

Responses to Research Question Three—the impact of medication drug plans in the life of an elder living polypharmacy—were summarized by one Theme Cluster.

Theme Cluster One – The meaning of living polypharmacy within the context of drug plans included the frustration of understanding complex plans that were helpful to some but highly restrictive for others. Living pharmacy within a drug plan might mean restructuring of medication regimens, as the plan may only pay for generic drugs. Creativity and negotiation were essential elements of this description as some elders cannot take, or their doctors will not order, generic forms of medication. It means knowing what the limits of a plan are and the ability to pay out of pocket for brand names. Conditions that surround the drug plan challenge include flexibility to substitute a

generic medication, ability to pay out of pocket costs, and comprehension of the plan itself.

Responses to Research Question Four—teaching and sharing the living polypharmacy experience with healthcare providers—were described in five Theme Clusters. Although the reader will recognize overlap of descriptions with those of the first three research questions, one is reminded that these are specific directives that elders felt were imperative to guide the practice of healthcare providers.

Theme Cluster One – Providing care as listening and valuing the person – The meaning of providing care as described by the participants includes being able to listen and to value all those receiving healthcare services. Participants want healthcare providers to understand that living polypharmacy includes providing care that requires having to sit, talk, look at, and listen to the participant. It means that the elders wish to be respected when they meet with healthcare providers.

Theme Cluster Two – Providing care as collaborating and co-creating a health plan – Eighty percent of the elders described the need to participate in their care, to be team captain, coach, or at least a player that can call some of the plays. Elders want to report what their bodies are saying about the medication and, together with the provider, co-create a safe medication regimen.

Theme Cluster Three – Providing care as communication, giving clear understandable information to persons (healthcare recipients) – Providing care, in this instance, is perceived as the need for giving clear communication about all medication and the need to be told about potential adverse effects. Ninety percent of the participants felt that healthcare providers sometimes fail to mention possible medication side effects because they feel the elder might develop or imagine the symptoms if told what they are in advance. Contrary to that notion, the individuals describe being fearful as they develop side effects without having been told what to expect. Providing care means being clear and honest with the medication information and the need to communicate not only the action of the medication but the specific timing as well, such as once a day without breakfast.

Theme Cluster Four – Providing care as offering options (alternative care choices) – According to the participants, providing care encompasses the need for providers to appropriately offer therapeutic options and to not be so quick to only offer drugs. These alternatives should be addressed. For example there may be alternate care choices that help reduce blood pressure, cholesterol levels, and help with sleep disorders.

Theme Cluster Five – Providing care as recognizing economic limitations and negotiating cost – Providing care means understanding the life-world of the individual by considering resources and cost. Providing care means, in this instance, in addition to prescribing medications and showing concern, negotiating the cost of medications.

Stage Six--Essential Structure of Living Polypharmacy

Stage Six represents the essential structure of the meaning of the experience of living polypharmacy in the life-world of the elder. The experience of taking multiple medications everyday cannot be separated from one's context, i.e., past careers, socioeconomic status, values, beliefs. For example, the engineer described potting and graphing his world of "living polypharmacy."

Living polypharmacy, in this study, describes an individual taking four medications daily and feeling valued in the world with others in a complex system. It is about creating a safe and accurate remembering system that is unique to each individual in his or her life-world. Living polypharmacy is about multiple challenges and frustrations, such as not being listened to or trusted by many healthcare providers, not being offered alternative therapies, not having the resources to afford the brand name medications specifically with unstable formularies that change without notice, and living with adverse drug events that may affect one physically and psychologically, perhaps even causing death. Interestingly, polypharmacy is not an indicator of a good quality of life. Living polypharmacy successfully means being flexible and restructuring ones life-world, having a collaborative provider relationship, and having a good quality of life that is not affected by the number of drugs one ingests. Living polypharmacy means co-creating with healthcare providers a balanced system of care with a focus on the uniqueness of each individual elder.

Stage Seven--Participant Validation, Essential Structure of Living Polypharmacy

Stage Seven included returning to all participants with the essential structure to validate the interpretive findings. They were asked to comment on the structure and validate that my description accurately represented their experience. Additionally, they were offered the opportunity to delete or add any new information. Because the essential structure was mailed to them prior to our meeting and included comments from all the participants (with no identifying markers), the participants were also able to validate other participants' comments, such as, "I have never been ignored but I have known of others that have." One hundred percent of the participants were contacted and agreed with the description as representing their experience. Some of the comments from the participants follow.

- **Brooks** - More people need to ask us what we are going through. I could add that taking medications is about asking us our opinion more often, listening to what we have to say, and responding with kindness. In answer to your question, yes, you heard it, the story is as it needs to be told; it is precise. Go tell it on the mountain.
- **Boyd** - All items are valid. I don't recall ever having my concerns "laughed off." But I have had them ignored or not given proper consideration.
- **Brianna** - I need to know, I need to be clear, and I need options. I agree with all, [the descriptions] some [marked with ok] more than others.
- **Beverly** - The only thing you need to add, and I know I always talk about it, is that doctors need to consider cost.
- **Barry** - You got it right and I want to add: Taking the medication, monitoring what it is doing, and keeping the list is not enough. Sometimes you need to pay attention and ask why you are still on certain medications.
- **BJ** - I agree with the recommendations, I'm glad to see some of my comments. I agree with the other comments. The story is right and needs to be told.

- **Brandi** - This study needs to be done, others need to hear it too because they are many asking the same questions. You got it right. Make sure they hear that if the doctor is rushed the pharmacist is more than willing to explain.
- **Bonnie** - These things are important to document and pass on to others. This is not to say that all the statements are my comments but all the statements need to be shared with others.
- **Bea** - You got the story correct. Make certain to let everyone know that if the medication is making you goofy and the doctor keeps saying you have to take it, tell him to listen to you. If that doesn't work get another doctor very soon, don't wait until something happens.
- **Blanca** - The Part D Plan is not for everyone. I agree: you got the story; it's a story that needs to be told. If we say the medication is not working, listen and make changes.
- **Benny** - We can make the right decision, given the right information. The reaction I had with the BCG was a nightmare that somehow others need to know. The doctors have our test and know what we need, but only my body really knows. We agree, our own story and our own experience need to be told. We know. We are the only ones that truly know.
- **Benito** - Tell it as you heard it. It's correct, you got it. I guess we just need to add that sometimes taking medications is confusing based on what your body tells you, what your friends taking the same medications know, what you read about on the internet, what your doctor tells you that you need, and what you've always known to do.
- **Bettye** - You got it and you have to tell it. Taking medication is not always fun and sometimes the medication doesn't work. I would add that taking medication alters your life and you need to be flexible or you will have trouble with it. Being flexible doesn't guarantee success, it just helps. I also need to add that if you are put on a new drug, they need to order enough for say 7 days. If the drug doesn't work than you get off of it and you don't have a 30 day supply.

- **Brittney** - I don't have anything else to add. I agree with the findings. All the recommendations need to be included.
- **Bonicha** - You couldn't help but get the story right. As many times as you returned to ask, did I get it right, did I hear you say, and make me understand? I can say the story is correct. Just add that we need to speak up and maybe this is one way to do it, this study.
- **Barb** - You have to know what works and what doesn't. I would make these recommendations to healthcare providers who care for me: Listen to me when I tell you about side effects of a medication, remember that just because I'm old doesn't mean that I don't understand about my condition or my medication, and let me know exactly what the medication is for and what might happen with it.
- **Ben** - The story is correct. I have heard many of the same complaints as a pharmacist, so it needs telling.
- **Benjamin** - As a businessperson I have to be accountable, know your body, learn to ask, and manage your care with all the providers.
- **Belinda** - The most important thing is communication. Have a doctor that you trust, that talks to you, that really cares that knows who you are, and works with you to keep you healthy.

SUMMARY

Exploring the essence of the experience of polypharmacy in the life-world of the community dwelling elderly utilizing Colaizzi's (1978) analysis suggests several key findings. The participants described the experience of living polypharmacy as a daily challenge, and one in which the need to listen to their bodies is constant. While the participants agree that medication is a daily reminder to remember, they also agree that at times it betrays the body. There is a strong desire for their voices to be heard, specifically during the time of betrayal. Some of the participants with positive attitudes toward their healthcare providers reflected total trust in the provider and satisfaction with quality of care. All of the participants agreed that collaboration and the need to be a part of the decision-making process was important. While some of the participants felt that medication might contribute to quality of life, they attributed quality of life to inner

strength, values, and beliefs and being content with family, self, others, and being active. Less than 3% of the of the participants were enrolled in the Medicare drug plan due to several factors, including the complexity of the plan, the lack of access to brand drugs, and the inability of the plan to compete with their current plan. Some of the participants had military medication plans and had no need for the new drug plan. Ninety-five percent of the senior adults in the study procured their drugs through the military base, discount stores, Sam's Club, the internet, free samples from the doctors, and Canada. All of the participants agreed that healthcare providers needed education related to living polypharmacy as it is not just about prescribing drugs, nor is it just about the number of drugs. At its core, polypharmacy is about the individual taking the drug.

Chapter Five will include a review of the study, unsuspected findings, and conclusions. Additionally, Chapter Five includes implications for action, education, policy and practice along with recommendations for future research and concluding remarks.

Chapter Five: Conclusions, Summary, and Recommendations

INTRODUCTION

This chapter begins with a summary of the study and important findings drawn from the data analysis presented in Chapter Four. It provides a discussion of the findings in three major sections – findings related to the literature reviewed, findings related to Husserl’s philosophy, and educational, practice, policy, and ethical implications of living polypharmacy. The chapter ends with an overarching conclusion and recommendations for future research.

OVERVIEW OF THE STUDY

Findings presented in this Husserlian phenomenological study provide insight into the dilemma of living polypharmacy. The complexity of polypharmacy is best appreciated when one understands that while advances in science and medicine allow individuals to live longer, these benefits are not without cost. With the continued growth of the older population, advances in science and medicine, and protocols for treatment of chronic illnesses, healthcare providers inadvertently have contributed to the dilemma of polypharmacy. As the population of elders increases, so does the incidence of polypharmacy, and thus the importance of understanding the meaning of the experience as a tool to guide healthcare providers in support of patient-focused safe practice is paramount.

The purpose of this study, to explore the meaning of the experience of polypharmacy in the life-world of the community dwelling elder, focused on the four areas most central to the dilemma of polypharmacy today. The four areas are: 1) meaning of living polypharmacy from the perspective of the elder, 2) impact on quality of life, 3) impact of current drug plans, and 4) what the experts (elders living polypharmacy) want healthcare providers to know. These areas were addressed by the research questions and guided the interpretation of participant narratives using Colaizzi’s (1978) method of analysis and the rigor of Lincoln and Guba (1985). Twenty participants, taking four or

more medications daily for at least 30 consecutive days prior to the study, volunteered and shared their experiences of living polypharmacy.

A brief summary follows of the themes that emerged from the responses of each research question. Common overarching concepts appear in italics.

Research Question One

What are the common essences in experiencing the meaning of polypharmacy in the life-world of the community dwelling elder?

- Living Polypharmacy as *trusting, collaborating, and co-creating* one's medication regimen
- Living Polypharmacy as feeling betrayed by the medication that was prescribed to help
- Living Polypharmacy as knowing one's body, knowing what medications work and what does not work (*communicating with self*)
- Living Polypharmacy as remembering to remember and creating remembering systems (*creating*)
- Living Polypharmacy as sensing a lack of *concern*, not being heard, not being seen, not being known (*communicating with others*)

Research Question Two-What impact does taking multiple medications have on quality of life in the life-world of the older adult?

- Living Polypharmacy as perceiving having an impact on one's quality of life

Research Question Three-What impact does Medicare Part D (New Drug Plan) have on "living polypharmacy"?

- Living Polypharmacy as having an impact on obtaining medication with the new drug plan

Research Question Four-What do community-dwelling elderly want healthcare professionals to know about polypharmacy in their life-world?

- Providing Care as listening and valuing the person (*caring*)
- Providing Care as *collaborating and co-creating* a health plan
- Providing Care as *communication*: giving, clear understandable information to persons (healthcare recipients)

- Providing Care as offering options (alternative care choices) (*communication, collaborating*)
- Providing Care as recognizing economic limitations and negotiating cost (*collaborating*)

ESSENTIAL STRUCTURE

The meaning or essential structure of living polypharmacy that emerged from the exhaustive descriptions supporting these themes is described in the following section.

Living polypharmacy is defined as consuming four medications daily while existing in the world with others in a complex healthcare system. Essential structures of living polypharmacy include the *creation* of a safe and accurate remembering system of medication compliance that is unique to each individual in his or her life-world. Other essentials emphasize being in the world with healthcare providers who are empathetic, and who come to know and *care* about their patients on a personal level. Living polypharmacy successfully means being flexible and restructuring one's life-world, having a *collaborative* provider relationship, having a good quality of life that is not affected by the number of drugs ingested, and *co-creating* with healthcare providers a balanced system of *care* with a focus on the uniqueness of each individual elder and on-going *communication* with all care providers.

In the absence of these essential structures, multiple challenges and frustrations that accompany living polypharmacy exist. Examples of these challenges are elders who are not being listened to or trusted by many healthcare providers, elders not being offered alternative therapies, elders not having adequate resources to afford the brand name medications, and elders who have formularies dictate changes in medications—going from the familiar to the non-familiar. Other frustrations include living with adverse drug events that may affect one physically and psychologically, and may even cause death. Perhaps most interestingly, polypharmacy alone is not an indicator of a good quality of life.

DISCUSSION

The findings in this study address the aim of expanding the body of knowledge relative to polypharmacy needed to educate researchers, policy makers, health care

professionals, and to ultimately improve the health of the elderly. Participants in the study voiced their perspectives that speak to our current complex system of promoting polypharmacy and the need for change such as collaborative care and offering alternative options. Their perspective of our current health care system speaks to a need to strike a balance between clinical judgments, evidence based data that promote polypharmacy, and complicated drug plans with formularies that change without notice and have an effect on their life world. Clearly, this heightened awareness of living polypharmacy has implications for nurses as they step into the life world of the patient and attempt to collaboratively plan a patient-focused medication regimen while considering the tensions between and within our health care delivery system.

Nurses can increase their understanding of patients by carefully listening to their stories and allowing these stories to guide and focus their practice, a practice that is specific to each individual. Being attentive to a patient's lived experiences enables the nurse to couch teaching in a language and context that is familiar to the person and can improve adherence to complex medication regimens. Giving voice to the consumers' life-world in this way promotes dignity and respect and increases positive health outcomes.

All the participants contributed as experts in the exploration and description of living polypharmacy. The definitions noted in the review of the literature (Chapter Two) tend to generalize and quantify the scientific characteristics of polypharmacy, but they do not reflect the picture painted by these participants. The definitions found in the literature review do not adequately portray the fear and concerns described by the individuals as the medication betrays the body.

You are tired, have weird dreams and headaches. All those medications tore my stomach up. I couldn't eat anything and I just felt like I was in another world in a sense. The medication was worse than the tumor. I felt fearful and depressed. (Chapter 4, p. 80)

This humanistic, everyday perspective of taking multiple medications is absent in the scientific literature. The following section includes findings related to the literature reviewed, the human perspective, and the need for cultural change related to effective management of medication.

STATE OF THE SCIENCE OF POLYPHARMACY AND HUMAN PERSPECTIVE

Prescribing Patterns

Two findings in the current study support Rumble and Morgan's (1994) report on patterns of prescribed drug usage. These researchers found that medications were prescribed more often for females than males, that cardiovascular medication was the primary therapeutic class of drugs prescribed for adults 65 years of age and older, and that there was a steady increase in drug usage with age. In the current study, two 86 year-old females were consuming 13 to 20 drugs per day, an 88 year-old female and an 86 year-old male were taking fewer medications than the participants in their 70s, and cardiovascular class drugs were among the primary medications consumed. Although the sample size of this study is small and its findings not intended for generalization or comparison, it is noteworthy that this study partially supports Rumble and Morgan's (1994) findings.

However, unlike the Rumble and Morgan study regarding increased medication use with age, the participants in the present study were more comparable with those in Henderson et al.'s (2006) study, which demonstrated no significant association between the number of medications prescribed and age. Other studies of the incidence of polypharmacy and gender do support the notion that females are prescribed more medications than males with similar medical indications (Bedell et al., 2000; Jorgensen et al., 2001; Kaufman et al., 2002; Veehof et al., 2000).

The positive correlation between polypharmacy and the number of prescribers noted by Barat et al. (2002) is not comparable to this study. The participants in Barat et al. (2002) were limited to 75 years of age, and it was not clear how many medications were actually consumed daily. The ages of the participants in the current study ranged between 65 and 88, and the participants verified the number of medications consumed daily. Three of the participants with two to three prescribers consumed 13-20 drugs per day, yet other participants with six prescribers were taking less than seven drugs per day.

The pharmacists in the Chumney and Robinson (2006) study recommended not necessarily a decrease in polypharmacy, but rather a reduction in a medication regime to more appropriate drugs, which may lead to a decrease in the incidence of drug misadventures, improved patient outcomes, and decreased cost to patients. Elders in the

present study—Barb, Brittney, and others—on thyroid therapy validated an increase in medication cost based on the potential for reduced efficacy. These participants consumed their thyroid medication late in the evening; however, it is suggested per evidence-based data that the dose be taken early in the morning prior to breakfast. Indeed, the efficacy is reduced when the medication interacts with food products. Chumney and Robinson (2006) emphasize the notion that good medication management is not necessarily about reduction of drugs but a focus on appropriate evidence-based timing and dosage that demonstrates positive patient outcomes.

Consequences and Compliance

Barat et al. (2000) reported that the number of drugs prescribed and the number consumed might not be the same. Barat et al. (2000) interviewed senior adults at home, examined their drug storage boxes, and noted a large number of prescribed drugs (17%) in the drug storage or brown bag at the time of the examination were not in use.

Reasons for non-adherence, as reported by Cline et al. (1999) and supported by Evangelista et al. (2003), were voiced by the volunteers in the current study: forgetfulness, unpleasant side effects, and cost. Bea did not want to take her medication for diabetes because it made her feel goofy; Barb stopped her antidepressants because they made her feel like a zombie; Brandi stopped her medications because of cost; Benny and others stopped medications due to bleeding, cost, and forgetfulness.

DEFINITION AND ASSESSMENT OF POLYPHARMACY

The findings in this study support previous research suggesting that there is no consensus on any one definition of polypharmacy (Fulton & Allen, 2005). Additionally, the three currently accepted methods to assess for polypharmacy—the brown bag approach, periodic medication review, and medication adherence evaluation, as reported by Fulton and Allen (2005)—are not necessarily accurate.

The current assessment of polypharmacy, as demonstrated by the study participant named Barry, illustrates a taken for granted focus that addresses inappropriate prescribing of medication. He provided his doctor a computer generated list of his medications on each visit and the doctor automatically wrote prescriptions for the drugs on the list, or the drugs in the brown bag. No one ever questioned that Barry's ulcer problem had been resolved years ago, which would have eliminated the need for certain

medications. Between our first and second interview, Barry talked to his doctor about his medication regimen and he and the doctor estimated a cost of over \$20,000 for drugs that he no longer needed.

Human Perspective

The two qualitative studies reviewed reported some common findings. Although limited to women, de Crespigny et al.'s (1997) study participants wanted access to medication information and interactions with healthcare providers, like the volunteers for the current study. On the other hand, some of the findings in the current study did not agree with de Crespigny et al. (1997) or Spinewine et al. (2005). Spinewine et al. (2005) presented data on appropriateness of medication use in an inpatient setting. While the current study setting was the community and findings may not be transferable, similar themes were revealed such as the doctors' lack of interest in teaching and unfamiliarity with medication appropriate for the geriatric population. Eighty percent of the participants received information about medication from the pharmacist more frequently than they did from the doctor. In the current study, ninety percent of the participants received information from the pharmacist, received their prescriptions from the cardiologist as the primary physician, and ninety-five percent stated that the nurses did not get involved with medication. They participants also stated that they did not engage the nurse with inquires relative to medications.

CLOSING THE GAP BETWEEN STATE OF THE SCIENCE AND THE HUMAN PERSPECTIVE

Based on the extensive literature review addressing polypharmacy and aging and the findings of this study addressing living polypharmacy by elders themselves, an attempt is now made to close the gap between the two perspectives. A revised definition for polypharmacy strongly supports the need for the inclusion of cultural changes, which includes restructuring of the terminology and practice of medication management. The term polypharmacy as currently used does not capture the true essence of the use of multiple medications as described by the participants. Thus, a revised definition should encompass more than numerical indicators of medication management. For example, a focus on the interaction between the body, the medications, and the life-world of the recipient reveals the true complexity of polypharmacy as noted by experts—Benny, Barb,

Blanca and others in this study. Thus, the new definition should be expanded to include: a) the purpose and action of medication on the body, b) clinical implications for the medication, c) therapeutic implications, d) consequences of the medication, e) assessment specific for the individual within his or her life-world, and f) consistent vigilance to decrease the number of inappropriate medications. This definition should address:

- tools that adequately assess all perspectives of the medication regimen at each visit or new prescription
- mechanisms for individuals to report drug misadventures immediately
- strategies for clear communication about all medication with all recipients and their caretakers
- collaborative medication management by all healthcare providers

Implications for closing the gap between current state of science and human perspectives encompass viewing polypharmacy through a different lens—a dynamic, contextual lens. Moreover, closing the gap must include the human perspective within his or her life-world.

Husserl's Philosophy and Implications for an Expanded Definition of Polypharmacy

The following discussion is specific to the current study. The discussion expands the meaning of living polypharmacy in the context of the participants' life-world and the dimensions in that life-world, dimensions such as intersubjectivity and embodiment. The 12 emergent themes woven within and between each question undoubtedly overlap. For the purposes of this discussion, these 12 themes are integrated into three overarching topical areas that are relevant and essential to an expanded perspective of living polypharmacy: collaborating and co-creating, communicating, and caring. The participants repeatedly described an essential structure of polypharmacy related to these areas and recommended a model of care that involves a healthcare team that values the individual, communicates clearly and effectively, and encourages collaboration and co-creation with providers. The following model is designed to address the empathic life-world of the elderly living polypharmacy.

A LIFE-WORLD FOCUSED MEDICATION MANAGEMENT MODEL

This section begins with a summary of Husserlian notions relevant to a caring patient-focused healthcare model. Husserl (1970) named the starting point from which we divide our experiences as the life-world. It is a world that appears meaningfully to consciousness; even if one chooses to ignore a situation, he or she has attached meaning to that situation. Thus, it is a relational world of consciousness.

The life-world, for us who wakenly live in it, is always there, existing in advance for us. Waking life is being awake to the world, being constantly and directly “conscious” of the world and of oneself as living in the world, actually experiencing and actually effecting the ontic certainty of the world. (Husserl, 1970, pp. 142-143)

Husserl was clear in his delineation of the differences between being conscious of the world and conscious of objects or things in the world. The two make up an inseparable humanly relational world known as the life-world. The confusion, as pointed out by Moran (2005), is that Husserl speaks of different worlds without providing clarity—the surrounding world and the everyday world. Yet Husserl (1970) is clear that all the worlds are contained in an overarching horizon of the life-world (*Lebenswelt*) that is pre-given to our experience pre-reflectively and, in this sense, all of our experiences take place within its horizon. In this life-world, humans exist with their concerns and sufferings living in social interactions.

EMPATHETIC SOCIAL INTERACTIONS AND INTERSUBJECTIVITY

According to Husserl, intersubjectivity is an act of empathy, such as when we position ourselves in the place of another, or when we learn to walk in someone else’s shoes. Forms of intersubjectivity, or empathy with others, have the capacity to either make one feel comfortable or uncomfortable. One is capable, with language and meaning, to be empathic or not, and invoke a sense of value and worth or not.

The origin of the word, empathy, dates to the 1880s when Theodore Lipps coined the term “*einnehmung*” to describe the emotional appreciation of another person’s feelings (Zinn, 1993). It is a balanced curiosity that has the potential to understand another person’s experience from within that person’s reference. It is like a reflection in a mirror.

In the current study, several participants felt that their providers were empathic as they sat down with them and explained things, listened, heard, and encouraged them to

participate in their medication management. On the other hand, other participants felt as if their voices were ignored as they described feeling fearful, betrayed by the medications, not like themselves, and devalued. The participants suggested the need for a caring healthcare provider, an empathic provider. Studies have indicated that when opportunities for empathy are missed, visits are less positive for the provider and the participant; conversely, empathy is a cost effective method of facilitating positive outcomes (Bellet & Maloney, 1991; Levinson et al., 2000). In caring, one responds empathically—one gives voice to the individuals' life-world.

Empathy and the Life-World

The participants in the study described living polypharmacy in the context of their life-world. These individuals suggested the need to collaborate and co-create their medication regimen as they had lived other parts of their lives, i.e., veterans, engineers, librarians, pharmacists, registered nurses, independent decision makers.

Living in the life-world of polypharmacy is living in a shared world with a team of healthcare providers that provide the medications, information about the medications, access to drug plans, and all that is required for safe medication management. All who experience polypharmacy, patients, families, and healthcare providers alike, share this life-world. Unless shared in a caring manner, it becomes an experience of objectivity and dehumanization.

For one of Husserl's students, Gurwitsch, the term life-world is understood as the world in which we pursue our goals and objectives, the world as the scene of all our human activities (Gurwitsch, 1966). The objective of the elders in this study is to be recognized, valued, and understood in their world and to participate in making care decisions for their bodies. Participants, in general, were content with their quality of life in their life-world as they engaged self, families, friends, and activities. They were now seeking the same satisfaction and engagement when healthcare providers entered their life worlds.

Some of the participants felt that they were merely receiving a prescription and were not necessarily a part of the team. This particular practice made the individual feel devalued and, in essence, invisible. Ninety-five percent of the participants did not want to feel as if they went to the doctor only for a prescription; rather, they wanted to sit and

talk—they wanted the healthcare provider to become aware and sensitive to their life-world, to recognize them as partners in care. The elders, conscious of their feelings and emotions, voiced their experiences and often described the responses of providers as uncaring, not feeling for them, and not listening to their cries. In some cases, the participants felt like the healthcare providers did not even acknowledge providing the same space in the world as they did not seem to make eye contact with them.

Barry et al. (2001) reported that giving voice to the life-world resulted in positive outcomes and treatment of patients as unique human beings. Poorest outcomes resulted when the patients used the voice of the life-world but were ignored or blocked by the doctor's use of the medicine voice, or the voice that objectifies the patient and negates their life-world.

Education and Practice Implications for Empathy and the Life-World

Both empathy and life-world focused medication management can be taught and translated into practice. Empathy is the cornerstone of several communication models that are currently in place such as The Four Habits, The Four E's (Engage, Empathize, Educate, and Enlist), Pearls (Partnership, Empathy, Apology, Respect, Legitimization, Support (adopted by the American Academy on Physicians and Patients) and others (Barrier et al., 2003; Frankel & Stein, 1999; Keller & Carroll 1994).

The value of life-world focused care is realized in several areas of education and practice. Mienczakowski et al. (2002) and Ziebland (2004) developed ways of raising awareness of life-world experiences in a practice setting. Gary (2003) uses educational approaches through dramatic presentations and art to deepen healthcare providers' understanding of life-world experiences. Additional methods of teaching about the life-world include giving voice to one's life-world through personal consultations and interviews. As the aging population increases, the role of the healthcare provider must include listening to patients, understanding their perspective, and, as the participants in this study noted, valuing them as unique individuals.

Policy Implications

Stories are used in various ways. For example, Jessica's story became law. Jessica Lunsford was a child that was abducted and sexually molested. Amber's story culminated in the Amber Alert that operates in all 50 states with public announcements about child

safety. Stories are told for many reasons—to educate, to inspire, to make a difference (Steiner, 2005). The voices of the elderly living polypharmacy can rise up and be heard through legislators and policy makers to encourage pharmaceutical companies to include older adults in clinical trials. Elders can use their voices to encourage policy makers to adopt an action plan that addresses the need for a national formulary. Currently, there exist various insurance policies with different formularies. A formulary is a list of medications that the insurance pays for part of the cost. The list of drugs (the formulary) is reviewed and changed by the insurance companies every few months. These formularies are competitive and neither the formulary nor the pricing is consistent. A national formulary would promote consistency and the possibility of affordability. Healthcare providers can also use their voices to encourage representatives to lobby for affordable drug plans that are patient centered. Nurses are reminded to utilize their role as advocates to voice their participant's concerns to healthcare lobbyists.

ETHICAL IMPLICATIONS OF LIVING POLYPHARMACY

The nurse, as a patient advocate, has two roles: to inform and to support (Bandman & Bandman, 2002). As an advocate, one must have the correct information or know how to locate it. Patients requesting information relative to the drug plan need to be given that information or referred to someone who can help them.

In essence, living polypharmacy encompasses ethical directives for healthcare providers. First, healthcare providers need to explore the tight balance that exists between the spirit of technology, the push to medicate, the need to adhere to evidence based systems that advocate the use of multiple medications, the notion of maintaining quality of life, and the primary directive to do no harm. Given all those parameters, adherence to an ethical and moral code are paramount in the life-world of the elderly living polypharmacy. Most importantly, it is imperative that individuals be treated with respect and dignity, without prejudices based on gender, age, socioeconomic barriers, education, or any other biases.

With improved technologies and access to medications, one must reflect on the notion of technological progress that has the potential to turn humans into mere commodities (Habermas, 1990). In a phenomenological study, Barnard (2000) found that

technology demands levels of attention and commitment that interfere with accomplishing goals. Barnard summarizes the experience in the following manner:

In essence, the nurse's ability to provide the kind of humanistic, client-oriented care that is aspired for is perceived as being compromised by the demands of technology and interferes with the will of the nurses and the practice of nursing" (p. 1138).

The participants in the current study described their experiences with doctor visits that culminated in a prescription and a directive to return in three months. These participants expressed feeling devalued as a result of this interaction. The ethics of dignity and respect along with empathic care is in question when the individual's worth is measured by how efficiently they fit into a larger impersonal system that demands unquestioning compliance with authority.

Ethics is closely woven in the tapestry of care with empathy as one interacts with the individual patient as a valued human. Provision of care as described by the participants has implications for improved ethical education for healthcare providers.

CONCLUSIONS

Based on this phenomenological study and the literature reviewed, three principles are noted. First, this study partially supports the principle that the use of multiple medications does not always coincide with appropriateness of therapy. Secondly, the study introduces a life-world care design as a practice and educational trend toward patient participation in healthcare. Also introduced are ethical concerns for autonomy and recognition of human perspective in a culture of rapid production of medications and proliferating technology. Thirdly, although this study concurs with some of the existing definitions of polypharmacy, it extends the term to include the humanizing value that speaks to concerned practice and the possibilities for therapeutic options. The meaning of polypharmacy described by these participants does not necessarily negate clinically therapeutic indications but, more to the point, it integrates that idea with personal needs and the notion that humans are different, and that not all medications works the same for all individuals. These principles suggest implications for education, policy, and practice.

The following additional implications for education, policy, and practice are planned as a result of this study to heighten awareness of the meaning of living

polypharmacy in the lives of community dwelling elders. The researcher will develop and present the following programs during seminars and meetings to Texas Nurses Associations, Clinical Nurse Specialists, Texas Medical Directors meetings, Medicare and Insurance seminars, Long Term Care Staff, and to Educators and Legislators.

Education:

- Develop an expanded definition for medication management to include contextual elements.
- Develop an educational program that includes a tool that adequately assesses medication management at each prescribing or dispensing opportunity.
- Develop a tool that addresses the utility of continuing or initiating therapy.
- Develop a life-world focused medication management model that is patient centered and highlights the need for collaboration with all providers.
- Develop a handbook for healthcare providers that address ethical issues, empathy, giving voice to the life-world of patients through interviews and personal consultations, and all the factors voiced by these participants. Offer workshops through conferences and in clinical settings.
- Develop an educational booklet with information relative to drug plans to educate patients and families in clinical settings and community organizations such as the AARP.
- Design an effective mechanism that addresses reminders to take the medication.

Policy:

- Meet with representatives to present findings; educate legislators by attending legislative meetings.
- Address policy objectives of Healthy People 2010 to assure safe and therapeutic medication management.

Practice:

- Presentation of findings to professional organizations such as the Texas Nurses Association, the Texas Clinical Nurse Specialist Association, at Texas Medical Directors' meetings, Long Term Care facility in-services, and Medicare and insurance seminars

- Implementation of educational modules for all healthcare disciplines that address geriatric medication management in their basic curricula.
- Dissemination of findings in professional journals and popular media venues.

CHANGE OF CULTURE IN THE USE OF “POLYPHARMACY”

Central to the idea of a life-world focused medication management is a cultural movement towards restructuring the status quo. Since the term “poly” implies more than one, the focus of medication tends to be on number of medications versus the purpose or outcome of medication regimen. Many healthcare professionals have decried the use of multiple medications, and the use of the term is so widespread that it is listed in many general dictionaries (Fincham & Nissenbaum, 1991). Consequences of polypharmacy have been documented, discussed, analyzed, and quantified globally. Yet, the trend of polypharmacy continues to escalate. In response to the participants’ voices, a cultural change of care model is preferable and educational strategies necessary for its implementation. While it is important to quantify incidence of polypharmacy and drug misadventures in keeping with ethical considerations and to improve the health of the elderly, e.g., the Healthy People 2010 initiative, it is also important to address medication regimens in terms related to the life-world of patients. This cultural change focuses care delivery on the human experience in an attempt to ensure that meaningful provider-patient collaboration becomes the standard of care.

FUTURE RESEARCH

The findings from this study will be used as pilot data to develop a conceptual framework for a life-world focused medication management care model. This model, living polypharmacy assessment strategies, and related educational modules will be tested in larger national studies.

The participants in the current study were unique in that they were relatively healthy, traveling, involved in community activities and volunteer work, and did not necessarily see the use of multiple medications as a burden. These findings do not preclude the possibility that other elders who are frail, or who reside in a long term care facility, may indeed perceive the consumption of medications as a burden. Thus, studies that sample other populations of elders are warranted.

Further nursing research is also warranted to investigate the role of nurses in medication management. In fact, ninety-five percent of the participants stated that they would not consult a nurse about medications. Both survey and qualitative research methods may help explicate current empathic and knowledge levels along with collaborative efforts of nurses who enter the life-worlds of their patients.

Finally, future studies in healthcare must integrate the “expert” voices of the recipients of such care, for these are the experts who will expand our perspectives as they teach providers about the essence of concernful practices—empathic understanding, communication, and collaboration.

Appendix A: Recruitment Flyer

You are invited to participate in a nursing study

Purpose: To explore the experience of taking multiple prescribed medications daily.

Who: English or Spanish speaking individuals in the community that are 65 years of age and older and take at least 4 prescribed medications daily.

What: One to three 30-90 minute recorded interviews with short questions about your use of medications. All interviews will be kept confidential.

The study is approved by University of Texas Medical Branch

When: At a time convenient to you.

Where: At a place convenient for you.

All participants that qualify by age and number of medications taken may contact me, Eugenia Blomstrom, at 713-907-5021 or at ebloomstrom@aol.com.

Thank You.

Appendix B: Consent Form

SUBJECT CONSENT FORM

You are being asked to participate in a research project entitled, “The Essence of the Experience of Polypharmacy in the Life-world of Community Dwelling Elder.” The study is being conducted by Eugenia Ybanez-Blomstrom, RN, CNS, Psych/MH, a doctoral student at the University of Texas Medical Branch (UTMB) in the Graduate School of biomedical Sciences. Eugenia is conducting this study under the supervision of Diane Heliker, PhD., R. N., Professor in the School of Nursing at UTMB.

PURPOSE OF THE STUDY

The purpose of this study is to describe the phenomenon of the experience of polypharmacy; taking multiple medications daily and how that effects the elder in the community and to gain knowledge from the participants in an attempt to better understand the experience. You are being asked to participate because of your experience with taking multiple medications daily and the impact on your daily life.

PROCEDURES RELATED ONLY TO THE RESEARCH

1. Eugenia Ybanez-Blomstrom will interview you at a time and place that is convenient to you. You will be interviewed at least twice, but no more than 3 times for a period of 30-90 minutes at each meeting. The interviews will be tape recorded and later transcribed verbatim so that the researcher can interpret your responses alone and with the responses of all the other participants in the study. If, for any reason, you become unable to safely and comfortably participate in or complete any interview session, it will be stopped. You may refuse to participate or withdraw your participation in this project at any time without prejudice.
2. Eugenia Ybanez-Blomstrom will also ask you to complete 2 questionnaires asking you your age, race, marital status, years of education completed, living arrangements, income status, and medication history; name and number of medications, how long you have taken this medication, name of alternative medication, number of prescribers and their specialty, amount spent on medication.
3. The questionnaires and transcripts will be coded so that none of the study materials contain identifying information about you.
4. The audiotapes, transcripts of the interviews, and responses to the questionnaires will be kept in a locked file cabinet in the researcher’s office. One copy of the coding scheme that allows only the researcher to identify you will be kept in a locked file separate from the one where the interview tapes, transcripts, and questionnaire responses are stored.

5. Following any and all of the interview sessions, Eugenia Ybanez-Blomstrom may, contact you by e-mail, postal service, telephone, or in person to clarify any information that she has questions about. This is because it is important for her to have an accurate understanding of the answers you provided.
6. Any information gained in this study that could benefit you will be made available to you at the conclusion of the study.

PROCEDURES RELATED ONLY TO THE RESEARCH

The procedures related to this descriptive phenomenological study are standard for this type of study and involves no experimental research.

RISKS OF PARTICIPATION

The risks to the participants are the potential for loss of confidentiality and the possibility that recalling uncomfortable memories may cause discomfort or more significant responses. To minimize these risks, all study materials will be coded and locked in the Principal Investigator's (PI) office. Participants who express discomfort will be referred to an appropriate support service for counseling at their own expense. As an advance practice nurse with specialty training, the PI will attend to any participant's discomfort, stop the interview, and refer the individual.

NUMBER OF SUBJECTS PARTICIPATING AND DURATION OF THE STUDY

The anticipated number of subjects in this study will be 20 community dwelling elderly participants. The length of time for participation is no longer than 3 hours over a period of 12 months.

BENEFITS TO THE SUBJECT

You will not benefit from your participation in the research project.

BENEFITS TO SOCIETY

The study will help healthcare providers understand the essence of the experience of taking multiple medications daily in the community dwelling elderly. This information will be used to develop an educational program and address safe practice.

ALTERNATIVE TREATMENT

The alternative is not to participate in the study.

REIMBURSEMENT FOR EXPENSES

You will not be reimbursed for your participation in this study.

COSTS OF PARTICIPATION

There will be no cost to you for your participation in this study.

USE AND DISCLOSURE OF YOUR HEALTH INFORMATION

Study records that identify you will be kept confidential as required by law. Federal privacy regulations provided under the Health Insurance Portability and Accountability Act (HIPPA) provides safeguards for privacy, security, and authorized access of your records. All of the interview and questionnaires information collected from you during this study are collected only because you are in this study. The study results will be shared with you in summary form and will be published only as aggregate data, without identifying you in any way, in professional journals. Your records may be reviewed in order to meet federal or state regulations. Reviewers may include, for example, representatives of the UTMB Institutional Review Board. This authorization for the use and disclosure of information as described above expires upon the conclusion of the research study.

ADDITIONAL INFORMATION

1. Informed consent is required of all persons in the project. Whether or not you provide a signed informed consent for this research study will have no effect on your current or future relationship with UTMB.
2. The principal and alternative procedures, including the experimental procedures in this project, have been identified and explained to you in language that you understood.
3. The risks and discomforts from the procedure have been explained to you.
4. The expected benefits from the procedures have been explained to you.
5. An offer has been made to answer any questions that you may have about these procedures. If you have any questions before, during or after the study, or if you need to report a research related injury, you may contact Eugenia Ybanez-Blomstrom at 713-907-5021 or e-mail at eblomstrom@aol.com at any time, or contact Dr. Diane Heliker at 409-772-7311.
6. Your participation in this study is completely voluntary and you have been told that you may refuse to participate or stop your participation in this project at any time without prejudice and without jeopardizing your medical care at UTMB. If you decide to stop your participation in this project and revoke your authorization for the use and disclosure of your health information, UTMB may continue to use and disclose your health information in some instances. This would include any health information that was used or disclosed prior to your decision to stop participation and needed in order to maintain the integrity of the research study. All new findings

during the course of this research that may influence your desire to continue or not to continue to participate in this study will be provided to you as such information becomes available.

7. If you are injured or have an adverse reaction because of this research, you should immediately contact one of the personnel listed in Clause #5 above. Emergency medical treatment will be available at The University of Texas Medical Branch hospitals at no cost to you. No additional compensation will be provided. Agreeing to this does not mean that you are giving up any legal rights that may have.
8. If you have any questions regarding your rights as a subject participating in this study, you may contact Dr. Wayne R. Patterson, Senior Assistant Vice President for Research, Institutional Review Board, at 409-266-9475.
9. You have the right to privacy, and all information that is obtained in connection with this study and that can be identified with you will remain confidential as far as possible within state and federal law. However, information gained from this study that can be identified with you may be released to no one other than the investigators, your personal physician, and the UTMB Institutional Review Board. The results of this study may be published in scientific journals without identifying you by name.

The purpose of this study, procedures to be followed, risks and benefits have been explained to you. You have been allowed to ask questions and your questions have been answered to your satisfaction. You have been told who to contact if you have additional questions. You have read this consent form and voluntarily agree to participate as a subject in this study. You are free to withdraw your consent, including your authorization for the use and disclosure of your health information, at any time. You may withdraw your consent by notifying Eugenia Ybanez-Blomstrom at 713-907-5021 or Dr. Diane Heliker at 409-772-7311. You will be given a copy of the consent form you have signed.

Date	Signature of Subject
Signature of Witness	Signature of Authorized Representative (If applicable)
Description of Representative's Authority to Act for Subject (if applicable)	

Using language that is understandable and appropriate, I have discussed this project and the items listed above with the subject and or his/her authorized representatives.

Date	Signature of Person Obtaining Consent
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Appendix C: Interview Guide

Participants will be asked:

1. Can you tell me in your own words what it is like to take medications everyday?

Probe: How is it taking medication several times a day?

Probe: What is that experience like for you?

2. Tell me what a normal day is like for you.

Probe: What is a normal day like for you from the time you get up to the time you go to bed?

Probe: If you could draw a picture of a normal day, what would it look like?

3. How would you describe your quality of life?

Probe: Would you say that taking medications impacts life?

Probe: How does taking medications impact your life style?

4. Tell me about your experience with the new drug plan?

Probe: What do you think is most/least helpful, in this plan, for you?

5. What would you want us, healthcare professionals, to know about your experience with taking medications, something that we could use to make a difference, anything?

Appendix D: Demographics Questionnaire

(Circle One)

1. Age: 65-70 71-80 81-90 91 and over
2. Gender: M F
3. Marital Status Married Widow Divorce Separated
4. Ethnicity Caucasian African Amer. Hispanic Asian Other
5. Living Arrangements Alone Family Partner (wife/husband/friend)
6. Education Grade school High School Grad. College Trade
7. Annual Income 10,000- 25,000 26,000- 41,000 42,000-57,000 Over
8. Health Insurance Medicare Medicare+Private Medicare+Medicaid

Appendix E: Medication History (may use back for more space)

1. Number of Prescribed medications per day _____.
2. List medications by name, what they are for, and how long you have been on each

Name medication	What is it for	Length taken
_____	_____	_____
_____	_____	_____
_____	_____	_____

3. Herbs, OTC, Vitamins, Alternative medications.

Name	Taken how long	What is it for
_____	_____	_____
_____	_____	_____
_____	_____	_____

4. Number of prescribers and list of specialty (**Circle all that apply**)

Heart Dr. (Cardiology) Y/N (Yes/No); General practitioners (Internal Medicine) Y/N; Dr. for elderly (Gerontology) Y/N; Head Dr. (Neurologist) Y/N; Dr. for Depression and sadness (Psychiatrist) Y/N; Special Nurse Y/N; Other: Name _____

5. How much is spent monthly on prescription medication

Co-pay _____ Out of pocket _____ Insurance/Medicare. _____

6. How many times, within the last 12 months have you had to go to the hospital, doctor, or clinic because you were having trouble with your medications and what kinds of trouble were you having? _____

7. Do you feel that all your medical problems are being taken care of with the correct medication; right medicine and right amount? Explain no answer. Y/N

Appendix F: Letter to Participants

Dear Study Participant;

Thank you so much for meeting with me and telling me of your experiences taking multiple medications everyday (polypharmacy) and how these experiences impact your everyday lives (activities, relationships, health, well-being, etc.--in other words, your 'life-world'). You also shared ways that healthcare providers might be more helpful in this area.

I have met with 20 individuals, like yourself, who are experiencing polypharmacy. I am now summarizing what you have told me. Please read the following descriptions of the meaning that taking multiple medications everyday has for you. Make additional comments. Let me know if "I got the story straight"! You are my experts in this study. Your voices must be heard in this study.

I have left room for your comments and enclosed a self-addressed envelope for you to return your comments to me. Feel free to write directly on this paper. Thank you again for your time.

Polypharmacy (taking more than 4 medications everyday)

1. means that I often put complete trust in my doctor to prescribe the right medicine for me;
2. means that I often don't ask my doctor questions about my medicine; he knows best and he has little time to spare to teach me.
3. means that my everyday world is structured by the way I remember to take the right medicine at the right time
4. means I must be disciplined so I remember to take my medicine; I must figure out ways to remember, having to constantly remind myself
5. means I must listen carefully to my body—so I 'hear' side effects of the medicine such as feeling dizzy, goofy, strange,, not really myself; I must pay attention to my body
6. means my health is dependent mostly on the pills I take
7. means most doctors don't discuss other alternatives [rather than medicine] with me

8. means the pills keep my body running smoothly [blood pressure, thyroid, cholesterol, bones]
9. means putting trust in medicines sometimes without knowing what they do; having faith that the drugs are good for me
10. means often not being heard or understood by doctors and others when I believe I'm having a bad reaction to a medication; sometimes being laughed at
11. means I must take responsibility for my health—because often others don't care
12. means being ordered to take the medicine and not feeling free to question the doctor
13. means sometimes NOT taking certain medicine because I know it's not good for me and I don't tell anyone.
14. means sometimes the drugs betray my body and become my enemy
15. means taking pills the rest of my life
16. means knowing that I am aging, that I have been through a lot, and I'm doing OK
17. means that I learn a lot by comparing myself to others who are aging and taking many medications and listening to the experiences of others like me
18. "Living Polypharmacy"---living with a medication regimen everyday—is like living other parts of my life—like when I was working
 - a. As an engineer, I feel I am very organized and logical in my everyday life so I organize my medicine the same way—
 - b. As a military person I'm disciplined to not question authority and take orders—so I take orders from my doctor the same way
 - c. Please feel free to add comments about how your past may be influencing how you deal with your medication and health today....
19. means trying to understand medication plans with difficult language
20. means learning about going to the internet for information, getting medicine by mail, trying generic medicines, figuring out how to get refills before the bottle runs out, learning the system

I would make these recommendations to healthcare providers who care for me:

1. try to prescribe fewer medicines
2. listen to me when I tell you about side effects of medicines
3. teach me in a way I can understand; give me written information
4. tell me about alternative ways to take care of myself such as lifestyle changes
5. remember just because I'm older doesn't mean I'm not willing to change
6. remember just because I'm older doesn't mean I can't understand information about my condition and my medicine
7. don't laugh off my concerns
8. don't run off before I ask my questions
9. let me know exactly what the medication is for, what it's suppose to do, what it's not suppose to do, and what might happen, such as excessive coughing, sleeping disturbances, excessive sweating, etc.
10. look at me when you talk to me, let me know you really care.

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VITA

Eugenia Martha Ybanez-Blomstrom (Ginger) was born to Jose and Jesusa Ybanez in George West, Texas on December 9, 1939. Mrs. Ybanez-Blomstrom, after graduating from George West High School, attended the University of Houston as biology major. She was awarded a diploma in nursing after graduating from Hermann Hospital School of Nursing. While attending nursing school, she met and married David B. Blomstrom, CPA, FFP. They had three children: Deborah Beth Volek, a Physical Therapist, Denise deceased at age 22, and David B. Blomstrom Jr., MD.

Mrs. Ybanez-Blomstrom worked as a Registered Nurse at Harris County Hospital District in the Emergency Department for over ten years while furthering her education and earning a bachelors degree in nursing from the University of Texas Medical Branch at Galveston. Her nursing career has included positions in ICU/CCU, administration, education, risk management, infection control, and psychiatry. She completed her master's degree from University of Texas Health Science Center at Houston while working full-time. She has been a Clinical Nurse Specialist since 1995 and holds the position of Assistant Professor with the University of Houston School of Nursing-Victoria, TX in their undergraduate program. Ginger is also a consultant in a private psychiatric health care practice.

Mrs. Ybanez-Blomstrom received grant funding to develop and manage a successful "Baby Think it Over" Program in the Fort Bend area. The purpose of this educational program was to address teen pregnancy in the community. She also conducted Parenting Skills Classes. Ginger extends her professional practice internationally as she conducts missionary work in Bulgaria, Mexico, Romania, China, and Nepal. Other activities include theater and the arts, and participation in the University Of Houston Alumni Association. She is currently on the Baptist General Convention of Texas Executive Board.

Mrs. Ybanez-Blomstrom is active in the following professional organizations and honor societies: The American Academy of Nurse Practitioners, Texas Nurse Practitioners, Texas Clinical Nurse Specialist Legislative/Regulatory Committee, Texas Nurses Association, Coalition for Nurses in Advanced Practice (CNAP) Society, Sigma Theta Tau International Honor Society of Nursing-Alpha Delta Chapter, and the Southern Nursing Research Society.

Education

R. N. Diploma, Hermann Hospital, Houston, Texas - 1971
B.S.N., University of Texas Medical Branch School at Galveston, Texas -1987
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Summary of Dissertation

Thirteen percent of the population in the United States is 65 years of age and older and these older adults utilize 30% of all prescribed medications and 40% of all over-the-counter medications sold. Most research addressing the concurrent prescription of multiple medications (polypharmacy) is related to the pharmacological side effects and physiological and psychological consequences of taking multiple medications everyday. Few researchers have studied the lived experience of polypharmacy from the perspective of the elder taking the medication. This topic is significant to nursing as nurses are involved at all levels of the medication process: administering the medication, prescribing, assessing efficacy, listening to patient's concerns, and responding to related educational and ethical issues.

The purpose of this Husserlian phenomenological study was to explore the experience of living polypharmacy from the perspective of the community dwelling elder. The research questions for this study were: What are the common essences in experiencing the meaning of living polypharmacy in the life-world of the community dwelling elder? What impact does taking multiple medications have on the quality of life in the life-world of the older adult? What impact does Medicare Part D (New Drug Plan) have on "living polypharmacy"? What do community dwelling elders want healthcare professionals to know about living polypharmacy everyday?

A purposive sample of 20 community dwelling senior adults consuming at least four medications daily for 30 days prior to the study were asked open-ended questions in tape recorded interviews, which were transcribed verbatim. Colaizzi's (1978) procedural stages were followed for the interpretive analysis and rigor was addressed using Lincoln & Guba's (1985) criteria for trustworthiness. The 12 emergent themes were integrated into three overarching topical areas that are relevant and essential to an expanded perspective of living polypharmacy: collaborating and co-creating, communicating, and caring. Implications for the thematic results of this study include a revised definition of polypharmacy based on the emergent essential structure of the phenomenon, an increased understanding of the multidimensionality of the phenomenon, living polypharmacy, and the initial conceptualization of an educational program that addresses polypharmacy through the human perspective, a Life-World Directed Medication Management Model (MMM). This model will incorporate a patient history that includes meaning, past experiences and occupation permitting health care professionals the opportunity to couch medication instruction within a familiar context, thus addressing issues of adherence, accountability, and respect for individual participation in medication management.