

GRANT, ERNEST J., Ph.D. Self- Reported Reasons for Acting or Not Acting on Safety Recommendations Taken by Older Black and White Men Who Reside in North Carolina. (2015)

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The purpose of this study was to explore and examine the self- reported reasons for acting or not acting on safety recommendations taken by older Black and White men who had sustained a prior burn injury. Additional purposes were to explore how culture influences burn prevention behaviors and attitudes towards behavioral change in this population.

A qualitative inquiry using four domains of Leininger's Culture of Care Model was used to interview sixteen older men (8 Black & 8 White) to explore and examine their self-reported reasons for acting or not acting on safety recommendations after sustaining a burn injury. The majority of the participants (6 Black & 6 White) reported feelings of anxiety, mental anguish and hesitancy being around fire regardless of how their injury may have occurred. Respondents worked through their apprehension by forcing themselves to be more cautious when grilling, cooking or lighting fires, but still continued unsafe behavior. The view of safety behaviors and how other men may view such behaviors differed by race.

Additional purposes were to explore how culture influences burn prevention behaviors and attitudes towards behavioral change. Four primary themes emerged that reflected cultural influence: (1) emotional "workarounds" with intermittent reinforcement and/or transference; (2) domino effect; (3) poverty may contribute to an individual taking more personal risks regarding safety and (4) lack of awareness may pose increased risks.

SELF-REPORTED REASONS FOR ACTING OR NOT ACTING ON SAFETY
RECOMMENDATIONS TAKEN BY OLDER BLACK AND
WHITE MEN WHO RESIDE IN
NORTH CAROLINA

by

Ernest J. Grant

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Approved by

Committee Chair

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To my mother, family, friends and especially Jim whose love
and devotion has always inspired me.
Thank you for your love, support and continual encouragement.

APPROVAL PAGE

This dissertation written by ERNEST J. GRANT has been approved by the following committee of the Faculty of The Graduate School at The University of North Carolina at Greensboro.

Committee Chair

Anita S. Tesh

Committee Members

Beth Barba

Jie Hu

Susan Letvak

Carol W. Runyan

Date of Acceptance by Committee

Date of Final Oral Examination

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CHAPTER I

INTRODUCTION

Description of the Problem

On average, 45,000 Americans are hospitalized each year for the treatment of a burn injury. This number also includes the approximately 25,000 individuals whose burns are so significant that they required treatment at one of the 132 designated burn care facilities in the United States (American Burn Association, 2014; Grant, 2014a). Rani and Schwacha (2012) noted that for older adults, flame and scald burns or scalds alone are the major causes for burns, most commonly occurring at home, especially in the kitchen or bathroom. Older adults (aged 50 and higher) are 33.5% of the U.S. population (U.S. Census Bureau, 2012) but they accounted for 49.5% of the burn cases admitted to U.S. burn centers during the years of 2004-2013 (American Burn Association, 2014). Thus, older adults suffer serious burns at a disproportionately high rate than younger adults.

Together, older Black and White men (aged 50 years and higher) accounted for 23.4% of burns admitted during this same time period (American Burn Association, 2014). Black men aged 50 and older account for 1.5 % of the U. S. population and 15.3% of all burn cases. Likewise, White men aged 50 and older make up 12.5 % of the U.S. population and accounted for approximately 8.1% of all burn cases during this ten year period (American Burn Association, 2014; U. S. Census Bureau, 2012). Bishai and

Lee (2010) noted that the difference in burn rates between older Black men and older White men increases with age. Thus, older Black men suffer burn injuries disproportionately to other populations, while older White men may be burned disproportionately *less* than other populations. The reason for the disproportionate high rate of burns in Black men has not been explored, but if it were solely due to socioeconomic status, then one would expect Black females to also suffer disproportionately high rates of burns, which they do not to the same extent as Black men.

Older men, particularly Black men, are susceptible to burns. The purpose of this study was to explore and examine the self-reported reasons for acting or not acting on safety recommendations taken by older Black and White men who had sustained a burn injury of 10% or more of their total body surface area (TBSA). An additional purpose was to explore how culture influences burn prevention behaviors and attitudes towards behavioral change in this population. This study seeks to build upon and expand preliminary work by the author (Grant, 2014) which suggested that following a burn, older Black men do not adopt safety behaviors that correspond to their perceived sense of susceptibility to another burn injury, despite their awareness of recommended safety behaviors. This study seeks to expand upon that preliminary work to explore whether a similar phenomenon occurs among older White men, and to explore reasons for incongruence between safety behaviors and perceived susceptibility, and to partner with the men to identify any additional factors that might increase safety behaviors.

Participants must have sustained a burn injury within the past six months to five years. Most current burn prevention education is directed at developing or increasing an individual's sense of susceptibility to burns and knowledge of safety behaviors.

Partnering and exploring the behaviors of these men who have already sustained a burn, and thus should be in no doubt about their susceptibility, and who may be aware of recommended safety practices, may illustrate the link between perceived susceptibility and preventative behaviors. This may provide valuable new information for burn prevention efforts.

Background and Significance of the Problem

Older adults are typically defined as aged 65 or older, arbitrarily based on the definition from the Social Security Act of 1965. For this reason, data on persons between the ages of 50-65, or those over age 50 as a group, is sparse. Currently, 33.5% of the U. S. population is comprised of individuals aged 50 and older; while those aged 65 and older (over 36 million) comprise 13% (U. S. Administration on Aging, 2012a; U. S. Census Bureau, 2011; U. S. Census Bureau, 2012). Current projections estimate close to 17% of the total U. S. population will be older than 65 by the year 2020. This percentage will continue to rise annually until it peaks at more than 20% in 2050 (Grant, 2014a; Miller & Iris, 2002; Ortman, Velkoff & Hogan, 2014; Transgenerational.org, 2009; U. S. Census Bureau, 2010).

Together, Blacks and Whites aged 50 and older comprise approximately 30.7% of the total U.S. population and 31.6% of the population of North Carolina (U. S. Administration of Aging, 2012b; U. S. Census Bureau, 2012). Individually, Black men

50 and older make up 2.6 % of North Carolina's population and white men aged 50 and older make up 11.8% (U. S. Census Bureau, 2012). The older adult population may suffer numerous unintentional injuries in their homes as they continue to age. Over 50% of people over age 65 in the U. S. live with some form of assisted care, whether it is a private home, in a nursing home or other type of care facility (Riedel, 2009). According to the American Burn Association (2012b), older adults who live alone are 30% more likely to suffer an unintentional injury such as a burn than any other population group.

In addition to risks related to their environment, as they age, older adults may have or develop comorbid conditions that put them at increased risk for burn injuries or unintentional misfortunes. Older adults are sometimes perceived to be creatures of habit and may be lulled into thinking that the way they have always performed certain tasks is safe. Thus, it may be difficult for this population to fully recognize how susceptible [vulnerable] they become as they age (Giesler, 2010).

Susceptibility of the Older Adult

The older adult population is susceptible to fire or burn related injuries for a number of reasons. First, as previously mentioned older adults may be susceptible to injuries due to changes in their physical and mental capacities. Redlick et al. (2002) point out that a number of predisposing factors associated with the aging process puts the older adult population at an increased risk for a burn injury. Those factors includes: reduced reaction time (MacArthur & Moore, 1975), poorer dexterity (Cadier & Shakespeare, 1995; MacArthur & Moore, 1975), decreased mobility (Bishai & Lee, 2010; Holland & Rodie, 2011; Pressley, Barlow, Quitel & Jafri, 2007) inaccurate

assessment of risk (Manktelow, Meyer, Herzog & Peterson, 1989), impaired senses (Cadier & Shakespeare, 1995; MacArthur & Moore, 1975; Manktelow, Meyer, Herzog & Peterson, 1989), and over-medication and chronic diseases (Cadier & Shakespeare, 1995; MacArthur & Moore, 1975; Manktelow, Meyer, Herzog & Peterson, 1989). Fragile bones, vulnerable joints and other impairments, some caused by medications (prescribed and over-the-counter) may mean that older adults are more likely to suffer serious disability or even death should burns occur (Grant, 2014a). Bruck and Thomas (2008) reported that adults aged 75 and older were at especially high risk for sleeping through high pitched smoke alarm signals. Pugh (2004) pointed out that hearing loss among older Blacks, specifically, may contribute to health-related quality of life (HRQoL) deficits.

A second reason older adults are susceptible to fire or burn injury may be their inability to escape a fire. Numerous studies (c.p. Bishai & Lee, 2010; Holland & Rodie, 2011; Pressley et al, 2007) have noted that older adults with decreased mobility and dementia are at an even higher risk of death in a residential fire. Individuals who reside in multi-storied buildings have an increased (3.5-5.7 times) mortality rate compared to people who reside in single story buildings (Gulaid, Sacks & Sattin, 1989). The majority of older Americans prefer to live in their own homes, even with some modification or assistance with the tasks of daily living (Holland & Rodie, 2011). The proliferation of progressive care facilities has helped to grant this desire for older Americans who have the financial means to afford this type of care. However, due to limited land space and for economic reasons, most of these structures have been built as multi-storied dwellings. The trend towards building or modifying such structures poses an increased risk for older

residents. Although such structures are built to specific codes and regulations, inspected periodically and the staff trained to mitigate fire risks, there is still a heightened risk from fire. These risks may be due to the impairment of the residents or the facility's layout (United States Fire Administration [USFA], 2006). Such structures may also lull older residents into thinking that the structures are fire proof, while in fact evacuation of such structures is difficult during a fire.

A third reason older adults are susceptible to burn injuries may be because of prior poor health that limits their ability to recover from a burn injury. After a burn injury has occurred, impaired tissue perfusion, delayed regeneration and a decreased immune system makes the ability to heal from a burn very challenging. Decrease in interest, monetary sources and physical capacity may make it difficult for older adults to obtain and prepare meals that are nutritious. Malnutrition can contribute to a decrease in the immune system response. This decreased response may permit the overgrowth of life-threatening bacteria if older the adult were to be burned. Burns in the older adult population are considered to be very complicated healthcare problems as care requires specialized staff and medical technology that is extremely expensive. Because of poor health, suffering a devastating injury such as a burn may result in a longer hospitalization and increased risk for infection. Pham et al. (2009) pointed out that for older adults aged 65-74, hospital charges were 1.3 times higher and median charges for those aged 75 and older were twice those of the 55 to 64 age cohort. Lawrence, Zaloshnja, Miller and Jones (2009) estimated that residential fire injuries result in a total loss to society of \$18.5 billion annually. There was no age break-down attributed to this study finding.

The North Carolina Study Commission on Aging (2011) reported that 39% of the State's non-institutionalized civilian population aged 65 and older reported having at least one or more health impairments. Some examples of the impairments identified included being deaf or hard of hearing, blindness or limited eyesight (with and without glasses), poor balance, difficulty walking or climbing stairs, difficulty dressing or bathing or difficulty doing errands alone. This same study further noted that Blacks and other racial minorities are at substantially higher risk for certain chronic conditions such as heart disease, stroke, and diabetes (a major contributor to heart disease, stroke and other conditions).

Whereas diabetes is the sixth leading cause of death to North Carolina's older population, (inclusive of all ethnicities) it is a more serious threat to the Black community, being the fourth highest cause of death in Blacks of all ages in the state (N. C. Study Commission, 2011). Humans have the ability to touch and determine whether something is hot or not. This ability can also serve as a fire preventative measure. However, due to peripheral neuropathy as a result of diabetes, individuals may not be able to determine the difference between cool, cold, neutral, warm and hot; or even hold onto utensils. Because Blacks are at high risk of suffering the consequences of diabetes (peripheral neuropathy, kidney disease, coronary artery disease and blindness) they are at an even greater risk of sustaining a fire or burn related injury. Some Blacks suffer multiple amputations of lower limbs as a result of peripheral neuropathy and coronary artery disease (U.S. Department of Health and Human Services, Agency for Healthcare Research and Quality, 2012). Such conditions may make home escape difficult, if not

impossible, in the event of a fire. Black males of all ages in North Carolina have a diabetes prevalence rate of 12.3%, second only to Black females who have the highest rate of 15.0% prevalence rate (N. C. Division of Public Health, 2013).

A final reason for the increased vulnerability of the older adult is the issue of poverty. Differences in health outcomes by socioeconomic status (SES) are recognized as persistent public health problems (Edelman, 2007). Edelman also points out that in the U. S., death rates from burns in Native American and Blacks are two and three times greater than in Whites. Furthermore, burn rates and burn death rates are higher in rural areas, particularly for Blacks and Native Americans. These differences are most likely a reflection of SES, as racial differences in house fire deaths are negligible in higher income areas. Bishai and Lee (2010) point out that the Black population in the U. S. is more concentrated in urban areas and more likely to live near vacant buildings. Residential patterns can contribute to racial/ethnic disparities in fire deaths in several ways. For example, vacant buildings are known to be risk factors for house fires and smaller communities have been shown to have higher per capita rates of fire deaths.

Finally, people do not always follow health recommendations, even when aware of them. Older adults are known for “noncompliance” with a range of recommended health care practices ranging from regular daily exercise to taking blood pressure medication as ordered. In order for health education to be effective, it must be accessible, understandable, feasible to implement and convincing. Little data are available on the burn rates for or past behaviors of men who have already sustained a prior serious burn. However, this population is of interest primarily because it provides an opportunity to

explore burn susceptibility with people who *should know* they are susceptible; who are aware of the seriousness of a burn and should take the appropriate steps to protect themselves. Similarly, little is known about behavioral differences older Black and White men may undertake after a burn injury.

Statement of the Problem

Deaths from fires and burns were the seventh most common cause of unintentional injury deaths in the United States between 2003 and 2007 (CDC, 2010), and older men, especially Black men, are particularly susceptible. Analysis of fire-reporting data points to several U. S. population groups at increased risk for fire related injury or death. These include children aged four or under and adults aged 65 or older, Blacks and Native Americans (CDC, National Center for Health Statistics, 1998; Flynn, 2008), persons living in rural areas (Aherns, 2001; Flynn, 2008), the poorest Americans (Flynn, 2008; Istre, McCoy, Osborn, Barnard, & Bolton, 2001) and those living in manufactured homes or substandard housing (Parker, Sklar, Tandberg, Hauswald, & Zumwalt, 1993; Runyan, Bangdiwala, Linzer, Sacks, & Butts, 1992). These startling and grim statistics confirm an urgent need to improve prevention of fire and burn injuries in the older adult. This current study examined the self-reported safety behaviors and reasons for acting or not acting of older Black and White men who reside in North Carolina and who have sustained a burn injury within the past six months to five years. Particular emphasis was placed on exploring why prevention behaviors have not been followed, when the respondent is aware of the recommended behaviors. Little has been reported in the literature regarding burns in older Black and White men, and even less is

known regarding prevention measures taken by this group (or any group) after a burn injury has occurred. Finally, this study explored how culture influences burn prevention behaviors and attitudes towards behavioral change in this particular distinct group.

Assumptions

A key assumption of this study was that older Black and White men who had suffered a burn injury of 10% or more of the body surface area would view themselves as being susceptible to another burn injury. A second assumption is that, having experienced a prior burn injury, these individuals would have insight into and could describe reasons for their actions or decisions not to take action to mitigate the risk of reoccurrence of another burn injury. A third assumption is that by six months after the burn, the individuals will have settled into a typical pattern of behavior and safety practices, and any transient practices that occurred immediately after the burn will have abated. Finally, a fourth assumption of this study is that these men would answer questions openly, and honestly while discussing their thoughts and feelings.

Significance to Nursing

This study is particularly significant to nursing because it addresses the health and safety needs of a very vulnerable population. The nursing profession promotes health of individuals across the life span. Orem (1985) and others has described the responsibility of nurses in assisting individuals to attain and maintain their highest potential for healthful living. Leininger and McFarland, (2006) contend that wellbeing and care can best be achieved when the nurse knows and understands key elements about an individual, their cultural lifeways, beliefs, values and practices. Nurses promote health

and safety by caring for the individual with an acute or chronic illness, but also through prevention and health maintenance. Nurses have always cared for burn patients after an injury. Now, nurses need to become more proactive in promoting strategies that prevent fire and burn injuries.

Older adults are a particular challenge for nurses and their caregivers. They may lack mobility and coordination to conduct activities of daily living (ADL) in a safe manner. They may also suffer co-morbidities that make them unable to respond appropriately to an emergency. There is a need for new fire and burn prevention education specifically designed for this vulnerable population. Nurses can help reduce the incidence and severity of fire and burn injuries by reviewing precautions with the older adult and their family members. Nurses should also promote the appropriate first-aid procedures and the need to access medical care when a burn does occur, because even a small burn can become serious if not properly treated. Nurses must be able to respond to this challenge to help reduce human suffering, property loss and healthcare costs.

Specific Aims

This study proposed to collect data from older Black and White men who have sustained a burn injury in order to explore the following specific aims:

- **Specific Aim 1:** Explore and examine the self-reported reasons for acting or not acting on safety recommendations taken by older Black and White men who reside in North Carolina and who have sustained a burn injury within the past six months to five years.

- **Specific Aim 2:** Explore how culture influences burn prevention behaviors and attitudes towards behavioral change in this population.

This study sought to build upon and expand preliminary work by the author (Grant, 2014b) which suggested that following a burn, older Black men do not adopt safety behaviors that correspond to their sense of susceptibility to burn injury, despite awareness of the recommended safety behaviors. It was also hypothesized that individuals who had higher scores on the fire and burn safety knowledge test would have implemented safety behaviors, but the pilot findings did not support this. This study seeks to expand upon that preliminary work to explore reasons for incongruence between safety behaviors and perceived susceptibility, and to partner with the men to identify any additional factors that might increase safety behaviors. Since burn rates differ between older Black and White men, differences between the two groups will be examined for each aim.

Definition of Terms

The following terms are defined for the purpose of this study.

1. Older adults – community dwelling persons 50 years of age and older. Synonyms and overlapping terms include elderly and senior citizens. Older adults is operationalized as self-reported age of 50 years and older.
2. Safety behaviors – any self-reported actions (active or passive) taken by the individual to prevent the possibility of a recurrence of a burn injury.
3. County of residence – Inclusive of all 100 counties in North Carolina as self-report and burn center data base records.

4. Past Burn – 6 months to 5 years post discharge for an acute burn at a burn care facility. Past burn is operationalized by a self-report and burn center data base records.
5. Male – Identifying one-self as being of the male gender as reported on data information form and burn center data base records.
6. Black male – refers to native born Black Americans as determined by self-report and burn center data base records. African and Caribbean natives are excluded from this definition.
7. White male – refers to native born White Americans as determined by self-report and burn center data base records; may or may not reflect Hispanic heritage or ethnicity.
8. Perceived susceptibility – refers to one’s own sense of vulnerability to the recurrence of another burn injury. Perceived susceptibility is operationalized by self-report.
9. Total Body Surface Area (TBSA) – refers to the calculated percent of the body surface area burned as reported on burn center data base records.
10. Activity of daily living (ADL) – refers to the self-reported ability of the individual to perform daily living routines with or without the use of adaptive equipment or assistance.

Summary

Fire and burn safety measures should be enhanced for older adults. Burn injuries to individuals aged 50 and older occur at an alarming frequency that is disproportionate

to that of all other victims except the very young. Older Black males suffer a burn injury disproportionate to other populations. Older adults experience a higher morbidity and mortality from burn injuries than any other age group. Furthermore, the high cost of burn care mandates that nurses and other members of the health care team promote primary prevention efforts. The purposes of this investigator's research were to explore and examine the self-reported reasons for acting or not acting on safety recommendations taken by older Black and White men who reside in North Carolina and who have sustained a burn injury within the past six months to five years. An additional purpose was to explore how culture influences burn prevention behaviors and attitudes towards behavioral change in this population.

The results of this study will assist investigators to establish new fire and burn prevention models that incorporate individuals' cultural and social domain and decrease the potential for burn injury to older men.

CHAPTER II

REVIEW OF THE LITERATURE

Introduction

This study reflects the researcher's overwhelming interest to explore the self-reported reasons for acting or not acting on safety recommendations taken by older Black and White men who reside in North Carolina, who sustained a total body surface area (TBSA) burn of 10% or more within the past six months to five years. Another aspect of this study was to explore why prevention behaviors were or were not followed by this population, when the respondent is aware of the recommended safety behaviors. A review of nursing and related literature revealed that much has been published regarding burn injuries in the older adult population, and the need for prevention is well documented. A great deal of burn prevention education directed towards older adults is aimed at increasing their sense of susceptibility to burns or teaching them safety behaviors. Exploring the behaviors of older adult men who have already sustained a burn, and thus should be in no doubt about their susceptibility, may illustrate the link between perceived susceptibility and preventative behaviors. This chapter highlights characteristics of the older adult that affect their risk for fire and burn injury. A description of fire and burn prevention programs specific to older adults will be discussed. The Theory of Culture Care Model will be explained and the conceptual

framework used for this study described. Finally, characteristics associated with male behavior and compliance will be discussed.

Characteristics of Older Adults

Today, as adults live longer, there is a growing emphasis on extending not just years of life, but years of quality life. Living longer may result in marital, family and lifeway pattern changes. One of the first noted changes is the definition of older adults. In recent years, researchers have divided older adulthood into three general groups: "young old" (65-74), "old old" (75-84), and the "oldest old" (85 and older) (Bosak, 2014); while some studies, (Schoenborn & Heyman, 2009) have defined older adults as individuals aged 55-64 years, 65-74 years and 75-84 years and 85 years and older. Roebuck (1979) noted that as far back as 1875, in Britain, the Friendly Societies Act enacted the definition of old age as, "any age after 50." It wasn't until the Social Security Act of 1935 was signed into law that old age (defined for administrative purposes as the attainment of age 65) became the criterion for eligibility to participate in several important programs at the federal level (Mann, 2013).

Regardless of age, older adults have various milestones as they transition from one age group to the next. For example, adults in the age group 55-64, although approaching retirement, are usually still working; some are still engaged in raising families, and some are beginning to experience chronic health problems typical of older adults (Schoenborn & Heyman, 2009). Typically, this age group is generally happier, healthier and financially better off than previous generations in this age group (Black, 1994).

According to Erickson (1968) adults in the middle age group (35 to 65) and late adult group (65 to death) are usually preparing for the middle and last stages which involves much reflection. As older adults, some can look back with a feeling of integrity — that is, contentment and fulfillment, having led a meaningful life and valuable contribution to society. Others may have a sense of despair during this stage, reflecting upon their experiences and failures. They may fear death as they struggle to find a purpose to their lives, wondering “What was the point of life? Was it worth it?”

The oldest old (85 and older) are largely widowed (70%) and mostly women (70%) (Bosak, 2014). This age group is growing faster than any other segment of the population. The oldest old have the highest potential for functional disabilities. Over 70% of the oldest old have some limitations in one or more activities of daily living. Yet, nearly 45% still have relatively good health and need little assistance in preparing meals, shopping, managing money, or doing light housework. A quarter (25%) do need some help with certain activities of daily living, while 30% need substantial help (Bosak, 2014).

A survey conducted by the Pew Research Center (2009) noted that 18-29 year old respondents believed that the average person became old at age 60. Middle-aged respondents put the threshold closer to 70, and respondents aged 65 and above stated that the average person does not become old until turning 74. Factors such as ill genetics and poverty may make an individual appear to be “old” at a younger age. Additionally, some individuals may feel younger than their actual chronological age.

Davidge and Fish (2008) noted that the definition of older adults has been loosely interpreted in the burn literature, describing ages ranging from 45 to 75 years. They noted that with the steady growth of the older adult population in Western countries, issues surrounding burn prevention and treatment among older individuals have become of paramount importance.

Regardless of the attitude, perception and expectation of older adults, measures must be taken by themselves and by healthcare providers to ensure their safety against the potential of a burn injury.

Demographics

The older adult population is growing. That growth has already begun to show its effects in a number of ways, especially in social and healthcare support systems at the local, state and national levels. Currently, women comprise the majority of older Americans, and this predominance increases with advancing age. The primary reason for this phenomenon is simply that women live longer than men. The period of 1990-2007 also has seen reduced death rates for the population aged 65-84, especially for men – by 41.6% for men aged 65-74 and by 29.5% for men aged 75-84. Life expectancy at age 65 increased by only 2.5 years between 1900 and 1960, but has increased by 4.2 years from 1960 to 2007 (U. S. Administration on Aging, [USAA] 2013). As men live longer and suffer the consequences of the aging process (decreased sight, mobility and reaction time) the potential for unintentional injuries in the home may become an ever prevalent problem for this population. In 2011, 13% of the total population of North Carolina was

65 and older. The same population is projected to grow to 19.6% of the state's population by 2031 (N. C. Division of Health and Human Services, 2012).

Many seniors who continue to reside in their own homes may not have sufficient financial means for home maintenance. The average monthly Social Security benefit for a retired worker in North Carolina is approximately \$1,133.00 (Social Security Administration, 2012). This meager amount may keep some older adults from falling into deep poverty; but it may not provide them with sufficient income to do proper home maintenance. As a result, older homes (in which seniors are likely to reside) in North Carolina are very susceptible to total destruction from a structure fire. According to data from the National Fire Incident Reporting System (NFIRS), 34% of people who died in residential structure fires and 14% of people who were injured in 2002 were age 65 and older (U. S. Fire Administration/National Fire Data Center, 2006). North Carolina's residential fire mortality rates consistently exceed those for the rest of the United States (CDC, 2010). North Carolina experienced 522 residential fire-related fatalities, an age adjusted rate of 1.20 per 100,000, between 2003 and 2007 (CDC, 2010).

A study reported by Davidge and Fish (2008) noted inadequate safety equipment in the homes of 50% of the older adults and 30% had tap water temperatures in excess of 60° C (140°F). A study by Schwarz, Grisso, Miles, Holmes, and Sutton (1993) as part of an injury prevention program in an urban African American community discovered that a majority of the intervention homes continued to have home hazards in need of repair 12 months after a home inspection and safety recommendations. Runyan et al. (2005) noted that the home is the principal environment in which burns and fire-related injuries occur.

They reported that from 1992 to 1999, 90% of the fatal fire/burn injuries and 57% of the injuries requiring emergency department visits took place in a residential environment.

In addition to risks related to their environment, older adults may have or develop comorbid conditions that put them at increased risk for burn injuries or other unintentional injuries. Older adults are sometimes perceived to be creatures of habit, and it may be difficult for this population to fully recognize how susceptible they become as they age (Giesler, 2010).

Marital Status

According to the USAA (2013) in 2013, older men were much more likely to be married than older women--72% of men, 42% of women. Widows accounted for 41% of all older women in 2009. There were over four times as many widows (8.9 million) as widowers (2.1 million). Divorced and separated (including married/spouse absent) older persons represented only 11.9% of all older persons in 2009. However, this percentage has increased since 1980, when approximately 5.3% of the older population were divorced or separated/spouse absent. There is no available data that link marital status and burns. The National Alliance for Caregiving and The American Association of Retired Persons (AARP), (2009) conducted a survey that revealed 25% of the spouses or partners of older adults were likely to provide their care. The survey also pointed out that the average age of caregivers was between 50-64 years (National Alliance for Caregiving and AARP, 2009). Many caregivers are themselves older. The Administration on Aging (2012) reports that caregivers for individuals aged 65 and older has an average age of 63 years and one third of those individuals are themselves in fair to poor health. Thus, if an

older male were to sustain a burn injury, his spouse may not be healthy enough to provide the care necessary for healing or help in an evacuation.

Living Arrangements

According to the USAA (2013) over half (57%) of the older non-institutionalized Americans lived with their spouses in 2013. Older men made up 71% of that population. For older adults in general, the proportion living with their spouses decreased with age, especially for women. Only 32% of women 75+ years old lived with a spouse. The number of older men who lived alone during this same period was 3.7 million or 19% of the identified 12.1 million older adults. The proportion living alone increases with advanced age. Among women aged 75 and over, for example, almost half (45%) lived alone. Divorced and separated (including married/spouse absent) older persons represented only 12% of all older persons in 2012. However, this percentage has increased since 1980, when approximately 5.3% of the older population were divorced or separated/spouse absent (USAA, 2012c). Living alone makes older adults 30% more likely to suffer unintentional injuries such as burns than any other population (American Burn Association, 2012b) and they may not have access to assistance if burned.

The state of North Carolina is located in an area of the Southeastern United States that is known as the “burn belt,” meaning that a disproportionate number of its residents are at a higher risk of fire related deaths than many other states in the country. In 2010, older Blacks (23%) were significantly more likely than Whites (13%) to live in a multi-generational family household. Among Blacks, 48% are in two generation households, 40% are in three-generation households and 13% are in skipped generation households.

This may suggest a lower risk of fire related deaths as fire and life safety education may be provided and adhered to by younger family members. Among Whites living in multi-generational households, 64% are in two adult-generation households, 28% are in three generation households and 7% are in skipped-generation households (Pew Research Center, 2010). In 2008, 54% of older Black men in North Carolina shared their homes with their spouses and 30% lived alone (Administration on Aging, 2012b). Comparable data for White men are not available.

Income

The median income of older persons in 2012 was \$27,612 for males and \$16,040 for females. From 2011 to 2012, median money income (after adjusting for inflation) of all households headed by older people rose 0.1% but this was not statistically significant (USAA, 2013). The major sources of income as reported by older persons in 2011 were Social Security (reported by 86% of older persons), income from assets (reported by 52%), private pensions (reported by 27%), government employee pensions (reported by 15%), and earnings (reported by 28%). In 2011, Social Security benefits accounted for 36% of the aggregate income of the older population. The bulk of the remainder consisted of earnings (32%), asset income (11%), and pensions (18%). Social Security constituted 90% or more of the income received by 35% of beneficiaries (22% of married couples and 45% of non-married beneficiaries) (U. S. Census Bureau, 2013). Older adults with low or limited income are less likely to have advanced early warning devices such as a working smoke and CO alarms (Shields, et al., 2013) and with less available income, they may not be able to afford the necessary resources and materials to make the

necessary home improvement that may reduce their risk for a fire or burn injury (United States Fire Administration, 2006). As a result, for individuals with limited income, safety may not be a priority. According to an American Association of Retired Persons, fact sheet (Wu, 2011) persons aged 55-64 had the largest drop in median income (4%) between 2010 and 2011. Wu further reported that the median income for older Black families was \$22,738, compared to \$34,113 for older White families. About 10 % of North Carolina's older adult population lives at or below the federal poverty level (\$10,788.00). One in three older North Carolinians rely on Social Security as their only source of income (AARP, 2011). Increasing financial challenges such as housing costs, health care, fuel and utility expenses may threaten the economic security of older North Carolinians so much that they may not have taken measures to meet their basic survival needs, let alone preventative measures.

Data from the USAA (2012b), point out that the poverty rate for elderly Blacks in North Carolina (65 and older) was 20%, which is more than twice the rate for all elderly (9.7%). Limited income, as previously mentioned, may make it difficult for older Blacks in North Carolina to have discretionary income. They are also faced with the turmoil of meeting daily needs to survive and may not be able to afford a supplemental insurance plan. Thus, the only insurance they (and many seniors) have to rely upon is Medicare or Medicaid. Finding healthcare providers who are willing to treat Medicare and Medicaid patients may prove to be difficult because Medicare and Medicaid (as well as some private HMOs) may only provide partial payment for healthcare visits. Individuals pay

the remainder of the expense out of pocket if they have the means to do so, or providers absorb the remaining costs.

The lack of safety education programs reaching this at-risk population may also contribute to their high vulnerability. Individuals who have lower SES have less discretionary income and generally less education. Appy (2005) pointed out that as a result of their low literacy skills, adults may put themselves (and their families) in danger because of their inability to receive and comprehend basic fire prevention and safety messages. They may also fail to read and comprehend how to use essential fire suppression devices such as a fire extinguisher. Their homes are less likely to have working smoke alarms. Furthermore, poorer households are less likely to have safe heating systems, code compliant electrical services and fire safety security measures (Bishai & Lee, 2010). The fire and burn safety problems facing older adults and the larger society are assuming immense proportions. Because of the risk of severe injury or death if the older adult were to be burned, prevention of burn injury should be the ultimate goal.

Burns in Older Adults

A review of literature revealed numerous studies that have explored burn injuries in the older adult population. These studies have examined a variety of topics such as predicting survivability (Wibbenmeyer et al., 2001); potential burn risk factors and prevention strategies (Redlick, et al., 2002); analysis of factors affecting burn mortality (Lionelli, Pickus, Beckum, DeCoursey & Korentager, 2005); long-term functional outcomes after a burn injury (Palmieri et al., 2012); elderly discharged home from

emergency rooms with minor burns (Ehrlich, Kathpalia, Boyarsky, Schechter & Bijur, 2004) and the effectiveness of prevention campaigns (Grant, 1993; Tan et al., 2004). Such studies have helped health care providers comprehend the special care needs of this vulnerable population and contributed to prevention-focused campaigns. However, the majority of these studies used non-probability samples or were conducted at and reported by individual facilities, making their results non-generalizable or representative of all older adult burns (Pham, et al., 2009). Various factors such as burn etiology, size, patterns or management strategies were not standardized and therefore findings may only be relevant to a few similar facilities, making meta-analysis of such studies infeasible to perform. National data collected via the American Burn Association's repository provides a much broader and more accurate picture of severe burns (resulting in admission) in the older adult population. The repository consists of de-identified data voluntarily contributed by 96 hospitals from 35 states, and the District of Columbia, and totals 191,848 records. Seventy-seven hospitals contributed more than 500 cases. Data are not dominated by any single center and represent a reasonable cross section of U.S. hospitals (American Burn Association, 2012). The repository began collecting data in 1987.

Ten years of burn injury data (2002-2012) submitted to the American Burn Association's National Burn Repository support the premise that as the older adult population grows the risk of sustaining burn injuries increases comparatively. These data also indicate that this population suffers a higher morbidity and mortality rate than younger populations. Several studies using repository data have focused on burns in the

older adult. Unlike single facility findings, these studies have provided a more exact interpretation of burns in the older adult.

For instance, Pruitt, Wolf and Mason (2012) reported a 7-year review of patients admitted to one burn center that revealed 221 of 1557 (11%) patients admitted were 59 years or older that appears to be reflective of national data. The majority of these burns (44%) occurred in older women, but may be reflective of women living longer than men resulting in a disproportionate higher population of older adult females. Two thirds of the injuries reported in the above cases were caused by flames or explosion, 20% by scalds, 6% by electricity, 2% by chemicals and 6% by “other causes” (Pruitt, Wolf & Mason, 2012).

Repository data revealed that for older adults, fire/flame injuries (43%) were the most common cause of injury. Other burn etiologies by prevalence were: scalds (34%), contact (9%), electrical (4%), chemical (3%) and other (7%), (National Burn Repository Data, 2014; Pham, et al., 2009; Rani & Schwacha, 2012). Older males sustained burns at a ratio of 1.4:1 in comparison to the general population. Because they live longer, females were more represented in burns in the oldest age groups (National Burn Repository Data, 2014). Mortality ratios are noted to increase as the group age increased. Pham et al. (2009) noted that by using logistic regression on repository data, the adjusted odds ratio for mortality was 2.3 (95% CI 2.1 – 2.7) in the 65 to 74 age group, and 5.4 (95% CI 4.8 – 6.1) in the oldest group when compared to the 55-64 age group.

The majority of admitted burn injuries that befall older adults occur in the home setting. Repository data (2014) revealed that 72% of all burn injuries occurred in the

home; 9% were occupational related; 5% street/highway; 5% recreational/sport and 9% other. A number of patients had one or more pre-existing medical conditions that may have also contributed to their injuries. One such example may be an individual who has diabetic peripheral neuropathy. Because of the lack of sensation, the older adult may have difficulty performing ADLs such as cooking. The individual may grab the handle of a hot sauce pan without using an oven mitt and because of their reduced reaction time, not realize he had sustained a burn until after it had transpired.

Pruitt et al. (2012) also noted in their report that in 57% of older adult patients, their judgment and/or mobility was impaired. Ten percent (10%) of patients tested positive for ethanol and 29% for other drugs by toxicology screening. National burn repository data do not reflect whether information regarding intoxicating agents such as alcohol, drugs, prescribed or over-the-counter medications has been collected. However, repository data reflect other etiological events that may have contributed to the older adults sustaining a burn such as clothing ignition, bath/shower scalds, stoves and ovens and health status (Barillo & Goode, 1996; Lionelli et al., 2005; Lundgren et al., 2009; Rossignol, Locke, Boyle & Burke, 1985). Pham (2012) also points out that the type of residence (mobile home, rental properties) and exposures (smoking, alcohol impairment) and burning brush, trash or other debris are also strongly associated with burns in the older adult population. Although the repository data only reflect burns serious enough to result in hospital admission, it seems likely that a similar pattern of etiology exists for more minor burns as well.

After examining burn repository data, Davidge and Fish (2008) reported that the vast majority of burn injuries among older adults occurred in the home setting (61.5%) specifically while cooking in the kitchen or in the bathroom. They further noted that flame (32.2%) and scald injuries (15.7%) were the most common cause of major burns among older adults. Other forms of burn injuries (contact, electrical and chemical) were less frequently noted in the older adult population. All of these reports may not be accurate, as clothing ignition could occur as the result of outdoor grilling, indoor cooking or cigarette ash landing on clothing. The data may be entered only as clothing ignition without specific detail regarding the circumstances. Also, the report of various burn incidents may depend upon the region in which data were gathered (Pham, 2012). For instance, scalds may be more prominent in the southeastern portion of the U.S. and flame burns more prominent in the mid-west.

Burns in Older Black Men

Blacks (along with other minority groups) in general have been singled out as a high risk population for fire and burn related injury and death (Bishal & Lee, 2010; CDC, 2010; Edelman, 2007; Flynn, 2010; Pruitt et al., 2012). Edelman (2007) noted that in the U.S., death rates from burns in Native Americans and Blacks are two and three times greater than in Whites. Bishai and Lee (2010) noted that when Blacks aged 55 and older were compared with older whites, the burn rate ratio was 3.14 (95% CI 2.98, 3.31). They further noted that the degree to which burn/fire death rates for both Blacks and Native American males exceeded White males became progressively larger with age until the gap was largest after age 75. Pruitt et al. (2012) noted that a review of repository data for

the ten year period of 2001-2010, revealed that 60% of the cases were White, 19% Black, 15% Hispanic, 2% Asian and 1% Native Americans. They further state that the 19.0 % Black registrants exceeds by 53% the 12.33% of Blacks that make up the U.S. Population. As previously noted, Black men aged 50 and older account for 1.5 % of the U. S. population and 15.3% of all burn cases (American Burn Association burn repository data, 2014). However, available data do not differentiate the specific etiology of burns in older Black men. It is safe to assume that the same causes of burns in the general population may also be prevalent in burns in older Black men. Pham (2012) noted that older men in general are disproportionately injured in the residential setting because of the use of fuels as an accelerant.

Burns in Older White Men

Multiple rationales (poverty and low SES, poor or declining health and residing in a rural area) have been used to explain the increased risk for burn injury in the older adult population. White men, aged 50 and older make up 12.5 % of the U.S. population and accounted for approximately 8.1% of all burn cases during the ten year period of 2004-2013 (American Burn Association, 2014; U. S. Census Bureau, 2012). Thus, older White men suffer burns that are disproportionately less than the population in general. The reason for this disparate burn rate has not been explored. It is safe to assume that older White men may sustain a burn injury performing the same tasks as other members of the general population. As noted with burns in older Black men, Pham (2012) cited examples such as residential living, and the use of accelerants to burn trash and debris as

some reasons for burns in older men in general. Further study is warranted to explore the differences in burn rates of older White men and the population in general.

Recommendations for Safety

Numerous programs, slogans and guidelines to reduce burns have been promoted by organizations such as the American Association of Retired Persons, (AARP), the American Burn Association (ABA), the Centers for Disease Control and Prevention (CDC), the Home Safety Council and the National Fire Protection Association (NFPA). Each of these agencies has identified key strategies (safety message campaigns, outreach programs, partnerships, design engineering and public policies) to mitigate the risk of burn injuries to the older adult population. Among the most common key strategies utilized by all agencies are easy to remember safety messages such as: “reduce your hot water heater temperatures to 120° F”; “know two ways out in the event of a fire”; and “change your clock, change your batteries” (ABA, Burn Prevention Committee, 2012a). In addition to promoting messages, organizations have also advocated design engineering that promotes passive safety.

The re-design of the smoke alarm is a good example of design engineering. Older smoke alarms relied on the use of a 9-volt battery for operation and the batteries had to be changed yearly or when low. There have been numerous accounts of fatal fires or devastating burns resulting from non-replacement of the battery when low or its removal for use in a toy or other devices. The majority of smoke alarms in use today has been redesigned to be tamper proof and requires a flat unusual-sized lithium battery that lasts an average of ten years. The redesigned smoke alarm requires little or no maintenance on

the part of the homeowner, but continues to provide 24/7 home protection for a period of approximately ten years. If the appliance has been broken into, the unusual size and shape of the battery prevents use in toys or tools.

Fire and life safety organizations have also been advocates of specific fire and burn safety education programs. For example, the Home Safety Council recognized that adults with low literacy skills were at increased danger of an unintentional injury because of their failure to comprehend basic fire prevention and protection messages. The agency partnered with literacy providers with local fire departments to create easy-to-read safety education materials designed specifically for adult low-level readers (Appy, 2005). The end results were effective safety education programs and smoke alarm installation in homes designated as high-risk. The NFPA and the CDC partnered to create a fire and fall safety program called “Remembering When[®]” with the goal of helping older adults live safely in their homes for as long as possible (Gamache, 2001). This program is available throughout North America. Gamache (2001) further noted that although this program was developed specifically for use in low-income communities, fire service personnel reported that it is well received in middle-income communities as well. The program not only includes helpful tips that may prevent a fire or fall situation, but also causes older adults to focus on their vulnerability to such situations (Gamache, 2001).

Finally, organizations have advocated for public policy changes that promote fire and burn safety. The passage of local, state and national safety legislation has reduced numerous fire and burn injuries. A good example of a public health policy is the recent adoption of fire safe cigarette legislation by all fifty states. Although this endeavor took a

number of years to achieve, studies have already begun to show a trend reduction in cigarette-related residential fires and burns (Hall, 2013).

As illustrated above, there are numerous programs and strategies available to promote fire and burn safety to individuals viewed as high-risk. However, as stated previously, individuals must see themselves as being susceptible to or at risk for a burn injury in order to make a change. Sometimes they do not see this potential until it is too late, or it has happened to an acquaintance. Once the older adult does perceive him/herself as being susceptible, he must wrestle with social, psychological and financial barriers to changing his behavior (Holland & Rodie, 2011). Pilot work done by this researcher (Grant, 2014b) suggests that older Black men in North Carolina may be well aware of their vulnerability but still not take recommended actions that could prevent burn injuries. The issue has not been explored in older White men. It is possible that men, older men or older Black men specifically, may experience unique barriers to behavior change in this area.

It has been established that older adults over the age of 50 make up approximately 33.5 % of the total population of the U.S. and that those numbers are expected to increase over the next thirty years (Miller et al, 2002; Riedel, 2009; U.S. Census, 2012). They accounted for 49.5% of the burn cases admitted to U.S. burn centers during the years of 2004-2013 (American Burn Association, 2014). It has also been established that compared to the rest of the U. S. population, older adults who live alone are 30% more likely to suffer unintentional injuries. The aging process, comorbidities and limited financial resources may increase the potential for older adults to suffer a fire or burn-

related injury. All these factors and more demonstrate a population that is highly in need of behavior change, protection and safety enhancement of their environment. A major focus for intervention programs aimed at promoting protection and awareness to this group is to get them to see how vulnerable they are to such devastating injuries and getting them to recognize the perceived benefits of taking action. Many programs rely on some form of the Health Belief Model (HBM) to assist with this endeavor.

Pilot Study Results

A pilot study conducted by this researcher examined the self-reported safety behaviors of older Black men after a burn injury. For the pilot study, safety behaviors were defined as any self-reported actions (active or passive) taken by the individual to prevent the possibility of a recurrence of a burn injury. The instruments utilized in the pilot study were designed to determine: (1) a verbal report of behavior change; (2) an assessment of participant's perceived susceptibility to burns; (3) scores on an investigator-designed test, constructed to assess the respondent's awareness of fire and burn safety measures and (4) a brief home inspection of smoke alarm(s) and hot water temperature. The result of the pilot study indicated that six participants recognized that they experienced anxiety, "paranoia" and "mental anguish" related to perceived susceptibility to burns, but reported making no safety behavior changes after sustaining a burn injury. Participants reported continuing to cook, grill, or light fires as they had always done. A test of the participants' safety knowledge reflected a strong lack regarding fire and burn safety, which may put such individuals at an increased risk for another fire or burn injury. Results of the home safety inspection revealed one hot water

temperature setting that was too high and two smoke alarms that were outdated or not connected, further confirming the lack of safety practices. Since the Health Belief Model would have predicted that these men who saw themselves as susceptible would have made changes, the preliminary work suggested that the Health Belief Model (HBM) and Orem's Self Care Model may be insufficient to explain the results. Perhaps the fact that participants understood the barriers may have prevented behavior change, despite susceptibility and perceived seriousness.

The pilot work (Grant, 2014b) had four questions that were designed to explore the perceived benefits component of the HBM and also Orem's Self-Care Model. Glanz, Rimer, and Viswanath (2008) point out that the construct of perceived benefits is a person's opinion of the value or usefulness of a new behavior in decreasing the risk of developing a disease. In response to the questions for this study, participants reported having fire suppression or notification instruments such as a fire extinguisher or smoke alarm. However, all participants reported that they do not practice fire and burn safety behaviors (fire escape plan or regular testing of the home smoke alarm) since sustaining a burn. All but one reported not encouraging family and friends to practice fire and burn safety. The rationales given ranged from "I haven't gotten around to doing that yet" to "I never thought about that until now" to "I never thought to mention that to family and friends." It should be noted that one of the participants was a wheelchair bound below-the-knee amputee.

Two questions in the pilot study were specifically designed to focus on participants' perceived barriers to enacting safety behaviors. Perceived barriers may be

defined as obstacles that the individual views as preventing adoption of new behavior. Glanz et al. (2008) noted that of all the constructs, perceived barriers are the most significant in determining behavior change. Two participants reported that they realized that they were especially more vulnerable to another burn injury because of their disabilities but they still failed to adopt safety behaviors. Four of the participants reported that as a result of their injury, they felt more confident regarding what to do in the event of a fire. However, feeling confident does not equate to actually knowing and practicing safety behaviors. For example, one individual after answering the above question also described the wrong technique for extinguishing a grease fire stating that he would put baking powder (not soda) on a grease fire.

The pilot study results have generated the specific aims of this study. One cannot help but wonder whether the reported lack of behavior change is related to the individual's culture, gender, ethnicity or cognitive ability. Is it possible that the participants (as older adults, with long histories) are lulled in to a false sense of security and do not perceive themselves as being vulnerable because of their extreme lived experience of dealing with fire and burns. Alternatively, perhaps other unknown factors may be involved. Thus, further study with a larger and more diverse subject population (older Black *and* White men) is warranted. Most importantly, a question to ask original pilot study subjects and all participants is "what would it take for you to adopt and practice safety behaviors?" The Culture of Care Model offers a framework for exploring these issues, along with previously undertaken issues to behavior change.

The Theory of Culture Care

As the U. S. and North Carolina continue to experience rapid population growth, an increasing number of individuals may seek access to health care services. Health care providers must be ready to promote health and well-being while reducing the effects of illness. They must also recognize that the individuals they are caring for are from many discrete cultural groups, but also have their own individual values and identities. A comprehensive understanding of the individual and his/her culture as espoused by the Culture Care Theory (Leininger & McFarland, 2006) is one way providers may achieve this readiness.

The Theory of Culture Care Diversity and Universality was conceptualized in the late 1950's and developed for use by the early 1990's by Dr. Madeline Leininger (Leininger, 2007). The theory is unique as it is the only nursing theory focused explicitly on culture care as the dominant domain of nursing inquiry. Leininger (2007, p. 9) describes the theory as

... a holistic, culturally based care theory that incorporates broad humanistic dimensions about people in their cultural life context. It is also unique in its incorporation of social structure factors, such as religion, politics, economics, cultural history, life span values, kinship, and philosophy of living; and geo-environmental factors as potential influencers of culture care phenomena.

The theory was created to discover the culturally based *emic* and *etic* care phenomena that are congruent or meaningful to cultures, and which influences the lifeways of people. Leininger used the terms *emic* to refer to the local, indigenous or insider's cultural knowledge and view of specific phenomena; whereas the term *etic*

refers to the outsider's or stranger's views and often health professional view and institutional knowledge of phenomena (Leininger, 1991a; Leininger, 2007; Leininger & McFarland, 2006). A nurse may use generic (*emic*) care to learn and transmit lay, indigenous, traditional, or local folk (*emic*) knowledge and practices to provide assistive, supportive, enabling, and facilitative acts for or towards others with evidence or anticipated health needs in order to improve wellbeing or to help with dying or other human conditions (Leininger & McFarland, 2002; 2006). Professional (*etic*) nursing care refers to formal and explicit cognitively learned professional care knowledge and practices obtained generally through educational institutions [usually non-generic care]. *Etic* care is taught to nurses and others to provide assistive, supportive, enabling, or facilitative acts for or to another individual or group in order to improve their health, prevent illnesses, or to help with dying or other human conditions.

Leininger and McFarland (2006) contend that if professional and generic care practices do not fit together, this might affect client/patient recovery, health and well-being and result in care that is not culturally congruent with the beliefs of the person, family, or community. To provide culturally congruent care, Leininger and McFarland (2002) assert that professionals must link and synthesize generic and professional care knowledge to benefit the client. This link is considered a bridge, when a bridge is appropriate, between the professional and folk healthcare systems (Leininger & McFarland, 2002).

In addition to the development of the Theory of Culture Care, Leininger (1991b) also developed a research method that has proven to be very useful for researchers as they attempt to understand the phenomena of culture care for vulnerable populations. Leininger's qualitative "ethnonursing" research method was created to work in conjunction with the theory (Sunrise Enabler Model) as a guide for research. Ethnonursing is the study of nursing care beliefs, values, and practices as cognitively perceived and known by a designated culture through their direct experience, beliefs, and value system (Leininger, 1979). The ethnonursing research model involves description and analysis of the lifeways of a people from the emic point of view (the viewpoint of the person being studied) with the ultimate goal of generating nursing knowledge to help those people (Zoucha, 2008). The model reflects the worldview on cultural and structure dimensions (see Figure 1). Although the model can be used across the lifespan, applications of its use among older adults has included: culturally sensitive breast cancer screening (Brown & Williams, 1994); diabetes care (Drozd, 2000); coronary heart disease prevention (Chyun, Amend, Newlin, Langerman, & Melkus (2003); and supporting the aging process (Wadensten & Carlsson, 2003). This model provides a unique perspective on exploring potential "barriers" to behavior change in a population that may already see themselves as susceptible, or be aware of the seriousness of a burn as defined by the Health Belief Model (Holland & Rodie, 2011).

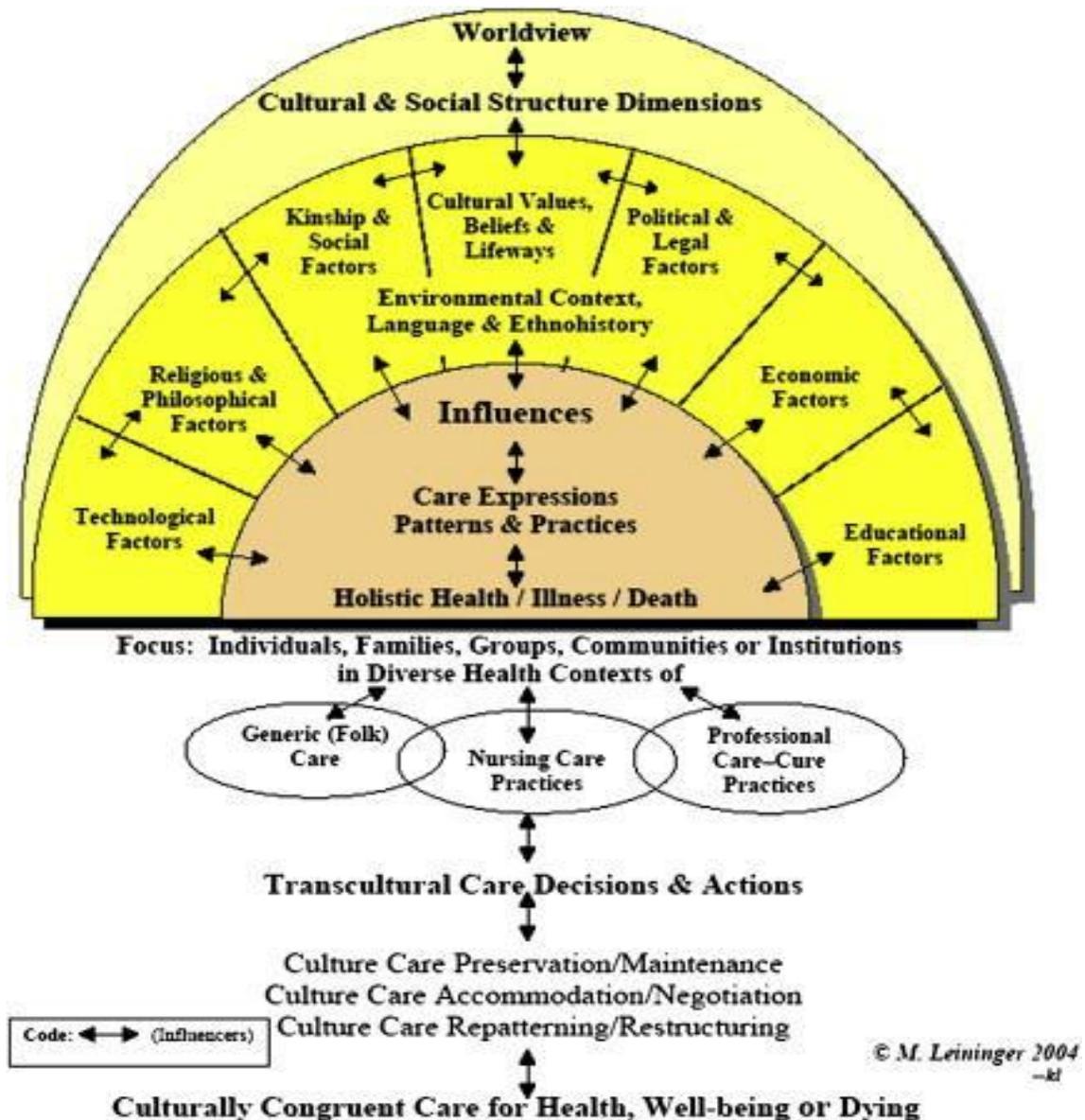


Figure 1. Leininger's Sunrise Enabler Model. Adapted from "Ethnonursing: A research method with enablers to study the theory of Culture Care." By Leininger, M. M. (1991b). NLN Publication (15-2402), 73-117. Copyright 2004 by M. M. Leininger.

Explanation and Application of the Model

The cultural and social structure dimensions include domains such as *technological, religious, philosophic, kinship, social, value and lifeway, political, legal, economic, and educational factors*. Each of the identified domains may affect the health, health care practices and wellbeing of an individual. These cultural and social factors in turn influence *environment* and *language*, wherein emphasis should be placed since this is where conditions such as the individual finds himself such as home condition, access to particular types of food and family access to transport. *Environment and language* influence the involved health systems – the folk, professional and nursing systems. The folk health system includes the traditional beliefs and practices regarding health care, while the professional health systems are those practices one learns cognitively through formal professional schools of learning. The combination of the folk health system and the professional health system meets the biological, psychosocial and cultural health needs of the patient/client (Maralit, et al., 2010).

The above factors influence the patterns and expressions of caring in relation to the health of individuals, families, groups and communities. To be able to make culturally sound nursing and self-care decisions and actions, these factors should be assessed properly and always be taken into consideration. To achieve culturally congruent care, nursing actions are to be planned in one of three modes: culture care preservation/maintenance, culture care accommodation/negotiation, or culture care re-patterning/restructuring (Maralit, et al., 2010).

Leininger's (1991b) Sunrise Enabler can be applied on the individual and community level in research on the health and social practices regarding burn prevention. Some of the social factors that should be considered are illustrated in Table 1.

Table 1

Social Factors to Consider When Applying the Leininger's (1991b) Sunrise Enabler Model to Burn Prevention

Cultural and Social Structure Dimensions	The individual's cultural environment and social support systems may be barriers or may support behavior change(s).
Technological	Lack of access to proper smoke alarms, first aid remedies and safety procedures regarding burn prevention at home will pose barriers.
Religious and Philosophical	Residents of the community are more likely to practice fire and burn safety if advocated by their religious leader. If the leader does not see prevention as a priority, it is less likely to be practiced or accepted throughout the community. A sense of fate versus self-efficacy may determine whether a burn may be viewed as bad luck, punishment or avoidable.
Kinship and Social	Prior family /cultural experience with fire and burn issues may determine whether prevention is practiced routinely or not. Negative ritualistic behaviors may prove to be detrimental to the individual and the community.
Cultural Values and Beliefs	Health may be viewed as a lesser priority; more priority may be given to greater basic needs such as earning a living, food, survival and spiritual practices.
Political and legal	Lack of policies and programs by the Federal, state and local government regarding burn prevention

	practices may pose barriers.
Economic	Lack of sufficient funds for home upkeep, repairs and modernization may pose barriers.
Educational	Low educational or literacy levels may be indicative of the inability to understand or comprehend safety messages. Lack of awareness may pose an increased risk.

Proper assessment of the cultural and social structure dimensions will help guide the nurse to effective planning and intervention. This in turn may lead to sustainable healthcare change by the individual, the family and the community at large (Maralit, et al., 2010).

Historically, clients who did not follow a health care provider’s directives have been labeled as “noncompliant.” However, the Theory of Culture Care Diversity and Universality would view such “noncompliance” as a failure of the health care provider to provide education that is culturally congruent with the beliefs of the individual, rather than a failure on the part of the client. For example, if people don’t follow burn prevention recommendations, the message may not be culturally congruent. Tripp-Reimer, Choi, Kelly and Enslein (2001, p. 13) advocate that the health care provider would make better progress "by inverting the “problem” (non-compliance) and viewing the barriers as resulting not from patients’ cultures but from the values and beliefs inherent in biomedical culture, insufficient professional training, and care system barriers." They further state that as health care providers, we have failed to adequately

address our responsibilities as practitioners for having competent knowledge and skill sets and using them effectively when working with [ethnic] clients. Applying Leininger's model to burn prevention, it is the professional responsibility of the health care provider to identify, develop and deliver burn prevention education that is congruent with the client's lifeways. Only culturally congruent care has the potential to have the sustained, desired impact.

Conceptual Framework

Despite numerous health and safety education programs built upon helping people realize their vulnerability, older adults still sustain burns in disparate numbers. Pilot work by this researcher (using Hochbaum's Health Belief Model and Orem's Self-care Model) revealed that even though older adults stated they knew they were susceptible (because of a prior burn injury) they did not see any perceived benefits that were serious enough to make them practice recommended safety behaviors. They also did not report barriers to practicing safety behaviors. This suggests that the Health Belief Model alone may not be sufficient to describe behavior in this situation. Leininger's model may be used as a method to explore barriers to action and reasons why people who see themselves as vulnerable, don't take recommended actions.

The Theory of Culture Care Diversity and Universality model guided this study. As previously mentioned, Leininger's Culture Care Model contends that if professional and generic care practices do not fit together, this might affect client/patient recovery, health and well-being and result in care or health education that is not culturally congruent with the beliefs of the person, family, or community. This is evident by the

continued rise in burn related injury in this very vulnerable population. To provide culturally congruent care, Leininger and McFarland (2002) assert that professionals must link and synthesize generic and professional care knowledge to benefit the client. This link is considered a bridge, when a bridge is appropriate, between the professional and folk healthcare systems (Leininger & McFarland, 2002). Leininger's model may be used as a method for the health care provider to embrace the lifeways of older adults and explore why people who see themselves as vulnerable, don't embrace recommended safety actions. Thus, the Culture Care Model allows explanation of situations in which individuals do not behave as the Health Belief Model would predict, and allow explanation of factors the Health Belief Model would identify as "barriers."

Characteristics Associated with Adult Male Behavior

In order to understand male behavior, it is necessary to understand what it means to be considered a man. Over the years, contemporary society has sometimes defined males as being "Alpha or Beta," each with certain traits and characteristics that define their maleness (Bennett, 2014; Howe, 2012). For example, some common traits and characteristics associated with the alpha male (whether young or old) are: tall, muscular, charismatic, courageous, domineering, persistent, goal oriented, defender, peak physical shape, and generally considered to be a "man's man" (Bennett, 2014; Howe, 2012). Typically the alpha male image may be displayed as an animal of great strength such as a lion, tiger or bear to further emphasize strength or dominance. Traits and characteristics associated with the beta male may include: lack of assertiveness, a follower rather than a

leader, need affirmation from others, weak, short in physique and weak with temperament, and considered a prototypical nice guy (Bennett, 2014; Howe, 2012).

Whether a man identifies as alpha or beta, as they age they may still be at risk for a burn injury, based upon their identified traits or characteristics. For example, the characteristics associated with the alpha male may put him at risk because of his perceived strength and lack of fear. Typically, the alpha male may overreact in a fire or burn situation as he attempts to take control of the situation such as throwing gas on a fire to control the blaze. The characteristics associated with the beta male may put him at risk because of his lack of assertive or aggressive behavior. Whether aggressively or mildly fighting a fire, the potential for an injury is still prevalent. As previously mentioned, a number of factors (reaction time, health, physical ability and so forth) make older adults more susceptible to burn injuries than younger adults.

According to the USFA (2007) males face a disproportionate risk of cooking fire injury relative to the amount of cooking they do. Although women do the majority of the cooking and were the cooks in most of the fires in studies that examined gender, more than half of the people killed and almost half of those injured in reported cooking fires were male. Little gender difference is seen in terms of activity at the time of injury. Fifty-six percent of the males and 54 percent of the females injured in cooking fires were hurt while attempting to fight a fire themselves. Why men are more likely to be killed or injured remains unclear, but may relate to behavior typical of “maleness.”

Another characteristic associated with maleness or masculinity is the ability to maintain independence. In an article on aging, independence, and hegemonic

masculinity, Smith, Braunack-Mayer, Wittert and Warin (2007) specifically examined how men 55 years of age and older were encouraged by close acquaintances to seek independence as part of the successful aging process, yet simultaneously were criticized for maintaining their independence from using health services. The authors appropriated hegemonic masculinity as “the traditional patriarchal view of men and men’s behavior as the most influential and culturally accepted notion of ‘manliness’,” that is constituted through “masculine” traits of independence, toughness, assertiveness, emotional restrictiveness, competitiveness, hardiness, aggression, and physical competence (Smith et al. p. 326).

Smith et al. (2007) interviewed 22 men older than 55 and 12 men 65 or older. For the majority of these men, independence meant self-sufficiency as an indication of their masculinity and the capacity to maintain a good quality of life as they aged. The authors also found that such traits as being tough, strong and in control were associated with independence and that not wanting to rely on others (and thus avoiding help seeking and using health services) was a consistent theme influencing the men’s ability to enact “masculine” traits. These same traits may explain why older men may choose not to adopt recommended safety behaviors. As long as they maintain independence, they are capable of taking care of themselves and therefore, there is no need to conform to recommended behaviors.

In addition to masculinity, the ability to function independently was considered to be a reflection of one’s quality of life. Smith et al. (2007) found that maintaining daily physical and cognitive functioning was important for supporting the men’s independent

state of being, but also reflected the way they positioned themselves as men. Thus, these authors concluded that the concern of men 55 and older about independence reflected both their identity as men and their identity as older people. For these subjects, independence was a characteristic of masculine identity and a marker of successful aging, both of which were important to the assessment of how they negotiated seeking help and use of health services. This independence may play out in many ways, such as not having a smoke alarm in the home, working on wiring without turning off the power source, or disabling the safety switch on the lawn mower.

Summary

It is clear from the review of the literature that the older adult population suffers disproportionately from fire and burn injuries. Older men (especially Black men), may be particularly vulnerable. Although advocates have targeted the use of prevention programs for this particular population, the effectiveness of such programs has been inadequate. Shields et al. (2013) noted that research has shown that older adults are open to burn prevention programs...the goal being that such programs would increase public awareness and result in behavioral change. However, the continued high numbers of fire and burn injuries among the older adult population is evidence that health and safety education alone is not sufficient motivation for behavior modification. Older adults must realize that they are increasingly at risk for a burn injury as they age. They must further realize these injuries can be life-threatening and that feasible preventive actions could alter the potential injury outcome. In short, older adults must individually view

themselves at high-risk, but as able to effectively modify their own risk, if they are to be motivated to adopt preventive measures.

Given the expectation that the older adult population is continuing to increase and that this group is more vulnerable to fire and burn injuries, fire and burn safety behaviors must be addressed. Nurses and other health care providers have a responsibility to provide preventive interventions to populations at-risk for injuries. The present research was designed to explore and examine the self-reported reasons for acting or not acting on safety recommendations taken by older Black and White men who reside in North Carolina and who have sustained a burn injury within the past six months to five years. Using Leininger's Culture of Care model may provide a unique perspective that will assist investigators to establish new fire and burn prevention models that incorporate the individual's cultural and social domain and decrease the potential for burn injury to older men.

CHAPTER III

METHODS

The research undertaken for this dissertation primarily was to partner with participants to explore and examine the self-reported reasons for acting or not acting on safety recommendations taken by older Black and White men who reside in North Carolina and who have sustained a burn injury within the past six months to five years. Additional purposes were to explore how culture influences burn prevention behaviors and attitudes towards behavioral change in this population.

Design

The design used to answer the specific aims was conducted in the form of a descriptive qualitative exploratory study that was guided by theory. As previously mentioned, the design of The Theory of Culture Care Diversity and Universality is unique as it is the only nursing theory focused explicitly on culture care as the dominant domain of nursing inquiry. Leininger (2007, p. 9) describes the theory as

...a holistic, culturally based care theory that incorporates broad humanistic dimensions about people in their cultural life context. It is also unique in its incorporation of social structure factors, such as religion, politics, economics, cultural history, life span values, kinship, and philosophy of living; and geo-environmental factors as potential influencers of culture care phenomena.

The researcher chose four elements (Cultural/Social structure; Kinship/Social; Economic and Educational) of the Culture of Care domains because it was believed these

elements contributed the most to the identification of recurring themes and interrelationships to answer the specific aims (see Table 2). No qualitative studies have been conducted that explore whether older Black and White men who have sustained a burn injury have adopted safety behaviors since sustaining their injury. Leininger and McFarland, (2006) contend that wellbeing and care can best be achieved when nurses knows and understands key elements about individuals, their cultural lifeways, beliefs, values and practices. Exploring the participant's perceptions from these domains will help nurses become more proactive in promoting strategies that prevent fire and burn injuries.

In depth interviews were conducted with sixteen (8 Black & 8 White) older men who met inclusion criteria (described below). Interviews were audio-recorded and transcribed verbatim to ensure accuracy. Each participant was interviewed once for this study. During the interview process, field notes were taken and later incorporated into the written transcripts of the interviews. Each interview lasted approximately one hour and was conducted at a mutually agreed upon location.

Table 2

Application of Selected Concepts Using Leininger’s (1991b) Sunrise Enabler Model to Burn Prevention

Domain	How factors may affect behaviors
Cultural and Social Structure Dimensions	The individual’s cultural environment and social support systems may be barriers or may support behavior change(s).
Kinship and Social	Prior family/cultural experience with fire and burn issues may determine whether prevention is practiced routinely or not. Negative ritualistic behaviors may prove to be detrimental to the individual and the community.
Economic	Lack of sufficient funds for home upkeep, repairs and modernization may pose barriers.
Educational	Low educational or literacy levels may be indicative of the inability to understand or comprehend safety messages. Lack of awareness may pose an increased risk.

Setting

This study was conducted in central North Carolina which is part of the southeastern “burn belt.” The data for this study were obtained from participants who agreed to have face-to-face interviews with the researcher in their homes at mutually agreed upon dates and times. Participants were Black and White men; 50 years of age and older; who had sustained a burn injury of 10 percent or more of their body surface area within the past six months to five year, and resided in North Carolina. Prior

information established that most of North Carolina's older adult population resided in rural areas of the state.

The time period of six months or longer since the burn injury was established because the burn survivor may not be as apprehensive performing activities of daily living (ADL's) at six months post discharge as he would be immediately after discharge. For example, if an individual sustained a burn injury while cooking, he may be reluctant to resume that activity upon immediately returning home, or may take more extreme caution than usual while performing this activity. However, at about six months post burn, and having performed the activity of cooking numerous times since returning home and experiencing no injury, it is highly likely that the individual will have settled into his typical pattern of behavior. All interviews were conducted in respondents' homes.

Sample

Three criteria were used to select participants for this study. First, a random, non-probability convenience sample of individuals whose names were generated from a query of the Burn Center database was used. Second, participants had to be Black or White men, aged 50 and older who resided in private homes, alone or with family, in North Carolina. Finally, the participants must have received a burn injury of 10% or greater body surface area within the past six months to five years from the established date of the start of the study and received treatment at the North Carolina Jaycee Burn Center, located at UNC Hospitals in Chapel Hill, NC.

Appendix A outlined the format for conducting this study with new participants. Initial exclusion criteria consisted of all individuals who do not meet inclusion criteria,

whether they resided in North Carolina or not. Individuals who met the criteria for inclusion were contacted by the investigator via telephone, after obtaining their contact information from the burn registry kept at the North Carolina Jaycee Burn Center at UNC Hospitals in Chapel Hill, NC. Once contacted, the study was explained via a script (Appendix B) to potential participants. Upon receipt of verbal agreement, participants were informed that a follow-up letter with a picture of the investigator would be mailed to the address of record (Appendix C). During the telephone conversation, an in-person home interview date was established. This process continued until the target sample size of 16 participants (8 Black & 8 White) was achieved. A separate outlined format for conducting the study with pilot study participants (Appendix D) and script (Appendix E) that explained how the results of the pilot study generated new questions for this study was used to invite pilot study respondents to participants in this study.

Sandelowski (1995b, p. 183) wrote that determining sample size was ultimately “a matter of judgment and experience.” Creswell (1998, p. 64) noted that for phenomenology studies five to 25 was a sufficient sample size and Morse (1994) noted that at least six would provide a sufficient sample size. Studies that have used the Theory of Culture Care model and the content analysis method have had sample sizes of 10 (c.f. Shroeder, 2010) to 15 (c.f. Khalaf, Westergren, Ekblom, Al-Hazzaa and Berggren, 2014). Sixteen participants were sought for this study as it was determined that given the review of the literature discussing sample size, saturation would have been achieved with this sample size.

Protection of Human Subjects

Approval for this study which was an extension of the pilot study, was sought and deemed exempt through the Institutional Review Boards (IRBs) of The University of North Carolina at Greensboro and The University of North Carolina at Chapel Hill, School of Medicine. Additional approval was sought and obtained from the UNC Hospitals Nursing Research Council. The rationale for seeking approval of the study from the two IRB's and the Nursing Research Council stems from the need to have access to personal health information of participants who were patients at the North Carolina Jaycee Burn Center, located at UNC Hospitals in Chapel Hill, NC. Also, the principal investigator is an employee of UNC Hospitals. Any proposed research performed by any nursing personnel (whether as a student or employee) requires prior approval from the hospital's Nursing Research Council. The two IRBs have collaborated on multiple investigational studies in the past and the investigator received a written statement indicating that the two boards would collaborate on this study. The two IRBs were notified and approved the modification of the original pilot study to include White men, aged 50 and older, to perform comparison of their answers to that of the older Black men and to expand the questions asked.

All participants were fully informed regarding the purpose of this study (Appendix F). Since the investigator was an employee of UNC Hospitals and the North Carolina Jaycee Burn Center, it was made clear to participants that the investigator was conducting this study as a graduate student of The University of North Carolina at

Greensboro, School of Nursing, PhD Program and not as an employee of UNC Hospitals or the North Carolina Jaycee Burn Center.

A verbal consent via an initial telephone interview and subsequent follow-up written consent form were reviewed with each participant prior to obtaining his signature at the beginning of the in-person interview. Participants were informed that participation was strictly voluntary and would not affect their ability to receive health care services at UNC Hospitals or the North Carolina Jaycee Burn Center. Participants were also informed that a voice recording of the interview would be made during the face-to-face interview as a portion of the study. They were further informed that recording would be destroyed following the UNC-CH and UNC-G IRB guidelines when the study is completed.

Confidentiality was maintained on all recordings and data collected by using codes to identify participants instead of names, addresses or any other personal identifiers. A master list of participants' names was kept separate from the data collected. This master list was used during the data collection period to ensure that persons were not recruited more than once.

All recordings and data collected were kept in a locked file in the investigator's assigned student office at the UNC-G School of Nursing. Computer files pertaining to this study only use participant codes as identifiers. At the completion of the study, data were securely stored and will be destroyed according to policy. The IRBs of both institutions were notified of the study completion.

Instruments

Two instruments were used to collect data for this study. The first instrument was an investigator designed background form identical to the one used in the pilot study (Appendix G). The background sheet asked each participant to provide information about their race, age, marital status, burn etiology, burn percentage, number in household, residence type, residence structure type and highest completed education level.

The second instrument consisted of open-ended interview questions that specifically addressed four domains of the Culture Care Model (Cultural and Social structure; Kinship and Social; Economic and Educational), see (Appendix H). A panel of experts approved the Culture Care Model questions. The investigator had included prompts that would elicit responses in the event that the participant was hesitant to speak or cannot think of any examples of safety behaviors. During this portion of the interview process, the information was tape recorded with the permission of the participant, and coded during the review process. The reliability and validity of this instrument were not assessed.

Field Procedures

Attempts were made to contact former participants of the pilot study to ask if they would be willing to participate in the new study by answering the questions associated with the components of the Culture Care Model. Three of the pilot study respondents did agree to participate. These participants were informed that their answers to questions asked during the pilot study spawned new questions that the researcher would like to investigate. Those who agreed to participate were interviewed in their homes.

New participants were also recruited. After screening the burn data base for new potential participants, an initial random telephone call was made to the address of record listed on the burn registry information form. During the initial telephone contact, the investigator introduced himself and provided an explanation regarding: (a) how their names and contact information was obtained; (b) the study purpose; (c) estimated time for participation; (d) whether the individual would be interested in participating and; (e) a time for the investigator to come to the residence to conduct the interview. If individuals gave a verbal consent, indicating an interest in participating, an introductory letter re-explaining the purpose of the study and thanking the respondents for their willingness to participate with a picture of the investigator containing his credentials was sent at least five days prior to the agreed upon meeting date. It was hoped that providing a picture of the investigator and his credentials would decrease any anxiety on the part of the individual about inviting a total stranger into their homes and increase accessibility. The cover letter was written on a fifth grade level, using non-glare paper with a 14-font type for ease of comprehension (Ostwald & Williams, 1986).

On the morning of the scheduled interview, the investigator called the residence to confirm the interview time and to make certain that the individual would be at home. Upon arrival at the residence, the investigator re-introduced himself and again verbally explained the purpose of the study. Upon completion of the explanation, each participant was given the opportunity to ask any questions of the investigator regarding the study. Once the participant's questions were answered, the investigator reviewed the consent form with the participants and obtained their signatures. The investigator kept one copy

of the consent form and the participants were each provided a personal copy of the consent form for his own records. Upon completion of signing the consent form, the participants were asked the demographic-related questions.

The participants were reminded that tape recordings of the next questions would be performed. The tape recorder was started and the participants were asked the series of open-ended questions that specifically addressed the Culture of Care Domains. If the investigator was pushed for an example of safety measures, the investigator provided examples such as testing smoke alarms, cooking on back burners, turning pot handles when cooking and so forth. After the participants provided the recorded answers to the series of questions, the investigator stopped the recording. It was estimated the entire survey process would take approximately one hour to complete. Each participant received a 20 dollar bill for his participation.

Interventions

There were no planned interventions for this study. However, if the investigator had encountered situations in which the residence was determined to be at risk for a fire or burn injury, the investigator could not in all good conscience walk away from such a situation, knowing the potential danger. Examples of such situations might have included discovering that there were no smoke alarms, or because of declining health, the participants were in need of a smoke alarm designed for the hearing or visually impaired. In the above examples, the investigator would have informed the resident of the situation and asked permission to contact the local social services or fire department and request that the appropriate alarm(s) be installed. Smoke alarm (whether long life or special

needs) installation are available for free from the local fire department or state services for the visually and hearing impaired. However, no such situations were encountered.

Content Analysis

Content analysis is one of several qualitative methods currently available for analyzing data and interpreting its meaning (Schreier, 2012). It has been used in many nursing studies. The unique attribute of content analysis is that it is a method of research that may be used with quantitative or qualitative research and used in an inductive or deductive manner. Both inductive and deductive content analysis processes involve three main phases: preparation, organization, and reporting of results (Elo et al., 2014).

Content analysis may be conducted on tangible (written communication, diaries, and books for example) or intangible (visual, feelings, body sensation) data. Krippendorff (1980), Downe-Wamboldt (1992) and Sandelowski (1995a) have described the content research method of content analysis as a systematic and objective means of describing and quantifying phenomena. Content analysis allows the researcher to explore and examine theoretical issues to gain increased comprehension of the data that has been gathered. The goal of content analysis is to enhance the inferential quality of the results by relating the categories to the context or environment that produced the data (Downe-Wamboldt, 2009).

Critics in the quantitative field have questioned qualitative content analysis because they consider it to be a simplistic technique that does not lend itself to detailed statistical analysis, while others considered that content analysis was not sufficiently qualitative in nature (Morgan, 1993). Other disadvantages associated with this method

include its being limited to recorded communications (verbal, visual, or written data), the amount of time required to code data, and the type of statistical procedures that can be applied to data (Downe-Wamboldt, 2009). Nonetheless, qualitative methods are being increasingly recognized as valuable in their potential contribution to nursing knowledge (Brousard, 2006). Two noted benefits content analysis offers the nurse researcher are: (1) it serves as a content-sensitive method (Krippendorff, 1980) and (2) it is flexible in terms of research design (Harwood & Garry, 2003).

Although there are no universally accepted rules that dictate the data analysis procedures to conduct data content analysis research, it generally encompasses the following steps: (1) selecting the unit of analysis; (2) creating and defining the categories; (3) pretesting the category system; (4) assessing reliability; (5) revising the coding rules if necessary; (6) pretesting the revised category scheme; (7) coding all the data; (8) reassessing reliability and validity (Downe-Wamboldt, 2009; Elo & Kyngas, 2008).

Leininger and McFarland (2006, p. 61) stress four sequential phases of data analysis that are essential to meet the criteria of qualitative analysis. These phases help to demonstrate how the researcher achieved the criteria of credibility, recurrent patterning, confirmability, meaning in-context, and other criterion. The first phase consists of the researcher collecting, observing, describing, recording, using field notes and other means to collect raw data related to the study purpose. Although attention to the *etic* focus is encouraged, Leininger stresses that the information in this phase is generally taken from the *emic* focus. This phase is compatible with steps 1 and 2 as identified by Downe-Wamboldt, (2009) and Elo and Kyngas, (2008) above.

The second phase of data analysis as proposed by Leininger consists of the following: identification and categorization of descriptors and components. During this phase, the researcher is expected to code and classify data as they relate to the domain or question under study. The researcher is encouraged to compare emic and etic descriptors for differences and similarities. During this phase, any data that seem to have a recurrent theme should be studied for its meaning and/or concept (Leininger & McFarland, 2006, p. 62). This phase is compatible with steps 3 and 4 as identified by Downe-Wamboldt, (2009) and Elo and Kyngas, (2008).

The third phase of Leininger's data analysis is highlighted by the terms: pattern and contextual analysis. During this phase, the researcher is expected to evaluate the data to discover saturation of ideas and recurrent patterns of similar or different meanings, expressions, structural forms, interpretations or explanations. Another component of this phase is that the data are examined to show patterning with respect to meaning-in-context and along with further credibility and confirmation of findings (Leininger & McFarland, 2006, p. 62). This is compatible with steps 5 and 6 as described by Downe-Wamboldt, (2009) and Elo and Kyngas, (2008).

The fourth and final phase of Leininger's data analysis procedures is highlighted by the researcher generating the following components: major themes, research finding, theoretical formulations and recommendations. This is considered to be the highest phase of data analysis, synthesis and interpretation. During this phase, the researcher is expected to abstract and confirm major themes, research findings, recommendations, and sometimes make new theoretical formulations (Leininger & McFarland, 2006, p. 62).

For this study, credibility was established by the use of direct quotes from participants and by the level of direct experience of the researcher with the study population, having worked with burns, burn survivors and promoting burn prevention for 32 years prior to conducting the study. Consistency of findings with existing literature, as well as feedback from the nurse expert mentioned earlier, contributed to confirmability and meaning-in-context. Evidence of recurrent patterning was noted to have occurred when the same or similar words, thoughts or concepts repeatedly appeared in the transcript over time. Because the study sample included older Black and White males with similar socio-economic status, educational levels and living situations, transferability of findings was enhanced.

Preparation Phase

During the preparation phase, the selection of the unit of analysis is undertaken. This process may include such steps as the examination of words, paragraphs, phrases, themes, ideas, thoughts and the amount of time taken to conduct the interview and is guided by the research question or aim (Downe-Wamboldt, 2009; Elo & Kyngas, 2008). Elo and Kyngas (2008), stress that the aim of this phase is for the researcher to become immersed in the data, which is why the written data are reviewed several times. Since this study was guided by the Culture of Care Theory, the inductive process of content analysis was utilized. The inductive process may be chosen if the researcher wishes to explore cases in which little or no previous studies have been conducted (Elo & Kyngas, 2008). Using Leininger's Culture of Care Theory, in this phase, the domain of inquiry (DOI) is focused upon using an *emic* approach. In other words, if the DOI were the

cultural and social structure dimension, the researcher would look for various words, patterns, actions and so forth that would reflect the individual's cultural environment and social support systems that may be barriers or support a behavior change. The four domains chosen for this study were the focus of the preparation phase.

Organization Phase

Using the inductive method, this phase of content analysis is characterized by the use of open coding, creating categories and abstractions (Elo et al., 2014). The transcribed content is read and re-read as many times as necessary by the researcher to ensure that all aspects of the content is described and categories generated (Elo & Kyngas, 2007). Once this process has been completed, the categories are collapsed into similar or dissimilar topics. Cavanagh (1997) noted that the purpose of creating categories is to provide a means of describing the phenomenon, to increase understanding and to generate knowledge. This allows the researcher to decide which topics may belong to similar categories. This process is also similar to Leininger's data analysis process. Using Leininger's process, the researcher is expected to code and classify data as it relates to the domain or question under study. Data are explored for similarities, differences and meanings. In this study, transcribed content was read and re-read a minimum of four times for each domain to increase the researcher's knowledge and to establish initial domain themes.

Reporting of Results

The final phase of the content analysis process involves the accurate reporting of the results. Reporting the results is particularly linked to transferability, conformability

and credibility and should be reported systematically and carefully with particular attention paid to how connections between the data and results are reported (Elo et al., 2014). Some reporting difficulty may be noted if the researcher failed to analyze data correctly or failed to describe the accuracy of the abstraction process due to the researcher's intuition or insight. It is extremely important that the content and structure of concepts created by content analysis be presented in a clear and understandable way (Elo & Kyngas, 2008).

Transferability (a component that helps to establish trustworthiness or validity) generally refers to whether the findings can be extrapolated or transferred to other settings or groups. Although the researcher may suggest ways in which the study is transferrable, it is generally up to the judgment of reader as to whether or not the reported results are transferable to another setting or context. Trustworthiness increases if the results are presented in a manner that allows the reader to look for alternative interpretations (Elo et al., 2014). Therefore it is essential that the researcher provides a clear and comprehensive description of all aspects of the study.

Conformability refers to objectivity and implies that the data accurately represent the information that the participants provided and interpretations of those data are not invented by the inquirer (Elo et al, 2014). The researcher may rely on the use of quotations to confirm that the data presented is that of the participant and not researcher bias. Whereas the use of quotations from as many participants as possible may help confirm the connection between the results and the data, the researcher needs to ensure that quotations utilized reflects all the identified concepts and represents the sample well.

Elo et al. (2014) noted that if quotations are overused in the results section, the results of the analysis may be unclear and the richness of the original data disappears. This is also compatible with Leininger's data analysis process.

Credibility

According to Pollit and Beck (2012) credibility refers to confidence in the truth of the data and interpretations of them. Qualitative researchers must strive to establish confidence in the truth of the findings for the particular participants and contexts in the research. Harwood and Garry (2003) noted that the failure to complete the analysis abstraction process may mean that concepts are presented as results that are not mutually exclusive, leading to over simplistic conclusions. It may be necessary for the researcher to return to the data and double check the reliability of the content. It is recommended that the authors clearly define their validation terms because there are many types of qualitative validation terms in use (Elo et al., 2014). Leininger's data analysis process also addresses the need for the researcher to define validation. For the purpose of this study, validation was achieved by an outside reviewer who is an experienced burn nurse, professor and researcher. This expert is a PhD prepared burn nurse who also holds the rank of Professor at a major school of nursing in the western United States. This professor has researched and published numerous peer-reviewed journal articles related to burns and burn prevention. She is also very familiar with the Culture of Care Model. This expert reviewed the transcripts of respondents' comments and the preliminary themes to ensure that the themes were reflected in the transcripts. Additionally, this

expert reviewed the final narrative describing the thematic analysis to ensure that it accurately reflected participants' responses.

Data Analysis Plan

The research undertaken for this dissertation was conducted in the form of a descriptive qualitative exploratory study that was guided by the Culture of Care Theory. The purpose of this study was to explore and examine the self-reported reasons for acting or not acting on safety recommendations taken by older Black and White men who reside in North Carolina and who have sustained a burn injury within the past six months to five years. An additional purpose was to explore how culture influences burn prevention behaviors and attitudes towards behavioral change. For those men who did not change safety behaviors after sustaining a burn injury, reasons for not changing behavior and suggestions to encourage others to change behaviors were also explored.

Sample Analysis

The characteristic of participants in this study were examined to allow comparison of responses by race and to allow readers to compare this sample to other populations. Descriptive statistics conducted on demographic data included: ethnicity, age, marital status, burn etiology, burn percentage, number of residence in the household, residence type, residence structure type and highest completed educational level. All continuous data had calculated means, ranges, standard deviations and frequencies. Frequencies were calculated for categorical variables. Descriptive statistics were analyzed using SPSS[®] version 19. The procedure for analyzing the data collected was guided by the specific aims.

- **Specific Aim 1:** Explore and examine the self-reported reasons for acting or not acting on safety recommendations taken by older Black and White men who reside in North Carolina and who have sustained a burn injury within the past six months to five years. Transcribed interviews were analyzed using the content analysis method (Downe-Wamboldt, 2009; Elo & Kyngas, 2008) with a specific focus on reported safety behaviors. Guided by the Culture Care Theory, units of analysis were first determined. Transcribed text were read and re-read a total of four times with a specific focus on reported safety behaviors. After reading and re-reading the text, units of analysis were extracted. Emerging findings were identified and compared and commonalities abstracted. Dialog(s) associated with each unit analysis were compiled. Evidence of dependability and reliability were obtained by having condensed findings reviewed by the same expert burn nurse researcher as mentioned previously. Major findings were fully examined and discussed. Findings were separated by race for comparison of reported behaviors and then combined overall.
- **Specific Aim 2:** Explore how cultural influences burn prevention behaviors and attitudes towards behavioral change. Transcribed interviews were analyzed using the content analysis method (Downe-Wamboldt, 2009; Elo & Kyngas, 2008) with a specific focus on cultural influences and behavior. Guided by the Culture Care Theory, units of analysis were first determined. Transcribed text were read and re-read a total of four times with a specific focus on cultural influences and behaviors. After reading and re-reading the text, units of analysis were extracted.

Emerging findings were identified and compared and commonalities abstracted. Dialog(s) associated with each unit analysis were compiled. Evidence of dependability and reliability were obtained by having condensed findings reviewed by the same burn nurse expert and researcher. Major findings were fully examined and discussed. Findings were separated by race for comparison of reported behaviors and then combined overall.

CHAPTER IV

RESULTS

Study findings are reported in this chapter. A description of the study participants and their responses to survey questions in relation to the specific aims are examined. The purposes of this study were to explore and examine the self-reported reasons for acting or not acting on safety recommendations taken by older Black and White men who reside in North Carolina and who have sustained a burn injury within the past six months to five years; and to explore how culture influences burn prevention behaviors and attitudes towards behavioral change. Data analysis established a demographic profile of the study participants and provided answers to the specific aims.

Participants' Profiles

A query of the Burn Center's data base was conducted using the following criteria: Black or White males, 50+ years of age, 10% TBSA or greater and discharged alive within the past six months to five years, yielded 132 potential participants. The initial list was examined for subjects that did not meet the established criteria for the study. For example, it was noted that two individuals included on the list were still hospitalized and recovering from their burn injuries. There were 22 women included on the initial potential participant's list. Several individuals were found to have been discharged to a skilled nursing facility (n=7); or rehabilitation facility (n=8), thus not qualifying them to meet the home residency requirement. Further examination of the list

revealed that six individuals were residents of the neighboring states of Virginia, or South Carolina (n=5). Two other individuals were disqualified because they resided in Florida and New Mexico. Additional exclusions were made for individuals who were transferred to another facility (n=1); hospice (n=1) and a psychiatric facility (n=2). This left a total of 96 potential subjects (37 Black & 39 White). The initial list was reviewed again and no additional exclusions were required. Using the 96 potential subjects, the investigator went down the list in consecutive order, based upon dates of hospitalization in an attempt to recruit participants for the survey. Names were removed from the list and no further attempts made to contact individuals after dialing the phone of record five times resulting in no answer, or leaving voicemail messages with no return response. This process continued until the desired number of eight Black and eight White participants had agreed to be interviewed. It should be noted that three of the Black participants (001, 002 and 003) had also participated in the pilot study conducted by the investigator.

Data describing the participant's demographics were compiled (Table 3). The participant's ages ranged from 50 to 76 years with a mean age of 61 years. The majority of the participants (n=13) were married and resided in their homes with a spouse and/or adult child and three lived alone. Two participants listed their marital status as single and one participant was divorced. The burn etiology was as follows: ten flame related burns (3 Black & 7 White); five grease burns (4 Black & 1 White) and one scald (1 Black). Most flame related injuries (n=5) were the result of the individuals using an accelerant on a brush or trash fire, followed by attempts at relighting a gas or propane grill (n= 4). The grease burns were the result of individuals attempting to extinguish a grease fire or carry

a burning pan of grease outdoors or slipping while moving a pot of hot grease (n=5). The lone scald injury occurred as a result of an individual experiencing a syncope episode while cooking. The total body surface area burned (TBSA) ranged from 10 to 31 percent with a mean average of 16 percent. The mean average of percent burns for Blacks was 16 and 17 for Whites. Single story brick or brick and wood structures were the most frequently reported residential structure (n=9), followed by multi-story brick or combination brick and wood structures (n=7). The highest educational achievement of study participants ranged from 8th grade (n=1); high school (n=7); junior college (n=2); college (n=5) to a graduate degree (n=1) with the majority of the participants having graduated high school. A review of educational achievements by race revealed the following for Black men who participated in this study: eighth grade (n=1); high school graduate (n=4); junior college (n=1) and college (n=2). For White men the educational achievements were as follows: high school graduate (n=3); junior college (n=1), college (n=3) and graduate school (n=1).

Table 3

Summary of Background Information (N=16)

Ethnicity/ Participant	Age	Marital Status	Burn Type	Burn Percentage	Number in Household	Residence Type	Home Structure	Education
BM 001	75	M	Flame Gas grill	27	2	Single story	Brick	8 th grade
BM 002	63	M	Flame Gas grill	14	3	Multi- story	Brick/wood	Junior College
BM 003	62	M	Grease fire	15	3	Multi- story	Brick/wood	College
WM 004	61	M	Flame Gas grill	20	2	Multi- story	Wood	College
WM 005	56	M	Flame Burning brush	17	3	Single story	Brick/Vinyl	High School
WM 006	59	M	Flame Burning trash	31	2	Multi- story	Vinyl	Junior College
WM 007	68	M	Flame Burning brush	13	2	Single story	Brick	High School
WM 008	70	M	Flame Burning trash	10	2	Multi- story	Brick	College
BM 009	76	M	Scald Grease	10	3	Single story	Vinyl	High School
BM 010	50	M	Scald Grease	12	3	Single story	Brick	High School
WM 011	50	D	Flame	18	1	Single Story	Wood	Graduate School
BM 012	53	M	Grease	15	4	Single story	Brick/wood	College
WM 013	67	M	Flame Burning brush	14	2	Multi- story	Brick/vinyl	College
WM 014	51	S	Grease	13	1	Single story	Brick	High School
BM 015	56	S	Scald	18	1	Single story	Brick	High School
BM 016	65	M	Flame Gas grill	13	3	Single story	Brick	High School

Data Analysis

Leininger stressed the use of four phases (collecting and recording data, categorizing descriptors, searching for repetitive patterns, and abstracting major themes)

of data analysis when using the ethnonursing method of the Sunrise Enabler Model (Leininger & McFarland, 2006, p.62). The investigator was able to successfully manage all phases of the data analysis process as suggested by Leininger. Interviews were recorded, transcribed by a paid professional transcriptionist and checked for accuracy through playback of the recordings and comparing the investigator's field notes. Multiple reviews of the transcripts for relevance, themes and theoretical connectedness were conducted. Codes (assigned values) were applied to recognized themes due to the sample size. This process allowed for ease of theme consolidation when exploring its relevance to the specific aims. Many comments and statements were noted to be similar across the spectrum of participants, while others offered some unique insights into each domain and among the different ethnicities. In some cases, comments made by numerous participants were noted to overlap the four domains. A total of 16 distinct preliminary themes were identified from the interview questions. Separated by the specific aims, and the domains chosen to explore those aims, the themes were as follows:

Specific Aim 1 (Cultural and Social Structure Domain)

- Participants report anxiety, mental anguish and hesitancy being around fire, but will continue to do old habits, even if reporting that they have *changed or learned their lessons*. Changes to psychological/physical behaviors or “work around.”
- Denial of old habits; not burned bad enough; need to think of loved ones; psychological terms for behaviors (making up excuses); not owning up to situation; intermittent reinforcement/transference.

- Heating, cooking, burning brush/trash (will get others to burn trash/brush for them); has more respect for fire; knows safe fire but still do unsafe behaviors.
- Should adhere to messages; personal and family safety; listens, but will form own opinions(s).
- Education – family/self-protection; scare tactics; not burned significantly enough to change old habits.
- Injury was fate; message to prevent injuries to others; blame attribution/self-blame.

Specific Aim 2 (Kinship and Social)

- Family members being burned affected how they dealt with injury (denial of home remedies); nightmares; anxiety may contribute to how they view burns.
- Cooking safety practiced half the time.
- When discussed, safety messages were generally accepted and implemented; Black women initiated home safety initiatives; Domino effect.

Specific Aim 2 (Economic)

- Capable of providing adequate upkeep of their homes in relation to fire and burn prevention.
- Alternative heating sources rarely used.

- Felt that poor (poverty) will not be as cautious or likely to adopt safety behaviors as rich. Poverty may contribute to an individual taking more personal risk(s).

Specific Aim 2 (Educational)

- Blacks more likely to have attended safety seminars than Whites (Possible more Blacks were exposed to targeted prevention programs?); information was thought to be helpful.
- Blacks more likely to have read pamphlet or brochure about fire or burn safety. Not clear as to whether they adopt recommendations. (Exposure?).
- Feels that others probably will not read or adopt recommendation(s).
- Strong need for education, including resource list, media, pictures of burns, personal testimonies.

The initial themes were assembled under the various domains that the questions reflected. There were six themes associated with the culture and social domain; three themes associated with the kinship and social domain; three themes associated with the economic domain and four themes associated with the educational domain. A review of the initial themes and comments revealed redundancies within the domains indicating saturation. Once compiled under their respective domains, these initial themes were consolidated into one overarching theme per domain, resulting in four primary themes. The four primary themes that emerged from the collected data were as follows:

Specific Aim 1 (Culture and Social Structure)

- Emotional “workaround” with intermittent reinforcement and/or transference.

Specific Aim 2 (Kinship and Social)

- Domino Effect.

Specific Aim 2 (Economic)

- Poverty may contribute to an individual taking more personal risks regarding safety.

Specific Aim 2 (Educational)

- Lack of awareness may pose an increased risk.

As described above, during this thematic process, the work was validated by an outside burn nurse expert.

There are six criteria developed by Leininger for assessing ethnonursing studies. Such criteria include credibility, confirmability, meaning-in-context, recurrent patterning, saturation and transferability (Leininger & McFarland, 2006, pp. 22-3). For this study, credibility was established by the use of direct quotes from participants and by the level of direct experience of the researcher with the study population, having worked with burns, burn survivors and promoting burn prevention for 32 years prior to conducting the study. Consistency of findings with existing literature, as well as feedback from the nurse expert mentioned earlier, contributed to confirmability and meaning-in-context. Evidence of recurrent patterning was noted to have occurred when the same or similar words, thoughts or concepts repeatedly appeared in the transcript over time. Because the

study sample included older Black and White males with similar socio-economic status, educational levels and living situations, transferability of findings were enhanced.

Results by Specific Aims

The overarching theme in the interviews was the interpretation of the participant's experience of having suffered a burn injury and thus their relationship to the four domains of Leininger's Culture of Care Sunrise Model (cultural and social structure; kinship and social; economic and educational) to help explore the specific aims. As one participant stated,

...and I try to think of when I do use my gas grill, I am always thinking of the safety procedure that I need to keep from that accident happening again, so I...I guess you know, my old ways, if I don't change anything, then I might not be around so...(BM 002).

- **Specific aim #1. Explore and examine the self-reported reasons for acting or not acting on safety recommendations taken by older Black and White men who reside in North Carolina and who have sustained a burn injury within the past six months to five years.**

The first specific aim was designed to explore and examine the self-reported safety reasons for acting or not acting on safety recommendations taken by older Black and White men who reside in North Carolina and who have sustained a burn injury within the past six months to five years. Prior to the interview, participants were read a statement asking them to provide honest answers to all the questions and not the answers they thought the investigator would like to hear. The Participants were interviewed and

asked the exact same questions and/or provided the same examples if one was needed to further explain the intent of the questions. After compiling all responses, the recurring themes from the interviews revealed that the majority of the participants (6 Black & 6 White) reported feelings of anxiety, mental anguish and hesitancy being around fire regardless of how their injury may have occurred (Table 4).

Table 4

Participants' Response Indicated Difficulty Being aAround Fire or Cooking Post Burn

	Black	White
Yes	6	6
No	2	2

They reported that they had changed or learned their lessons about being safe around fire. Examples of changed behaviors were reported as: constantly watching what is being cooked; remaining in the kitchen during the cooking process; being very cautious and no longer using their stove to cook. Many reported that even though they had experienced the afore mentioned feelings of anxiety, mental anguish and hesitancy, they also knew they had to get over them. They worked through their apprehension by forcing themselves to be more cautious when grilling, cooking or lighting fires. Five respondents (BM 002, 003 and WM 005, 007 & 008) reported continued use of an accelerant when grilling or continued to use a gas grill. A few respondents reported that as a result of their injury, they do not get close or around open flames anymore (BM 001; WM 005; & WM 011). Two respondents (BM 003 & WM 008) reported that they became uneasy or afraid if the flames “popped” or of the potential of an explosion. Four respondents (2

Black & 2 White) reported that they did not have any trouble being around fire after their injuries. It should be noted that three of the four injuries mentioned were the result of contact with an open flame or propane tank and one was the result of a scald injury with hot grease.

The overarching theme for this specific aim was thought to be emotional “work-around(s)” with intermittent reinforcement and/or transference. Webster (2015) defines work-around as a plan or method to circumvent a problem (as in computer software) without eliminating it. Respondents recognized the psychological and physiological effect their burn injury had on them and their family. Respondents recognized the need to get beyond their fear. They implemented “work-arounds” such as forcing themselves to return to cooking or using the grill, but being very cautious in the process to help regain control. As WM 005 stated “...I was determined to get on with my life. I won’t let anything hold me back.” Intermittent reinforcement and transference were thought to be achieved once the individual was able to feel in control of the situation.

- **Specific aim #2: Explore how culture influences burn prevention behaviors and attitudes towards behavioral change.**

Open-ended interview questions that specifically addressed the Culture Care Model domains (Appendix H) were employed in an attempt to answer the question of how culture influences burn prevention behaviors and attitudes towards behavioral change. Participants spoke openly and freely regarding their thoughts and ideas regarding burn prevention behaviors and attitudes towards behavioral change. Each specific domain and its potential answer to this specific aim will be discussed.

Culture and Social Structure

Although the first question of this domain was intended to explicitly address specific aim #1, several additional questions were asked to gather information regarding behaviors and attitudes of the respondents and their perception of men in general as it related to this topic. For example, under this domain, participants were asked the following question: Many men who have been burned continue in their old habits and don't adopt safety behaviors. Why do you think that is and what do you think it would take to change their behavior? Answers to this question were compared to the answers given by respondents to the first question. Table 5 reflects the breakdown of Black versus White who reported that they still cooked, but do so with caution.

Table 5

Respondents' Who Continued Their Old Habits - Post Burn (but With Caution)

	Black	White
Yes	7	7
No	1	1

Even though the majority of the respondents reported that they had changed their behavior, their comments for why they felt others may not adopt safety behaviors ranged from examples such as stupidity, carelessness, not thinking of family /selfishness, old habits to not being burned significantly enough (Table 6). Examples of the multiple responses given by each respondent are included in the table.

Table 6

Participants' Response to Why Other Men May Continue Old Habits After Sustaining a Burn

	Stupidity	Carelessness	Family/selflessness	Habit	Not burn significantly enough
Black	0	3	3	3	0
White	5	4	1	2	4

Five White men (004, 005, 006, 007, & 008) thought that stupidity played a major role in determining whether an individual would change their behavior post burn.

Additionally, Four White men (006, 007, 013, & 014) indicated that individuals must not have been burned significantly enough to make them change their behavior. No Black men mentioned these two subjects when discussing this topic.

The primary theme associated with this domain reflected a denial of old habits; intermittent reinforcement and transference. The denial of old habits theme may be attributed to the stupidity and carelessness characteristics described by the respondents. In other words, older men who may have suffered a burn injury may see the injury as a direct result of their own actions (habit or carelessness) and not the behavior itself. For example if a person had a habit of pouring an accelerant such as diesel fuel on a brush fire for years and had successfully done so without suffering any injury, he may be lulled into a false sense of security thinking that this is a safe way to burn brush, or that he has control over the situation. If however, he attempted to do this procedure and sustained a burn injury, he is more likely to think that his injury was just an accident (perhaps brought on by distraction or something he did wrong) and that it is still safe to resume his

prior behavior because he has done that so many times over the years without suffering an injury. The four White men who commented the burns were not serious enough may reinforce the macho male culture or phenomenon or quality of life (independence) issues. Other respondents felt that the individual should not only think about his safety, but the safety of his family as well. "...the individual should think about their family, getting burned makes them change (BM 001)."

If they don't, they're crazy! Don't know why anyone would do that! Maybe just a sign of old age; just get stuck in a particular way of doing things, should think about putting family at risk and money problems... (WM 004).

Thus, White men were more likely to attribute personal flaws (stupidity, carelessness) and Black men more likely to attribute lack of behavioral change to family or selflessness.

Another question associated with this domain sought to determine the variety of ways in which fire may be used in the individual's life. The investigator thought the inclusion of this question would provide information regarding the respondent's respect for and view of fire, whether it is considered a tool (heating, cooking and light) or pleasure (campfire, socializing with friends). All respondents reported using or viewing fire as a tool for heating and cooking (Table 7).

Table 7

Ways Fire is Used in Participants' Life

	Heating/Cooking	Candle use	Trash/Brush Burning	Campfire/Recreational
Black	8	2	3	1
White	8	4	3	2

One respondent (WM 006) uniquely described fire as a “servant to humanity.” Some (4White & 2 Black) reported that they or their spouse used candles. Usually this was associated with accent lighting and/or for room scent. Six reported being extra vigilant when candles were in use (BM 003, BM 012, WM 005, WM 007, WM 013, & WM 014). Six individuals (3 Black & 3 White) reported continuing to use fire to burn trash or brush. Whether they continued to use an accelerant while performing this behavior was not discussed. However, as previously mentioned, they stated that they are very cautious being around open flames. One respondent (BM 002) stated that his wife now burns the leaves and brush. Even though all respondents recognize fire for heating and cooking, White men were more likely to use fire in a different manner such as burning candles and recreational purposes.

The fourth question under this domain asked the respondents to share their thoughts or feelings when they heard or were encouraged to practice safety behaviors such as turning pot handles, cooking on back burners, using accelerants on open flames or checking the smoke alarm and so forth, (Table 8).

Table 8

Participants' Thoughts Upon Hearing Fire and Burn Safety Messages

	Safety	Family	Doesn't apply
Black	7	1	2
White	8	2(cried)	

The majority of the respondents (7 Black & 8 White) stated that hearing such messages meant they were intended for them and their family's personal safety. Two individuals (BM 010 & BM 016) implied that even though they knew the messages were intended to promote safety, they did not think such messages applied to them. BM 010 stated that he did not think the messages would apply to him, but that he would be more careful. BM 016 stated that upon hearing such messages, he would have to stop and think, or if he felt there was a difference of opinion, he would listen, look and see where he may benefit. If he did not see any benefit to himself, he could not change his ways. One respondent (WM 006) stated the he thought such messages meant a lot. He was noted to become very emotional and briefly shed tears stating that he yells at his wife when she blocks exits, and so forth. The investigator surmised that having experienced a burn, this respondent did not want his spouse to suffer a burn in the event of a house fire. He stated that he was surprised at this display of emotion and apologized. WM 011 was also noted to become emotional when asked this question. His response was

...If I had been cooking on the back burner, none of this would have ever happened. Uh, and I don't think I ever paid attention.

It should be noted that this respondent sustained his injury while cooking on a gas stove. He reached above the stove to retrieve something causing his shirt tail to come into contact with the open flame and catching fire.

The fifth question under this domain asked the respondents what they thought it would take for men to view fire and burn safety behaviors in a different manner (Table 9).

Table 9

Respondents' Frequent Comments to: What Would it Take for Men to View Fire and Burn Safety Behaviors in a Different Manner?

	Respect/view differently	Significant Burn injury	XY Chromosomes	Scare Tactics
Black	3	2	2	2
White	5	2	2	4

It should be noted that this open-ended question was not asked to specifically identify individuals who may have already sustained a burn, but was intended for the respondents to think of all men whether burned or not. Answers to this question ranged from the need for men to respect or view fire in a different manner; perhaps the individual(s) may not have been burned significantly enough; to the use of scare tactics such as showing individual photos or taking a tour of the burn center. Four individuals (BM 002, WM 005, WM 014 & BM 016) also gave responses that alluded to the macho phenomenon of maleness. Responses such as "...men seem to live off egos, adventurous and daring, like to take chances" (BM 002); "...men are macho, I've done this all my life" (WM 005), would be reflective of typical male behavior or the "XY- chromosome factor."

The sixth question that was asked under this domain asked whether the respondents felt their injury was fate or something that could have been prevented (Table10).

Table 10

Respondents' Belief That Injury Was Fate Rather Than Something That Could Be Prevented

	Believed Injury was Fate	Believed Injury was Preventable
Black	4	4
White	2 (cried)	6

Half of the Black respondents (n=4) thought that their injury was fate and most of the White respondents (n=6) thought their injury was preventable. Further discussion with individuals who felt that their injury was fate revealed that as a result of their injury, they have found a sense of purpose in their suffering. Fate, in this sense was viewed as God's will to a good purpose and not punishment. For example, two of the Black respondents (BM 002 & BM 012) felt that as a result of their burns, they were being used as a vessel by God for a purpose or to promote fire and burn safety. In fact BM 012, in a later response stated that if he sees someone not cooking on the back burner, he sometimes pulls the individual aside and discusses the importance of doing so. One White respondent (WM 013) who also thought his injury was fate, stated that he didn't know if it was because of his previous burn injury as a teenager, but he knows that Jesus walks with him every day. It should be noted that during this explanation, he became emotional

and briefly shed a few tears and apologized for his display of emotion. One White male (WM 005) also became emotional (tearing up) when asked this question and stated that he felt his injury happened for a reason as well. He had mentioned earlier in his interview that shortly after returning home from his injury, he and his wife went to various churches with in their area and showed pictures of his injury and gave testimony to the various congregations. He stated that now people come up to him at church and say “it makes them look at and actually see what can happen.” (WM 005).

The majority of White men (004, 006, 007, 008, 011 & 014) and the four remaining Black men (001, 003, 009, 016), who viewed their injuries as preventable tended to blame themselves. Statements were made to imply that an act of carelessness contributed to their injury. For example, BM 009 stated that he had forgotten that snow had fallen the night before when he walked out on the porch to discard a pot of hot grease and water, causing him to slip and fall. BM 016 stated that he smelled gas when he opened the hole of the pig cooker and that he should have kept the gas off and let it dissipate before attempting to relight this cooker. WM 014 stated “I have nobody to blame for this but myself. If I had a lot less oil in the pan I was using, this would have probably never happened.” It could be surmised that these men did not find any purpose in their suffering. All respondents implied that they are much more cautious when they are cooking or are around fire. Thus, there is no link between the stated change in behavior for individuals who believed their injury was fate versus those who believed their injury was preventable.

Kinship and Social

The primary theme identified for the kinship and social domain was the “domino effect.” The “domino effect” meaning associated with this theme is the result of the questions asked to determine how the respondent’s family and socialization may react to burns. A global view of the respondent’s answers would imply that as a result of their burns, overall family members took the initiatives to ensure that the rest of the family (and the survivor) practiced safety measures. These measures may have taken the form of installing smoke alarms and purchasing and learning how to use fire extinguishers. They may also be expressed by family members insisting that the survivor does not engage in behavior that precipitated the injury. For example, BM 001 stated that his family will not let him “mess” with fire; BM 009 stated that his family does not want him near a stove that has hot grease on it. It is clear that families still viewed these individuals as particularly vulnerable. Examples of practiced safety measures included turning pot handles when cooking on the stove, use of the back burners and keeping children out of the kitchen.

The three questions for this domain centered on: (1) whether the respondents had a family member who had suffered a prior (significant) burn injury; (2) whether the respondents noted if family members practiced fire and burn safety behaviors and (3) if there had been discussion and implementation among family members regarding fire and burn safety.

Table 11

Other Family Members Who May Have Suffered a Burn

	No other family member(s) has been burned	Other family member(s) has been burned
Black	3	5
White	7	1

Five Blacks (001, 003, 009, 012 & 015) and one White (005) indicated that they did know of a close relative that had sustained a significant burn injury (Table 11). Seven Whites (004, 006, 007, 008, 011, 013 & 014) and three Blacks (002, 010, 016) stated they were not aware of any relatives sustaining a burn injury. Two Black respondents (003 & 015) reported that when they or other family member(s) got burned, attempts were made to get them to use home remedies to heal their burns. For example, BM 003 recounted that after he was discharged from the hospital, he still had some pain in his left leg. His uncle informed him that he still had “the fire in his leg” and that he should go visit a lady he knew in Wilmington, NC who could “talk the fire out.” BM 015 stated that

...well, back then, you know, you use a little grease or something like that. Like my aunt said when I got burnt, put a little butter on it.

Respondent WM 005 reported that as a result of his burn, his family changed the way they behaved about burns. He stated that upon returning home from the hospital he and his wife shared their bed with their grandson because all three were experiencing nightmares for a long time. His wife stated that before his accident, she was the one who

typically would burn candles. However since his accident, she wouldn't burn a candle for over a year. She now uses battery operated candles.

The second question associated with this domain asked the respondents if they had ever noticed any relatives practicing safety behaviors such as turning the pot handles when cooking on the stove, or grilling for example, (Table 12). The question also sought to determine if such safety practices were only performed by women.

Table 12

Respondents' Ever Notice If Any Relatives Practiced Cooking Safety Behaviors?

	Yes	No	Men only	Women only	Both men and women
Black	4	4	0	0	1
White	3	5	0	1	0

Four Black respondents (001, 009, 012 & 016) and three White respondents (004, 008 & 014) indicated that they did notice family members cooking on the back burners or turning pot handles during the cooking process. One respondent (BM 001) indicated that he noted this process with both men and women and one (WM 008) specifically noted that he had only seen this done by women. Four Black men (002, 003, 010, & 015) and five White men (005, 006, 007, 011 & 013) indicated they had not noticed if any relatives cooked on the back burners. Respondent BM 012 stated that whenever he sees that someone is not cooking on the back burner, he tries to pull them aside and talk to them about safety. This is one of the respondents who believed his injury was fate and that it's his message (mission) to bounce back and let it be known to others to practice safety.

The third question for this domain asked whether fire and burn safety measures had been discussed among family members either as a result of the respondent's burn or as a general safety measure (Table 13).

Table 13

Discussed Fire and Burn Safety Measures With Family or Others

	Yes	No
Black	7	1
White	4	4

Examples of safety measures listed were: encouraging the use of a smoke alarm; decreasing the temperature of the hot water heater; having a fire extinguisher and having a fire escape plan in the event of a fire. Seven Blacks (001, 003, 009, 010, 012, 015 & 016) and four Whites (004, 006, 008 & 011) indicated that their family had discussed and/or implemented fire and burn safety measures before or after their injuries. These respondents also indicated that their families were well receptive to the implementation of safety measures. Black respondent 002 and White respondent 005, 007, 013 and 014 indicated that they did not have any discussion with family members and thus no changes regarding safety measures were made in the home.

During the discussion regarding safety measures, it was noted several Black men (001, 002, 009, 012 & 015) mentioned that it was women who took the initiative to promote safety within the respondent's household or for other family members in general. For example, BM 001 stated that his sister-in-law made certain that everyone has a working smoke alarm installed, that everyone checks their alarms, and that she even

went to Walmart and purchased alarms for those who did not have them. He commented “...men aren’t going to say nothing when the women are doing the talking” (BM 001). Although BM 002 stated that no one other than him discussed fire safety around the house, he did state that he thought women have a mind of their own when it comes to safety, thus making it hard for them (men) to break old habits. One respondent (BM 009) stated that his daughter had alarms (security alarms with smoke alarms as part of the package) installed in all family members homes and pays the monitoring bill for everyone every year. The White respondents who reported that fire and burn safety were discussed in their homes, did not specifically indicate whether the initiatives were undertaken by women or men. Two individuals, (WM 008 & WM 011) stated that they had specifically talked with their spouse and brother respectively about an escape plan. It was also noted that WM 006 stated that he had talked with his children (all grown adults and living elsewhere) about a fire escape plan but he never followed up to see whether a plan was devised. He was also noted to tear-up again when he volunteered that friends had mentioned to him that since his injury, they now think twice about things (regarding fire safety).

The participants were asked to offer an explanation regarding why (or why not) recommended changes were made. The majority of the respondents indicated that some form of a safety related change (smoke alarm installations, fire extinguishers, escape ladders, escape planning and so forth) did occur in their home. One respondent (BM 003) stated “...if you ain’t been burned, you’re not going to think about it.” This appears to be an overarching explanation as to why individuals may chose not to adopt fire and

burn safety behaviors because they have not experienced a burn and as a result, do not see themselves as being vulnerable. Comparison by race would indicate that Black men were more likely to discuss safety measures (and have those measures create changes in the homes) than White men.

Economic

The primary theme associated with the economic domain was: poverty may contribute to an individual taking more personal risks regarding safety. Interviews with the respondents provided a wide range of comments regarding the differences between individuals who may have a means to maintain their homes and those that may use alternative sources. The three questions associated with the economic domain were designed to explore respondent's thoughts regarding the use of alternative resources an individual may use if they had a lack of funds to provide adequate upkeep of their homes. As mentioned earlier, poverty in the older adult may be a reason for their increased vulnerability to a burn injury. Studies such as that reported by Bishai and Lee (2010) also noted that poorer households are less likely to have safe heating systems, code compliant electrical services and fire safety security measures. Although these statements have been well proven, comments by the respondents provided a different insight into this problem.

The first question under the economic domain asked the respondent if he felt he was capable of providing adequate up-keep of his home from an economic perspective (Table 14).

Table 14

Ability to Provide Adequate Upkeep of Home

	Yes	No
Black	8	0
White	8	0

When pushed for further explanation, the investigator provided examples such as: purchase of and installation of smoke alarms, normal furnace and chimney maintenance if used on a regular basis and the capacity to provide normal home repair. All respondents indicated they were able to provide adequate up-keep of their homes. It should be noted that respondent BM 015 did not reside in a private residence, but a senior housing apartment that is a single story structure attached to other apartments. General maintenance of his apartment would be the responsibility of the landlord and not the individual. WM 005 stated that he felt a little lax sometimes regarding home maintenance, but it would not be a problem for him. There are no real racial differences for this question.

The second question for this domain asked the respondent if they used an alternative heating source such as a wood burning stove/fireplace, electric heater or kerosene heater (Table 15).

Table 15

Use of Alternative Heating Methods (Wood Stove, Kerosene Heater, Other)

	Yes	No
Black	2	6
White	1	7

The preliminary theme associated with this question was that alternative heating sources were rarely used. The term alternative heating source referenced whether such a source that may be used in the event of a power outage or used on regular basis such as a wood stove, kerosene heater or electric heater. All respondents reported using central electric or gas furnaces as their primary heating source. However, a few reported using an alternative heat source for heat or ambiance. For example, BM 003 and 015 reported using a wood burning fireplace and wood stove respectively. BM 003 stated that he “...like to have a fire for ambiance”, but he is also constantly watching it. He will not go to bed unless he knows for sure the fire is completely out. WM 013 stated that he uses a wood burning fireplace (in addition to electric heat) to heat his very large (20 x 24) living room during the cold winter months. Two individuals (BM 001 & WM 008) heated their homes with gas and gas/electric combination respectively. Both men reported feeling “skittish” when it was necessary to light the pilot light of the gas heater. BM 001, (burned by propane gas tank explosion) stated that he calls a family member, neighbor or his wife to light the pilot light. Both of these men were in their 70’s.

The oldest respondent (BM 009) stated that his home was heated with a combination of electric (central) heat and gas. However, the investigator noted during the interview that the room was very warm due to an electric space-heater type furnace that was in the center of the room. The respondent stated that it was being used because of his adult grandson that was visiting and that he (the grandson) likes a very hot room. He stated that he and his wife prefer a much cooler environment. There were essentially no racial differences regarding this question.

A sub component of this question also asked what the respondents thought others may do in a similar situation, meaning if they thought others would use an alternative heating method. Whereas most respondents responded they had no idea what alternative sources others may use, a few (BM 002, BM 003 & WM 008) stated that: (1) other should be aware of assistance programs offered by the city (or social services); (2) a fireplace may be the only heat source others may have and (3) others may use kerosene heaters.

The third and final question for this domain asked the respondents to share how they thought having enough money or not having enough money would determine whether or not a person adopted fire and burn safety behaviors (Table 16).

Table 16

How Not Having Enough Money May Determine Whether Individuals Adopt Fire and Burn Safety Behaviors

	Poor more cautious	Equally cautious	Rich more cautious	Should be aware of available resources
Black	0	3	2	3
White	1	3	5	1

When asked for a further explanation of the question, the investigator gave the following example: Do you think an individual who had limited income and used kerosene heat would be more attentive to safety measures or would a person of means be more attentive to safety measures? Respondents provided a variety of answers, but the overall primary

theme for this question was that poor individuals would not be as cautious or likely to adopt safety behaviors and a person of means probably would.

Only one individual (WM 014) thought that the poor would probably be more cautious and adopt safety behaviors as oppose to a person of means. Three Black (003, 012, & 015) and three White (004, 007 & 013) thought that both the poor and rich would adopt safety behavior. Two Black respondents (009 & 016) and five White respondents (004, 005, 006, 008, & 014) believed that a rich person would probably be more cautious. In addition to discussing this question, several individuals (BM 002, 003, 016 & WM 004) voluntarily stated that they thought poverty-stricken individuals should be aware of available community resources that may offer safety devices such as smoke alarms or energy efficient heaters. A consensus of several comments made by various respondents seemed to reflect a notion that poverty may contribute to an individual taking more personal risks. White males overwhelming thought that a person of means would probably be more cautious and adopt fire and burn safety behaviors than Blacks.

Educational

Education was the final domain of the Culture of Care Model chosen to answer the second specific aim. The concept of education is used to help determine whether an individual was open and receptive to learning safety behaviors. A reduction in burn injuries could be the result of having learned such behaviors. The main theme for this domain was that a lack of awareness may pose an increased risk. The first question for this domain asked the respondents if they had ever attended a seminar or information session about fire and burn safety (Table 17).

Table 17

Attended a Seminar About Fire and Burn Safety

	Yes	No
Black	6	2
White	1	7

The preliminary theme for this question reflected that Blacks were more likely to report having attended safety seminars than white. Six Blacks (001, 002, 003, 010, 012 & 015) and one White (005) indicated that they had attended a seminar in which fire and burn safety was discussed. Seven White (004, 006, 007, 008, 011, 013 & 014) and two Black (009 & 016) respondents indicated that they had not attended a fire and burn safety seminar. It should be noted that upon further discussion, a number of respondents (002, 005, 008, 010, 012, 014, & 016) freely volunteered that they had received and remembered safety behavior education that was taught at school or at their place of employment. However, such training or education was not used in the home. For several of the Black respondents (001, 002, 003, & 012) who reported attending a seminar, it was an event sponsored within their community such as a church or community center. BM 015 indicated that since he resided in senior housing, it was mandatory that residents attend safety seminars, which are usually conducted by the local fire department on a monthly basis. Thus, Blacks were more likely to have attended a safety seminar but still sustained a burn injury.

The second question associated with this domain asked the respondents if they had ever read any literature (pamphlets/brochures) that may be given out at safety fairs that discussed preventing a burn or home fire (Table 18).

Table 18

Ever Read Pamphlets/Brochures About Fire and Burn Safety?

	Yes	No
Black	6	2
White	2	6

The preliminary theme for this question was similar to the previous theme: Blacks were more likely to have read safety oriented pamphlets than Whites. Six Black respondents (001, 002, 003, 012, 015 & 016) and two White respondents (006 & 014) indicated that they have read such material. All of the Black respondents and one white respondent (WM 014) that had read such a brochure indicated they could remember its topic or subject matter. Reported topics ranged from home heating safety, smoke alarm information to general fire safety. Six White respondents (004, 005, 007, 008, & 011) and two Black respondents (009 & 010) indicated that they had not read such brochures. When asked why they had not read any brochures, only one respondent (WM 011) indicated that he has had the opportunity to read them, but has never taken the advantage of it. Blacks were two-thirds more likely to have read and remembered the content of a safety pamphlet than Whites.

The third question associated with the education domain asked the respondents to express their viewpoint regarding what they thought other men would do in this situation if offered the opportunity to receive or read a safety brochure (Table 19).

Table 19

Respondents' Opinions: What Others May Do With Educational Pamphlet?

	Read pamphlet	Not read pamphlet
Black	5	3
White	0	8

This is again perceived to be reflective of whether an individual may be open to learning safety behaviors. The preliminary theme for this question was that respondents feel that other men probably would not read or adopt recommended safety behaviors. A majority of black respondents (001, 002, 003, 012 & 016) indicated that they thought other men probably would read such materials if given the opportunity. All eight White respondents indicated that they felt given the opportunity, other individuals would not read a safety behavior related brochure. Examples of their reasons ranged from probably don't care or lack of interest (004, 005, 006 & 008) to probably would not perform the recommended safety suggestions (007). WM 014 indicated that he thought the reason individuals probably would not read such brochures, (especially if it were a man) would be because men are hard-headed and think they know everything. This may support characteristics of the male culture stereotype... being independent and self-reliant.

The final question for this domain asked the respondents to tell the investigator anything they felt researchers needed to know in order to get individuals to adopt fire and burn safety behaviors (Table 20).

Table 20

Respondents' Advice for Researchers Designing a Male Focused Prevention Program

	Resource list	Messages/TV	Pictures/ scare tactics	Survivors
Black	2	6	2	2
White	1	4	5	2

The idea associated with this question was reflective of the notion that individuals who had sustained a burn may provide more insight than individuals who had not.

Respondents' comments varied from offering safety tips related to their specific injuries to other means of providing education that would get the attention of older adults. For example, BM 003 and BM 015 indicated that it was important to remind people to watch the stove when cooking and not to cook on "High" respectively. It should be noted that both of these men sustained their burn injury while cooking a meal on the stove. WM 006 stated that he knew "Stop, Drop and Roll" really worked (indicating that is what he did when his clothes caught on fire) and was again noted to be very emotional (tears) when making that statement. Further comments suggested the following:

1. Create a resource list that provides information about local services such as the availability of free smoke alarms or home inspection from the local fire department (001, 002, & 013).

2. Craft the correct message to ensure that individuals would understand what it means to be burned. People need to understand the pain, suffering and economic impact of sustaining a burn (002, 004, 005, 006, 011, 012, 015 & 016).
3. Use scare tactics such as pictures of burns at various stages of healing; find some way to let them know that healed burned skin is a constant maintenance problem (004, 005, 007, 008, 010, 012 & 014).
4. Have survivors tell their stories (002, 009, 005 & 014).

All of the participants were very appreciative to have the opportunity to share some ideas that they thought would prevent burn injuries in other older adults.

Differences between Older Black and White Men

Both Black and White men (75%) reported difficulty being around fire or cooking after sustaining their injuries. However, upon closer examination the type of burns and the view of safety behavior differed between Black and Whites. For example, in this study, White men sustained flame related burns at a higher rate (43%) than Black men. White men were more likely to use words that could be considered to be demeaning (stupidity, carelessness) when describing reasons why they thought other men may continue their old habits. Black men were more likely to refer to characteristics associated with the male culture (thinking of themselves [selfish] and not their family) for this same question. White men were more likely to suggest that other men should respect or view fire differently or that scare tactics be used to get them to view fire in a different manner. Twenty-five percent of both Black and White men mentioned characteristics

associated with the “macho-male” culture or phenomenon. Compared to Black men, White men were twice as likely to burn candles and use fire for recreational purposes after sustaining their injuries. Fifty percent of Black men and forty percent of White man reported noticing whether any relatives turned pot handles when cooking. One unanticipated finding in this study was the emotional display by some White participants and the “calling” view undertaken by Black men. White men expressed open emotions (crying or tearing up) when discussing fire and burn safety topics while Black men were more likely to view their burns as fate and expressed it in a positive manner to promote safety.

A second unexpected finding in this study was the different and very important role played by the family between these participants. Black men were more likely than White men to report having a family member who had sustained a burn injury. Although family concern was noted throughout their responses, Black men were more likely than White men to report that after their injury, family members were more protective of them; insisting that the survivor not engage in the behavior that precipitated the injury. Whereas both groups reported having discussion about safety matters, it was abundantly clear that Black women took the initiative to ensure that safety measures were enacted in the home environment even if discussion regarding safety was initiated by men. "Comments made by Black men such as “men aren’t going to say nothing when the women are doing the talking” (BM 001) and “women have a mind of their own when it comes to safety...” (BM 002) may indicate that when it comes to safety in Black culture, women lead the way."

Summary of Findings

Using four domains of Leininger's Culture of Care Model, sixteen older men (8 Black & 8 White) were interviewed to explore and examine their self-reported reasons for acting or not acting on safety recommendations after sustaining a burn injury within the past six months to five years. The majority of the participants (6 Black & 6 White) reported feelings of anxiety, mental anguish and hesitancy being around fire regardless of how their injury may have occurred. Participants reported changed behavior and being safe around fire. Respondents worked through their apprehension by forcing themselves to be more cautious when grilling, cooking or lighting fires, but still continued unsafe behavior. The view of safety behaviors and how other men may view such behaviors differed from Blacks and Whites. Whites were more likely to suggest the use of scare tactics to get other men to view fire and burn safety behaviors in a different manner. Characteristics associated with the "alpha male" culture or phenomenon (stubborn, independence, hard-headed and self-reliance) seemed to be a common thread through-out all domains or areas of inquiry. Additional purposes were to explore how culture influences burn prevention behaviors and attitudes towards behavioral change. Using four domains of Leininger's Culture of Care Model, four primary themes emerged that reflected cultural influence:

1. Emotional "workarounds" with intermittent reinforcement and/or transference.
2. Domino Effect.
3. Poverty may contribute to an individual taking more personal risks regarding safety.

4. Lack of awareness may pose an increased risk.

CHAPTER V

DISCUSSION

The purpose of this study was to explore and examine the self-reported reasons for acting or not acting on safety recommendations taken by older Black and White men who reside in North Carolina and who have sustained a burn injury within the past six months to five years. The purpose was to explore how culture influences burn prevention behaviors and attitudes towards behavioral change in this population using Leininger's Culture of Care Model. This chapter provides an interpretation and discussion of the findings as well as implications for nursing practice, limitations and recommendations for future research.

Interpretation and Discussion of Findings

The majority of the participants in this study reported a behavioral change as a result of their burn injury. Three of the participants in this study (BM 001, 002 & 003) were participants in the pilot study. In that study, the participants reported little or no behavioral change. In the eight month timeframe from the pilot study to the current study, these participants now report being more cautious around an open fire or when cooking. A significant finding revealed that most participants reported feelings of anxiety, mental anguish and hesitancy being around fire. Individuals reported the need to work through these feelings or suffer a life-long fear of being around fire. The self-identified need to get past this fear may be a phenomenon of the "alpha-male" culture as

described earlier such as the feeling of the need to be in control and self-identity as a male. It is possible that by giving into the fear of being around fire, respondents may think of themselves as being weak, less of a man or loss of control. By getting past this fear, the individual may restore his self-esteem by becoming more courageous, domineering and seeming to be in control and independent.

Sixty-two percent (n=10) of the respondents (mostly White males) viewed their injury as preventable or an act of carelessness on their part. White males were more likely to have continued the same behavior, (cooking, grilling, campfires, brush burning) but express their cautiousness as being more attentive to their activity, having suppression equipment easily available or eliciting the assistance of others when burning brush or lighting gas appliances. Even though the majority of the respondents reported being careful or cautious around fire, some respondents still continued unsafe practices. This is in congruence with the pilot study conducted by the investigator (Grant, 2014b) in which all participants reported the same feelings as described above, but continued to practice unsafe behaviors. For example, just prior to the time of his interview, WM 006 was burning leaves in the dark on a cold windy evening with no visible means of fire suppression available. His injury occurred because he had used an accelerant while attempting to burn trash and/or brush. In this study, even though smoke alarms were present in the home creating a sense of security, there was no indication that participants regularly checked to ensure that the alarms were working or maintained properly. Some participants indicated that one of the reasons that may have led to their reported behavior change was the fear that their family may suffer a burn related injury.

However, four White males and one Black male (31%) reported that they or their family had not taken the opportunity to discuss fire/burn safety measures even after the respondent sustained a burn injury. Many (4 Black males & 5 White males) failed to use opportunities to correct unsafe behaviors (cooking on front burners, not turning pot handles) if they noticed such behaviors. Two respondents (BM 010 & BM 016) stated that even though they knew the intent of safety messages, they did not think such messages applied to them. Two White males (006 & 001) were noted to express emotions (crying/tearing up) when discussing this question.

As stated previously a great deal of burn prevention education directed towards older adults is aimed at increasing their sense of susceptibility to burns or teaching them safety behaviors. The reported safety behaviors of these men who should have no doubt regarding their susceptibility does illustrate a link between perceived susceptibility and preventative behaviors. In this study, if safety behaviors were to be initiated among the family, it was more likely to have been done by women (in particularly Black women) than men.

A second finding of this study addressed the question of behavioral change among men in general. Whereas the respondents stated that they had changed their behavior, several provided a variety of responses as to why they thought other men would not change their behavior if they had sustained a similar burn injury. Comments indicating that the individual may not have sustained a significant enough burn that would promote a behavioral change; references to “old habits” or the individual thinking that it wouldn’t happen to them were common responses. It should be noted that the comment regarding

not being burned significantly enough was specifically stated by four White men but no Black men spoke of this during the interview. This may also refer to some of the “alpha male” characteristics such as being macho, independent, lack of vulnerability, fearlessness or quality of life perspective as described earlier. Two respondents spoke of men being “hard-headed” and as a result, they may not adopt safety behaviors. As previously stated, people do not always follow health recommendations, even when they are aware of them.

The outward open display of emotions among some White respondents was another unique and unanticipated finding of this study. Four respondents (WMs 005, 006, 011 & 013) became very emotional (watery eyes or actual tears) during the interview process. Such emotions are not usually associated with the “alpha-male” culture or behavior. There was no particular question that triggered this response. A review of the respondent’s demographics did not reveal any significant commonalities. For the individuals who displayed emotional outburst, their ages ranged from 50 years to 67, and TBSA ranged from 14-31percent. A review of the transcript did reveal that two respondents were emotional over the question that asked what their thoughts when they heard or were encouraged to practice safety behaviors. However, all comments that triggered such a response seemed to be centered on the protection of loved ones or themselves. It is possible that after suffering a burn injury, respondents realized their injury impacted their family in multiple ways (emotional, economical and physical). Although not specifically addressed fully, two respondents (WM 004 and WM 005) spoke about the emotional and economic impact their burn injury had on their family.

WM 005 specifically spoke about the nightmare that he, his wife and grandchild experienced for close to a year after his incident.

Respondents also perceived their burns differently by race. The recognition of cultural differences is an area that warrants further exploration. As noted earlier, four Black men and two White men viewed their injury as being fate, rather than a preventable phenomenon. Although religious belief or spirituality was not specifically addressed or asked about in this study, it is interesting to note that two Black men and one White man found purpose in their suffering and thought that they were being used by God (or a higher power) to promote fire and burn safety. This belief may help these individuals to be more accepting of their injury and the healing experience.

More Black men (n=5) reported having a family member who had sustained a burn injury prior to theirs. This finding may be a confirmation of prior published data that describes Blacks as one of the high risk groups for sustaining a burn injury (Bishai & Lee (2010); Edelman, 2007) This finding may also speak to the strength of family ties and communication among the Black culture and population. There was no established definition for “family” in this study however, as noted earlier under living arrangements, older Blacks (23%) were significantly more likely than Whites (13%) to live in a multi-generational family household (Administration on Aging, 2012b). Family members who had a prior burn injury did not reside with any of the participants of this study. There was no attempt to determine the time difference between the respondent’s burn and their family member’s injury. However, given that some Black respondents reported family members encouraging them to use cultural or non-traditional medical techniques to

promote the healing of their burn speaks well of the cultural influence on health and well-being. The fact that respondents sought modern medical care may be implicit of their trust of the modern day health care system and healthcare providers.

The respondents were asked to comment whether the economic status of an individual would determine if they adopted fire and burn safety behaviors. The overall consensus was that individuals who were poverty stricken were not likely to be as cautious or likely to adopt safety behaviors. Comments received ranged from: (1) the idea that a poverty stricken person and a affluent person would equally be concerned about safety (001, 005, 006, 012, 013 & 015); (2) the rich being more cautious (004, 005, 007, 008, 009, 010, & 011); and (3) the individuals (poor) should be aware of available (community) resources that would decrease the potential of a fire or burn related injury (002, 003, 004 & 016). One respondent (WM 006) commented that the behaviors themselves are free. Implying that individuals consciously choose to adopt or not adopt safety behaviors. Poverty may contribute to an individual taking more personal risks and may not see safety as a priority.

Finally, respondents were asked to offer their opinion regarding what they thought would be most beneficial for researchers to include when designing a fire and burn prevention program. Answers received and strategies that respondents said wouldn't work match current strategies that are used in some prevention focused programs. Blacks were more likely to recommend the use of easy to follow messages or TV ads and Whites were more likely to recommend the use of pictures or scare tactics. The need for education in this population has been well established. It was also stressed several times

by respondents in this study. The researcher should be aware of the respondent's comments as a way to incorporate and embrace their culture when designing prevention focused programs.

Culture of Care Model Applied to Burn Prevention

A review of the four chosen domains of the Culture of Care Model and its application to burn prevention would reveal that the model worked well in exploring for behavioral change. The explanation of the culture and social structure dimensions poses that the individual's cultural and social support systems may be barriers or may support behavioral change. This study noted several cultural and social support systems that may have supported a behavioral change. For example, many respondents reported that they now think of the safety of their family members as one of the main reasons for a reported behavioral change. They report not wanting their family to experience the pain and suffering that they had endured.

The kinship and social domain of this model poses that prior family/cultural experience with fire and burn issues may determine whether prevention is practiced routinely or not. Negative ritualistic behaviors may prove to be detrimental to the individual and the community. Respondents reported that as a result of their injury, family members became more conscious of the need to adopt fire and burn safety measures. Several reported safety related changes made to the home environment of all family members, including the respondent's.

The economic domain of this the Culture Care Model suggests that the lack of sufficient funds for home upkeep, repairs and modernization may pose barriers. All of

the participants in this study resided in a rural setting. All homes were single- family homes located in moderate to high income neighborhoods. Each respondent reported confidence in his ability to provide adequate maintenance of his home. Respondents reported using central electric or gas as the primary heat source. In the two incidents in which alternative heat sources were used, it was not the primary source of heat and was used for a brief period of time. All reported having at least one smoke alarm along with fire suppression devices such as fire extinguishers that were readily available for use.

The education domain of the Culture Care Model poses that low educational or literacy levels may be indicative of the inability to understand or comprehend safety messages. Lack of awareness may pose an increased risk. Only one respondent reported an eighth grade education. All others graduated high school, junior college, college or graduate school. All respondents reported sufficient knowledge of fire and burn safety measures. Blacks were more likely to have attended a fire safety seminar or read fire and burn prevention related brochures than Whites. Even though most of these seminars were held at their church, it could be possible that the community in which they lived was the focus of a prevention campaign by the local fire department or community service agency.

The purpose of this study was to explore and examine the self-reported reasons for acting or not acting on safety recommendations taken by older Black and White men. The use of the four chosen domains of the Culture of Care Model would suggest that there is a “male culture” that contributes to burns and that there is a difference between older Black and White men regarding its expression. Respondents in this study were

injured performing acts that could easily be associated with maleness (i.e., use of gas grilling, cooking, and burning brush/trash). Respondents reported the need to work beyond their reported anxiety, mental anguish and hesitancy as a result of their injury. These thoughts and actions may be speculative of male cultural characteristics and the need to be in control, maintain independence and self-reliance. It may also psychologically have been seen as affecting their quality of life. Another overwhelming example that may suggest that male culture contributes to burns may be noted in the fact that the majority of the respondents in this study resumed activities that caused their burns, but reported being more cautious, displaying other traits associated with maleness (tenacious, persistent, head-headed, it can't happen to me and apologizing for the display of emotions such as crying or tearing up).

Given that a case has been made that establishes the fact that there is a male culture that contributes to burns, one would also wonder whether such a culture existed among older Black men in particular? It was indicated that older Black men were burned at a disproportionately higher rate than older White men (Bishai & Lee 2010). In examining the results of this study, it is difficult to ascertain whether being an older Black man would imply a "Black male culture" that would contribute to the possibility of a burn. However, there are a couple of clues that would indicate such a culture does exist. Black men in this study were burned in a similar manner as the White participants. Like the White males, half of the Black men were just as likely to blame themselves for their injuries, or viewed their injuries as preventable. They also felt the need to gain back their independence and grasp on life after sustaining their injuries. There are three

significant differences to note between Black men and White men in this study. First, two Black men (010 & 016) specifically stated that they did not think fire and burn safety messages applied to them personally. BM 016 was noted to state that he would have to stop and think or if he felt there was a difference of opinion, he would listen, look and see where he may benefit. Such *pick and choose* attitudes further espouse the male culture phenomenon but were not expressed in this manner by any White males in this study. Second, once injured, Black men tended to view their injury as fate and not punishment for something they may have done. Half of the Black men chose to foster good behavior(s) as a result of their injuries. Perhaps as a result of their injury, they may now view or are modeling their role as a “protector.” Next, Black men tended to be more receptive to fire and burn prevention education than Whites. However, Black women were more likely the ones that initiated safety measures in the home. Thus, another example of the difference in the way the male culture is expressed may be in the acceptance of Black males that “women lead the way.”

Finally, the results of this study will assist investigators to establish new fire and burn prevention models that incorporate the individual’s cultural and social domain to decrease the potential for burn injury to older men. The application of the four domains of the Culture of Care Model chosen for this study does suggest that for older Black and White men, culture is different when exploring fire and burn safety behavior. As mentioned earlier, Leininger and McFarland, (2006) contend that wellbeing and care can best be achieved when the nurse knows and understands key elements about an individual, their cultural lifeways, beliefs, values and practices. The healthcare provider

must plan for culturally congruent care that is different for Black and White males. For example, a program targeted for older Black men may be more successful if Black women are included and held in a place of worship or local community center. Results of this study suggest that Black women were more likely to take the lead on safety measures than Black men. When targeting a program for older White men, the use of media messages, (crafting the correct message to ensure that individuals understand what it meant to be burned) scare tactics (pictures of wounds, pain, suffering), economic impact and burn survivor participation would probably be more effective.

Limitations

There were several limitations to this descriptive qualitative study. First, the study was limited to individuals who met the criteria for inclusion. It is possible that expanding this study to other burn care facilities within the state would yield different results. The participants in this study were all lower to mid-middle class individuals who resided in the counties of central North Carolina surrounding the Research Triangle Park. This is an area of the state in which technology and higher educational opportunities tend to be more prominent than other areas of the state. The other burn center in this state is located approximately 60 miles from the North Carolina Jaycee Burn Center. That facility tends to care for patients that mostly reside in the rural mountainous area of the state. Replication of this study in such areas may yield a different result due to lifestyle and cultural difference.

A second limitation to this study is possible non-response bias. Recruitment of subjects for this study was challenging, and only a small portion of the original accessible

population agreed to participate. It is likely that the men who declined to participate in the study differed from the participants in systematic and important ways.

This study was limited to older Black and White men and results cannot be generalized to other groups. How other cultures and women may view fire and burn prevention could vastly differ from the results presented in this study. North Carolina has a growing Hispanic and Asian population (U.S. Census Bureau, 2013) whose respective cultures and regards for fire and burns may not be representative of the results of this study. Women were excluded from this study, but initial results revealed that if safety measures were to be adopted in the home, it was more likely to be initiated so by women rather than men.

A third limitation to this study may be the participant's comprehension of the phrase "safety behaviors." During the interview process, all participants were provided with the same example of safety behaviors, such as the turning of pot handles, remaining in the kitchen while cooking or practicing a home escape plan as a reference. Depending upon how their burns occurred, participants may not have viewed these behaviors as "safety oriented" and therefore may not have thought of them as safety behaviors. For example, if an individual was burned as a result of using a grill, he may not equate that as the same as cooking on the kitchen stove. He may interpret the safety behaviors for outdoor cooking, but not when cooking indoors.

A fourth limitation of this study is that participants may not have been truthful when answering the questions regarding safety behaviors even though they were read a statement requesting their honest answer. It is possible that participants did not change

their old habits, but indicated to the investigator that they actually did because they thought this is what they thought the investigator wanted to hear. Even asking participants for examples of safety behaviors may not disprove this limitation. Individuals may be aware of safety measures (cooking on the back burner), but may choose not to do so.

A final limitation of this study was the assumption that participants in this study, having sustained a prior burn injury would view themselves as being susceptible to another burn. This assumption was not validated in this study. Based upon the comments of the participants, they did not view themselves as being susceptible to another burn injury. The participants may be lulled into a false sense of security by thinking that being more cautious when resuming behaviors that may have caused their burns, and adopting safety behaviors would prevent the possibility of another burn injury occurring.

Implications for Nursing

This study is particularly significant to the nursing profession because it addresses the needs of a growing population that has had little study. Nurses have always cared for burn patient after their injuries. Now, nurses need to be more proactive in promoting strategies that prevent fire and burn injuries. Applying Leininger's model to burn prevention supports the premise that it is the professional responsibility of the health care provider to identify, develop and deliver burn prevention education that is congruent with the client's lifeways. Only culturally congruent care has the potential to have the sustained, desired impact. This study has yielded information that is supportive of a

difference in the cultures of older Black and White men in regards to fire and burn safety. Nurses planning intervention programs should be aware that older White men may be more receptive to safety information if scare tactics and burn survivors are utilized. Older Black men may benefit from such programs if Black women are included in the education initiative. Overall, it is hoped that this study could help guide nurses in teaching older adult men how to attain or maintain their highest potential for safe and healthful living.

Finally, the continued high rate of risky behavior of these men warrants attention. Men who had already sustained burn injury were chosen as the population for this study because they should be aware of both their own susceptibility to burn injury and the severity of burn injury. The continued high rates of risky behavior, and the low rates of compliance with burn safety behaviors, were unanticipated findings of this study. The findings of this study suggest that targeted prevention efforts should be directed toward men who have sustained a burn following their discharge from the hospital, to reinforce the importance of safety behaviors. It is possible that men who have already sustained a burn injury but who continue to engage in their pre-burn behaviors are actually at increased risk of another burn, compared to the general population.

Recommendation for Future Research

Although the two specific aims of this study were answered, this study may be considered an exploratory basis for future research. New models that address the specific aims of this study are encouraged. More sophisticated research is needed when studying

the older Black and White male population in relation to fire and burn injuries. Several next steps are possible when considering future studies.

First, this study only used four of the seven identified domains of the Culture of Care Model. Future research should include the use of all domains, using a similar population to determine if similar results are achieved. This study addressed older Black and White men who had sustained a prior burn injury and their safety behaviors after the occurrence of that injury. A more relevant focus would be to compare the responses of this group with older women, other ethnicities and cultures from a similar socio-economic stratum.

This study sought to explore and examine the self-reported reasons for acting or not acting on safety recommendations taken by older Black and White men who resided in North Carolina and who had sustained a burn injury within the past six months to five years. Future researchers may wish to repeat this exploration process but use a different time period post burn, particularly since the pilot study participants may have shown some changes between the first and second interview. It may be that, at different points in the grieving process, people see their injuries differently. It may take time to find meaning in suffering. It would be very interesting to explore factors related to how long it takes to find meaning in suffering. For example, the two individuals described in this study as having found meaning in their injury (BM 002 & 012) varied in times they had reached such conclusions. BM 002 was burned in 2012. He participated in the pilot study conducted eight months prior to this study. In the pilot study, he was noted to have not changed his behavior and reported still being very apprehensive around fire. In the

eight months since the pilot study, he seems to have found meaning in his injury and the need to promote safety. BM 012 was burned in May of 2014 appears to have achieved this meaning in the few short months since his injury. Additionally, future research would explore whether there was differences in spirituality, coping or social support that allowed BM 012 to find meaning so quickly, while BM 002 took longer. If such predictors were proven, it could lead to an intervention that could help people find meaning more quickly.

Another step future researchers may wish to undertake is to re-analyze the interview questions so that more participants would provide a more open and free response. For example, in addition to accepting the initial response to questions, there should be enough time allowed for the participant to elaborate their response further. Should individuals display emotional outbursts such as noted in this study, additional questions to clarify their feelings should or could be asked.

This study discovered that family members viewed the survivor as still being particularly vulnerable to another injury even though the survivor may not share that same view. From the survivor perspective, family member were “over-protective” and would not allow them continue the same behavior that triggered the burn injury. Future studies should examine the ramifications of an “over-protective” family and the male behavioral culture.

Additionally, future studies also warrant that the family as a unit be examined rather than the individual, since in some families “women lead the way” and men have particular behavior(s). Since cultural groups vary in how expansively they define

“family” in any such future studies particular attention should be paid to using the “family” as defined by the participant, rather than seeking to use a uniform definition across participants.

Another finding that warrants further study should concentrate on the locus of control and male culture behavior. Many respondents reported feelings of anxiety, hesitancy and fear after sustaining their injury. They recognized the need to take back control of their vulnerability in order to maintain their sanity. It is often assumed that an internal locus of control is associated with more proactive health behavior, but in the participants of this study, an external health locus of control (fate/higher power) was linked to proactive behavior (giving testimony to others). Further study should be conducted to explore what coping mechanism or actions survivors may use; the differences between older Black and White men and the resulting outcomes. Since some participants reported a lengthy time period before they perceived that they had achieved control, and moved beyond their fear of fire, an exploration of the amount of time to achieve this resolution should be explored.

Also, since no attempt was made to evaluate the truthfulness of reported changes in behavior that had occurred post burn, further studies would benefit greatly from additional investigation of the reported behavioral change.

Summary

This study explored and examined the self-reported reasons for acting or not acting on safety recommendations taken by older Black and White men who reside in North Carolina and who has sustained a BSA burn of 10% or greater within the past six

months to five years. An additional purpose was to explore how culture influenced burn prevention behaviors and attitudes towards behavioral change in this population. The results of this study will assist investigators to establish new fire and burn prevention models that incorporate the individual's cultural and social domain to decrease the potential for burn injury to older men.

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APPENDIX A

FORMAT FOR CONDUCTING RESEARCH STUDY – NEWLY RECRUITED PARTICIPANTS

Format for Conducting Research Study – Newly Recruited Participants

- I. IRB approval from the UNC-G and UNC IRB committees
- II. List of names of potential participants obtained from the N. C. Jaycee Burn Center's data base.
- III. Initial contact made with potential participants (who meet inclusion criteria) via the telephone and study explained, date established for in-person interview.
- IV. Letter of introduction mailed to confirmed address of record.
- V. Telephone contact made with participants the morning of scheduled interview to confirm visit.
- VI. Upon arrival to the home, explanation of the study is re-explained to the participants. All questions are answered.
- VII. Signatures obtained on informed consent – participant given a copy for their records.
- VIII. Administration of demographic questions and open-ended behavior questions recorded.
- IX. Thank the participants for their willingness to partner and assist in the study.
- X. Participants paid \$20.00 for the interview.

APPENDIX B

TELEPHONE SCRIPT - INITIAL CONTACT FOR NEW STUDY PARTICIPANTS

Telephone Script – Initial contact

Investigator – *Hello, (good morning/afternoon/evening) is this _____?*

(if this is not the intended individual, the investigator will identify himself and ask to speak to the individual).

Participant – Identifies self

Investigator – *M_____, This is Ernest Grant calling. I am a nurse who works at the burn center at UNC Hospitals and also a PhD nursing student at the UNC-G School of Nursing in Greensboro. I hope that you are doing well today. Even though I work at the burn center, I am calling you today as a student at UNCG and not as an employee of the hospital. I have a very special interest in burns that have occurred in men. I am currently conducting a study that will ask you to partner with me to answer a few questions that look at how someone such as yourself who has been burned is fairing at home. I got your name from the burn center's data base and I am calling to see if I could explain the study to you and see if you would be interested in participating in this study? Please know that whether or not you decide to participate, will not affect the ability for you to receive care at the burn center or at UNC Hospitals. So, with that being said, may I tell you a little more about the study and see if you are interested?*

Participant – Answers yes or no.

Investigator – If the participant answers no, I will thank them for their time and end the call. If they state that they are interested in hearing more about the study, then I will proceed to explain the study to them.

As I had mentioned, I am a PhD nursing student at the UNCG School of Nursing in Greensboro. As I had mentioned, I have a special interest in burns in older men. I am doing a research study that will look at whether older men such as yourself have or have not adopted any safety behaviors since you were burned. I would also like to get your opinion as to what you think it would take for older men to adopt fire and burn safety behaviors. If you decide to participate in this study, I will need to obtain some very basic information from you such as, name, age, sex, race, education level, type of home and number of people in your household. Next, I would like to discuss with you any safety behaviors you may have adopted since returning home from the hospital. I will be tape recording your answers, so that I can compile all the answers from other study participants at a later time. If you agree to participate, you will receive:

- *A twenty dollar bill (ten dollars for pilot study participants)*

Please remember, that whether or not you participate will not affect your ability to receive care at UNC hospitals or the burn center. Also, please remember, that I am calling you as a student from UNCG and not an

employee of the burn center. Also, please remember that all your information will be destroyed when the study is completed.

Do you have any questions that perhaps I can answer for you?

Do you think you will be willing to participate in this study?

Participant – will answer yes or no regarding questions. If they have question, I will attempt to answer them to the best of my ability.

If they are willing to participate, then the next step will be:

Investigator – *Thank you very much for agreeing to participate. What I would like to do next is to establish a time that I can come to your home to conduct the interview.*

A mutually agreed upon time will be established.

I would also like to send you a letter that will outline what we have discussed on the phone. I will also have my picture on the letter, so that you can see who I am. I am sure that you will probably remember me once you see my photo.

I will contact you on the morning of our scheduled interview to make certain that it is still OK to come and visit with you.

When I arrive at your home, I will review with you some necessary paperwork, which will again outline the study and its purpose. You will again have the opportunity to ask and questions or decide not to participate. If you do not have any questions, and will participate, I will

need for you to sign a copy of the paperwork. You will be provided with a copy for your records as well.

Upon completion of the interview, you will receive the promised compensation.

I would like to confirm that your mailing address is the same as the address that we have in our data base. May I review that with you? (review mailing information).

Thank you so much for your willingness to participate in this study. I look forward to seeing you on _____. If you have any questions, before our scheduled interview, let me give you my phone number.

APPENDIX C

INVESTIGATOR'S FOLLOW-UP LETTER



Date:
215 Booth Rd.
Chapel Hill, NC 27516

Dear _____

Thank you for agreeing to participate in the research survey that we spoke about over the phone. I am hoping that this letter will help you to remember who I am since I know it has been quite some time since your hospitalization.

As I had mention over the phone, my name is Ernest Grant. I am the Outreach Clinician for the North Carolina Jaycee Burn Center, located at UNC Hospitals, where you were a patient. Perhaps seeing my picture on this letter may refresh your memory as to who I am. In our phone conversation, I mentioned that I was a PhD student at the University of North Carolina, School of Nursing. I am conducting this survey as a research project towards the completion of my dissertation. I am writing to confirm your participation in this survey as a student at UNC-G. Please remember that whether you participate in this study or not, it will not affect your ability to receive care at UNC Hospitals or at the North Carolina Jaycee Burn Center.

I have scheduled a brief visit with you in your home to ask you several questions regarding your behavior since returning home. During this visit, I will be collecting the following information:

1. First, I will again review the purpose of the survey and ask if you have any questions regarding the survey or participation. If you do not have any questions, that I will obtain your signature on the consent to participate form. You will also be provided a copy of this form for your records.

I will ask you to provide me with some basic demographics, provided you do not mind sharing this information. Please remember that all information obtained will be coded and blended in

Grant Survey letter

Page 2

with other participants' information. I will be the only individual that knows the various participants. Examples of the demographic data I may ask may include: current age, sex, educational background and percent burn, and so forth.

Next, after obtaining your demographic information, I will discuss with you a couple of questions regarding your behavior since returning home after the burn injury. The next step of this survey is to ask you questions regarding fire and burn safety knowledge. You will then be asked to complete a 17 item questionnaire regarding fire and burn safety. After you have completed the questionnaire, I will review it with you, specifically addressing questions that were incorrectly answered. I would also like to partner with you to discuss what it would take to get you or other individuals to practice safety behaviors. The final portion of the survey, with your permission, is to conduct a very brief safety inspection of your home. This survey will examine your smoke alarms and the temperature of your hot water.

I anticipate that this whole interview will take about an hour of your time. For agreeing to participate in this survey, you will receive \$20.00 cash. If upon receipt of this letter you no longer wish to participate, please call me at (919) 966-2381. Otherwise, I will call you the day before our scheduled meeting on _____ to confirm the appointment. I appreciate you taking the time out of your very busy schedule to assist me with this project.

Sincerely yours,

Ernest J. Grant, RN, MSN
PhD student
The University of North Carolina at Greensboro

APPENDIX D

FORMAT FOR CONDUCTING RESEARCH STUDY – PILOT STUDY PARTICIPANTS

Format for Conducting Research Study for Pilot Study Participants

- I. Telephone and remind them of the researcher. Remind them that during the pilot study, they were informed that the researcher may return with additional questions.
- II. Schedule a return visit to the home.
- III. Upon arrival to the home, explain the study and get permission from the pilot study participants to tape record the conversation and proceed with asking the new questions.
- IV. Administer the open-ended new questions
- V. At the conclusion of the questions, ask the participants if they have any questions. If so, answer the questions as truthfully as possible.
- VI. Thank the participants again for their willingness to partner and assist with the study.

APPENDIX E

TELEPHONE SCRIPT- PILOT STUDY PARTICIPANTS

Telephone Script – Pilot Study Participants

Investigator – *Hello, (good morning/afternoon/evening) is this _____?*

(if this is not the intended individual, the investigator will identify himself and ask to speak to the individual).

Participant – Identifies self

Investigator – *M_____, This is Ernest Grant calling. I hope that you remember that you participated in a study that I was doing this past winter looking at burns in men. You may remember that I am a nurse who works at the burn center at UNC Hospitals and also a PhD nursing student at the UNCG School of Nursing in Greensboro. I hope that you are doing well today. You may recall that I mentioned during your interview that I may be contacting you for some additional follow-up information, which is why I am calling you today. The results of my study generated some additional questions that I would like to explore and I was wondering if I could come and speak to you about exploring some additional ways that people such as myself, could design some new burn prevention programs. Even though I work at the burn center, I am calling you today as a student at UNCG and not as an employee of the hospital. I have a very special interest in burns that has occurred in men. I am currently conducting a study that*

will ask you to partner with me to answer a few questions that look at how someone such as yourself who has been burned is fairing at home. Please know that whether or not you decide to participate, will not affect the ability for you to receive care at the burn center or at UNC Hospitals. So, with that being said, may I tell you a little more about the study and see if you are interested?

Participant – Answers yes or not.

Investigator – If the participant answers no, I will thank them for their time and end the call. If they state that they are interested in hearing more about the study, then I will proceed to explain the study to them.

As I had mentioned, I am a PhD nursing student at the UNCG School of Nursing in Greensboro. As I had mentioned, I have a special interest in burns in men. I am doing a research study that will look at how men are doing since they were discharged from the hospital and whether you have taken steps to make your home safer from fire and burns. If you decide to participate in this study, I will ask you questions about how your culture, lifestyle, religion, etc may play a role in how you view fire and burns. I will be tape recording your answers, so that I can compile all the answers from other study participants at a later time. I anticipate that this whole process will take about an hour of your time. If you agree to participate, you will receive:

- *A twenty dollar bill*

Please remember, that whether or not you participate will not affect your ability to receive care at UNC hospitals or the burn center. Also, please remember, that I am calling you as a student from UNCG and not an employee of the burn center. Also, please remember that all your information, answers and scores on the questionnaire will be destroyed when the study is completed.

Do you have any questions that perhaps I can answer for you?

Do you think you will be willing to participate in this study?

Participant – will answer yes or no regarding questions. If they have question, I will attempt to answer them to the best of my ability.

If they are willing to participate, then the next step will be:

Investigator – *Thank you very much for agreeing to participate. What I would like to do next is to establish a time that I can come to your home to conduct the interview.*

A mutually agreed upon time will be established.

I will contact you on the morning of our scheduled interview to make certain that it is still OK to come and visit with you.

When I arrive at your home, I will review with you some necessary paperwork, which will again outline the study and its purpose. You will again have the opportunity to ask and questions or decide not to participate. If you do not have any questions, and will participate, I will

need for you to sign a copy of the paperwork. You will be provided with a copy for your records as well.

Upon completion of the interview, you will receive the promised compensation.

I would like to confirm that your residential address is the same as the address that we have in our data base. May I review that with you? (review mailing information).

Thank you so much for your willingness to participate in this study. I look forward to seeing you on _____. If you have any questions, before our scheduled interview, let me give you my phone number.

APPENDIX F

STATEMENT OF INFORMED CONSENT

Study No. 13-3490
UNC-IRB (919) 966-3113
<http://irbis.unc.edu>.
Version 2

CONSENT TO ACT AS A HUMAN PARTICIPANT

Project Title: Self-reported safety behaviors after a burn injury in older Black and White men who reside in North Carolina.

Principal Investigator and Faculty Advisor (if applicable): Ernest J. Grant (PI) / Dr. Anita Tesh – Faculty Advisor

Participant's Name: _____

What is the study about?

This is a research project. Your participation is voluntary. You have been asked to participate in this study to help the researcher determine what (if any) safety behaviors or practices older Black or White men may take after being burned. You will be asked to describe or tell the researcher what steps you may or may not have taken to be safe in your home following a burn injury. The researcher understands that some people who have had a burn injury may not do anything to practice any safety techniques. We would also like to know that as well.

Why are you asking me?

You are being asked to participate in this study because:

1. You identify as a Black or White male
2. You are 50 years of age or older
3. You live in North Carolina (particularly the Research Triangle Park area)
4. You had a burn injury of 10% or more on your body within the past 6 months to 5 years.
5. You received treatment for your burn at the North Carolina Jaycee Burn Center in Chapel Hill, NC

What will you ask me to do if I agree to be in the study?

The primary investigator will ask you questions about the following: name, age, ethnicity, marital status, residency type and construction and the number of people living in your home. The Primary Investigator will maintain your confidentiality, by ensuring that all of this information will be coded and the master sheets kept under separate lock and key that only the investigator will have access. No one else will see your information except for the researcher.

After obtaining the above information, the researcher will ask you several questions about any fire or burn safety behavior changes that you are aware of or may have done since returning home

from the hospital. By participating in this study, you also give the investigator permission to tape record the interview.

You may refuse to participate in this study at any time. Whether you participate in this study or not, will not affect your ability to receive care from the North Carolina Jaycee Burn Center or UNC Hospitals.

This entire process may take one to one and a half hours to complete and upon completion of this study, all data will be destroyed according to the UNC-G IRB guidelines.

Is there any audio/video recording?

Yes. The researcher will audio record the portion of this study where you will be asked questions to describe what (if any) safety measures or behaviors you may have done since you were burned. Because your voice will be potentially identifiable by anyone who hears the tape, your confidentiality for things you say on the tape cannot be guaranteed although the researcher will try to limit access to the tape as described below. This recording will be destroyed following the UNC-CH and UNC-G IRB guidelines when the study is completed.

What are the risks to me?

The Institutional Review Boards at the University of North Carolina at Chapel Hill and the University of North Carolina at Greensboro has determined that participation in this study poses minimal risk to participants. It is highly unlikely that you may suffer some emotional distress and/or embarrassment while discussing the incident that caused your burn injury. However, in the unlikely event that such an incident were to occur, the researcher will offer reassurance. If you or the researcher feel that your distress is extreme (i.e., emotional distress, excessive crying, nervousness, or visible shaking) while discussing the incident or shortly afterwards, the researcher may refer you to the Burn Center's Aftercare Program which has trained individuals that deal with emotional and psychosocial issues that may affect burn survivors. You may choose not to respond if any of the questions make you uncomfortable.

If you have any questions, want more information or have suggestions, please contact Ernest Grant at (919) 966-2381 or Dr. Anita Tesh (Faculty Advisor – UNC-G School of Nursing) at (336) 334-5282.

If you have any concerns about your rights, how you are being treated, concerns or complaints about this project or benefits or risks associated with being in this study please contact the Office of Research Integrity at UNCG toll-free at (855)-251-2351.

Are there any benefits to society as a result of me taking part in this research?

By participating in this study, you may be contributing valuable information that will help fire, burn and life safety educators design safety programs that specifically address the needs of this particular population.

Are there any benefits to me for taking part in this research study?

There are no direct benefits to participants in this study.

Will I get paid for being in the study? Will it cost me anything?

You will receive the following for your time participating in this study:

- \$20.00 at the completion of the interview.

How will you keep my information confidential?

All information obtained in this study is strictly confidential unless disclosure is required by law. All information will be coded and any identifiers will be kept on a password protected flash drive under a locked separate file, that only the principal investigator will have the key and access. All audio recording will also be kept in a separate locked file drawer that only the principal investigator will have key and access. The master list of individual names will be kept in a third locked file drawer separated from the other data that only the principal investigator will have a key and access. The file cabinets will be further locked by a bar and located in a locked work room that has limited access.

What if I want to leave the study?

You may refuse to participate or withdraw from this study at any time without penalty. If you choose to withdraw, you may request that any of your data which has been collected be destroyed unless it is in a de-identifiable state. Again, whether you participate in this study or not, it will not affect your ability to receive care from the North Carolina Jaycee Burn Center or UNC Hospitals.

What about new information/changes in the study?

If significant new information relating to the study becomes available which may relate to your willingness to continue to participate, this information will be provided to you.

Voluntary Consent by Participant:

By signing this consent form/completing this survey/activity (used for an IRB-approved waiver of signature) you are agreeing that you have read, or it has been read to you, and you fully understand the contents of this document and are openly willing consent to take part in this study. All of your questions concerning this study have been answered. By signing this form, you are agreeing that you are 18 years of age or older and are agreeing to participate, or have the individual specified above as a participant participate, in this study described to you by Ernest J. Grant.

Signature: _____ Date: _____

PI Signature _____ Date: _____

APPENDIX G

BACKGROUND INFORMATION SHEET

BACKGROUND INFORMATION

Name: _____

Age: _____

Ethnicity: _____

Education: (highest grade completed) _____

Year of injury _____ Etiology of injury _____ Percent TBSA _____

Marital Status:

_____ Single (never married)

_____ Widowed

_____ Married

_____ Divorced

Residence:

What type of home do you live in?

_____ Single story building

_____ Multi-story building

_____ Mobile home

_____ Apartment

_____ Other

What is your home made of?

_____ Brick

_____ Wood

_____ Other (Aluminum siding; Stucco; Rock)

Household Members

_____ Live alone

_____ Live with spouse only

_____ Live with other family members (number of individuals who reside

in the household)

APPENDIX H

LEININGER'S CULTURE CARE FOCUSED QUESTIONS

Culture of Care Questions

Note to be read to all participants: As you may remember, I mentioned in our phone conversation that I am studying older men who have experienced a burn injury. The questions that I am asking will help me to understand why people may or may not adopt safety behaviors [after sustaining a burn]. So, I am asking that you please don't give me the answer(s) that you think I want to hear. I need to know your honest answers to explain behavior and other changes. Your answers will help people like me who are interested in designing fire and burn prevention programs that may actually help get people to change their behavior.

You may think that some of the questions I will be asking may not seem to apply to you or your situation, but they will help me to understand the behavior of older men.

Cultural and Social Structure

1. You mentioned that since your burn, you sometimes experience some difficulty being around fire or cooking, but you still cook, grill, etc. I've heard that from other people as well. I'd like to talk to you more about that. Can you tell me why you think you experience these difficulties?
2. Many men who have been burned continue in their old habits and don't adopt safety behaviors. Why do you think that is and what do you think it would take to change that behavior?
3. How or what are some of the ways that fire is used in your life (cooking, warmth, celebration, etc.)?

4. As a man, from a personal perspective, can you tell me what you think when you hear or are encouraged to practice safety behaviors such as turning pot handles, using accelerants on open flames, checking the smoke alarm, etc. Do you have any idea as to why you think that way?
5. What do you think it would take for men to view fire and burns or safety behaviors in a different manner?
6. Have you ever thought that your injury was fate, rather than something that could have been prevented? Tell me more about those thoughts.

Kinship and Social

1. Besides you, has anyone else in your family (immediate or distant relative) ever suffered a burn injury? If so, who? How serious was it? Can you tell me if that person's injury or your injury changed the way your family behaved about burns? What are some examples?
2. Have you ever noticed if any of your relatives turn pot handles when cooking? What about if it was a man cooking? Have you noticed anyone taking other precautions when cooking either in the kitchen, grilling or campfire? Can you give me some specific examples?
3. Can you tell me if anyone in your family has discussed fire and burn safety measures such as encouraging everyone to have a smoke alarm, decreasing the hot water temperature, or having a fire extinguisher or escape plan in the event of a fire? If so, how was this received? Was it received differently by men and

women? Do you know if anyone made the recommended changes? Why do you think that did (or did not) make the recommended changes?

Economic

1. Do you feel that you are able to provide adequate up-keep of your home? (From an economic perspective, not physical).
2. Do you use an alternative heating source such as heating with wood, electric heater or kerosene? How often do you use it? What do you think other people may do in this situation?
3. Can you share with me how you think not having enough money or having enough money may determine whether or not a person may adopt fire and burn safety behaviors?

Educational

1. Have you ever attended a seminar (at church, senior community center for example) or has someone like a social worker or home health nurse talk to you about fire and burn safety? What did you think of it?
2. Have you ever read any literature (pamphlets, brochures, etc.) that are given out at safety fairs that talk about preventing a burn or home fire? Can you tell me what the topic was and what it suggested? Can you tell me why you didn't read the brochures? Can you tell me what you think other people may do in this situation?
3. What do you think researchers like me may need to know in order to get individuals to adopt fire and burn safety behaviors?