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Health Literacy, Social Support, and Self-Care Behaviors as Predictive Factors in the Use of the Emergency Department for Chronic Care Management in Patients with HTN And/Or Diabetes Mellitus Ages 30-64

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by

LaWanda W. Baskin

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ABSTRACT

HEALTH LITERACY, SOCIAL SUPPORT, AND SELF-CARE BEHAVIORS AS PREDICTIVE FACTORS IN THE USE OF THE EMERGENCY DEPARTMENT FOR CHRONIC CARE MANAGEMENT IN PATIENTS WITH HTN AND/OR DIABETES MELLITUS AGES 30-64

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The use of the emergency department (ED) for chronic care management is a long-standing issue. There is a need to identify what best predicts this behavior. Identifying predictors can help determine the educational needs of patients, as well as, provide a foundation for the implementation of policy and procedures that would be useful in decreasing the economic burden of ED use in place of primary care providers. A decrease in non-urgent visits could assist with decreasing the patient load in currently overcrowded EDs. According to the Agency for Healthcare Research and Quality (2017), more than 650 million dollars were spent on Emergency Department Services in 2014.

The purpose of this study was to examine the relationships of health literacy, self-care behaviors, and social support as predictive factors on the use of the emergency department for chronic care management in patients with hypertension (HTN) and/or type 2 diabetes mellitus (T2DM) ages 30-64. This study utilized a cross-sectional correlational predictive design. A correlational predictive design was used in this study because it offered insight into the predictive relationship of health literacy, social support, and self-care behaviors (independent variables) and use of the emergency department for chronic care management (dependent variable) in patients with HTN and/or T2DM, ages

30-64. The study was conducted in a primary care clinic, small rural hospital, a church, and with the members of a social organization. Inclusion criteria for this study included: ages 30-64, English speaking, self-reported diagnosis of HTN and/or T2DM. A total of 86 participants were in this study. Data collection for this study was achieved by using the researcher developed demographic questionnaire, the Short Test of Functional Health Literacy for Adults, the Sidani Doran Therapeutic Self-Care Measure, and the Medical Outcomes Study Social Support Survey.

Logistic regression was performed to assess the predictive impact of health literacy, self-care, and overall social support on use of the emergency department for chronic care management. The overall findings of this study indicated that there is a predictive relationship between health literacy, social support, and self-care behaviors and the use of the emergency department for chronic care management in patients with HTN and/or T2DM ages 30-64. Social support was found to be the strongest predictor of emergency department use in this sample.

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With sincere appreciation, I would like to first thank my dissertation chair, Dr. Sheila P. Davis. Words cannot express my gratitude for her support and encouragement during the course of my doctoral studies. She was truly my mentor, cheerleader, and never ending resource. To my committee members, Dr. Anita Boykins, Dr. Bonnie Harbaugh, Dr. Kyna Shelley, and Dr. Lachel Story, I am forever grateful to each of you for your assistance and willingness to serve. Finally, I would like to thank the hospital, clinic, church, and members of the social organization who assisted with the data collection for this study.

DEDICATION

"I can do all things through Christ which strengthens me" (Philippians 4:13). With strength from Christ, my Lord and savior, and with the support of some very special people in my life this journey has come full circle and culminated with this major milestone achieved.

I am dedicating this doctoral work to the loving memory of my mother, Olegrette King Wallace. I am so thankful that she taught me to be persistent and resilient. I want to also thank my father, Mr. Leonard Wallace; and all of my other family, and supporters for just being there for me. It was so important to have cheerleaders like you in my corner.

To my kids, Morgan, Madison, and Arrocus Jr., you are my reason for continuing to push and strive for excellence. Always remember that you can do anything that you put your mind to. NEVER GIVE UP! Finally, I want to thank my husband, Arrocus A. Baskin Sr. You are my rock, without you this would not have been possible. Thank you for your patience, love, and support during this time.

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LIST OF ABBREVIATIONS

AIAN	American Indian and Alaskan Native
CCM	Chronic Care Management
CHF	Congestive Heart Failure
COPD	Chronic Obstructive Pulmonary Disease
DM	Diabetes Mellitus
ED	Emergency Department
HL	Health Literacy
HTN	Hypertension
IRB	Institutional Review Board
MOS	Medical Outcomes Study
NAAL	National Assessment of Adult Literacy
PCP	Primary Care Provider
SCDNT	Self-care Deficit Nursing Theory
SDTSCM	Sidani Doran Therapeutic Self-care Measure
SS	Social Support
STOFHLA	Short Test of Functional Health Literacy for Adults
T2DM	Type II Diabetes Mellitus
TOFHLA	Test of Functional Health Literacy for Adults
U.S.	United States
USCB	United States Census Bureau
USM	The University of Southern of Mississippi

CHAPTER I - INTRODUCTION

According to the National Center for Health Statistics (2017), there was a total of 130.4 million Emergency Department (ED) visits in the United States (U.S.) in 2013. Of those visits, 37.2 million were injury-related visits and only 12.2 million visits resulted in hospital admission (U.S. Department of Health and Human Services, 2017). EDs are utilized in many ways in the American healthcare system (Grumbach, Keane, & Bindman, 1993). EDs have been presumed to be a place for care of major injuries or life threatening conditions. For many years, EDs have become a major provider of primary care. Gindi, Black, and Cohen (2016) reported that 18% of adults ages 18-64 visited the ED one or more times. Seventy-seven percent of these visits were perceived by the patient to be serious enough to have emergency care, 12% occurred due to the unavailability of their primary care provider (PCP), and 7% visited the ED because there was lack of healthcare access. Using the ED as a primary care center has caused increased patient loads and heavy economic burdens on the healthcare system. According to the Agency for Healthcare Research and Quality (2017), more than 650 million dollars were spent on ED services in 2014.

According to Walls, Rhodes, and Kennedy (2002), EDs care for the vulnerable of the society. Much speculation exists among emergency healthcare providers as to the reasons that patients seek out care in EDs. Tang, Stein, Hsia, Maselli, and Gonzales (2010) stated, “emergency departments are unique portals for health care in the U.S. because services are provided to all persons regardless of insurance or ability to pay” (p. 664). Glick and Thompson (1997) suggested the most common reason for ED use in non-urgent illness, is the patient’s lack of a PCP. Increased ED use is a problem that is related to different factors and can be found in varying populations. Increased ED visits by insured patients that have difficulty securing PCPs is seen in urban and rural communities (Grant, Ramgoolam, Betz, Ruttner, & Green, 2010). Grant et al. (2010) explored this problem in detail in a rural community in the Mississippi Delta and determined that PCP access difficulties were more pronounced in areas with healthcare provider shortages. The uninsured are thought to seek care for non-urgent illnesses in the ED, but Grant et al. (2010) held that this is not the case.

Many issues are created with the use of EDs in place of PCPs. Once thought to be an inner-city problem, ED overcrowding is now seen as a crisis in urban and rural EDs (Huryk, 2006). The overcrowding issue is spurred by general hospital factors such as limited inpatient beds, shortage of nurses, and high patient acuity. Increased use of the ED by insured and uninsured patients for non-urgent conditions also contributes to the overcrowding issue (Huryk, 2006).

Patients who seek care in the ED instead of seeking care in the PCP office are creating a problem of missed opportunities for PCPs. Patients with chronic diseases are at higher risk of seeking care in the ED particularly those with conditions not properly managed (Schrijvers, 2008). PCPs are in a better position to provide the continuity of care needed, due to the nature of their training, the setting in which they practice, the access to medical history, response to previous treatments, and a developed rapport (Phelps et al., 2000). Brim (2008) reported that the non-urgent use of EDs created increased cost. Because non-urgent ED visits create higher charges they have been referred to as a major contributor to increased healthcare cost (Young, Wagner, Kellermann, Ellis, & Bouley, 1996). Guttman, Zimmerman, and Nelson (2003) explored the multifactorial reasons behind patients seeking non-urgent care in the ED.

Another issue driving the use of the ED is thought to be that patients do not know the difference between emergent and non-urgent. However, no evidence supports the notion. Guttman et al., (2003) noted that many patients and caretakers know the difference, but they seek care based on other concepts of need. The need for pain relief, reassurance, official approval, and responsibility reassurance are a few identified.

Herndon, Chaney, and Carden, (2010) reported that health literacy affected patients' abilities to read and understand health material, comprehend prescription information, participate in decision-making, and accept self- management of health conditions. Patients who require chronic care management (CCM) are thought to be at higher risk for utilizing the ED than other patients, according to Schrijvers (2008). The management of these chronic diseases compels the patient to choose healthy self-care behaviors. Even with these self-care behaviors, incidence of ED use for CCM remains high. This researcher sought to explore the relationships of health literacy, self-care behaviors, and social support as predictive factors on the use of EDs for CCM specifically in patients with Hypertension (HTN) and/or Type II Diabetes Mellitus (T2DM).

Purpose of the Study

The purpose of this study was to examine the relationships of health literacy, self-care behaviors, and social support as predictive factors on the use of the ED for CCM in patients with HTN and/or T2DM. Patients considered for the study were ages 30-64 years. A cross-sectional predictive design was utilized. The researcher used the following research question to achieve the purpose of this study.

Research Question

The research question for this study was straightforward. Simply stated the question asked: what is the predictive relationship between health literacy, self-care behaviors, and social support among patients ages 30 – 64 with Hypertension (HTN) and/or Type II Diabetes Mellitus (T2DM) and the use of the ED for CCM? There were several theories used to guide the researcher in answering this question.

Theoretical Framework

Dorothea Orem's Self-Care Framework was utilized to help guide this study. Orem's Self-care Deficit Nursing Theory (SCDNT) contains several theories. Orem (1995) defined self-care as "deliberate action that enables the individual to survive in a variety of states of well-being or health to move from one state to another" (p. 120). Orem theorized that self-care is action learned by way of interpersonal relationships and exchanges (1995). Self-care is behavior. The theory of self-care requisites is a component of the SCDNT that encompasses actions needed to be performed by or for the individual "to maintain human structural and functional integrity" (p. 191). This study measured the self-care behaviors performed by people who have HTN and/or T2DM.

Orem explained further that alteration in self-care requisites may lead to questions: What is wrong? Why is this happening? What should I do? Orem's theory of demand for therapeutic self-care is simply defined as "a specification of the kinds and number of care measures that are known or presumed to be regulatory of an individual's human functioning and development within some time frame" (1995, p. 187). The relationship between this theory and the theory of self-care agency exists due to the agent’s response to the demand. The theory of self-care deficit is the expression and development of the reasons why individuals “require nursing” (p. 174), while “the theory of nursing systems establishes the structure and the content of nursing practice” that surrounds this need (p. 175-176) (Appendix A).

The patient seeking care in the ED is showing deliberate action of need for care and treatment for a condition. The action shows a behavior of self-care as theorized by Orem (1995). This action is often dependent on social support systems. Many people follow the role model of family in choosing where to seek health care (Siminoff, 2013). Patients with disease processes or injuries decide if these things are affecting their activity, social interactions, or another aspect of normalcy in life. The decision on where to seek care and reasons behind it are decided upon related to these factors or requisites. In making these decisions, patients sometimes act as their own agents. At other times, patients may have support systems that advise and influence their decision-making processes. It becomes more difficult and anxieties can continue to rise when a demand for novel self-care action is required. The individual may ask: What is wrong? What is happening? And what should I do? as discussed by Orem. As patients seek CCM in EDs for HTN or T2DM, nurses who encounter these patients identify self-care deficits and then move to put nursing systems in place. Identifying what predicts ED use for CCM can assist in decreasing the economic burden associated with its use. Nurses play an important role in patient self-care by being there identifying deficits and providing education as needed to the patient. This education may be concerning conditions, symptoms, and common non-urgent complications. After evaluation of patients understanding, nurses can put systems into place. These systems can assist patients in making informed decisions about self-care. Nurses attempting to understand why patients make the choices they make concerning self-care is important. Identifying what predicts ED use for CCM can assist in decreasing the economic burden associated with its use.

Patients' beliefs and/or perceptions about a phenomenon greatly affect their actions and behavioral achievements. According to Icek Ajzen's (1991) discussion of the Theory of Planned Behavior, "perceived behavioral control, together with behavior intention, can be used directly to predict behavioral achievement (p. 184). The relationship between behavioral control and behavioral achievement leads the researcher to the use of the Theory of Planned Behavior Model as additional theoretical guidance for this study. The theory entails three constructs: attitudes, subjective norms, and perceived behavioral control. Each of these constructs, individually, and collectively, led to intentions and behaviors of the patient. Additionally, actual behavior controls can affect the behavior (Appendix B).

The Social Comparison Theory is the final component of theoretical foundations of this study. The social comparison theory depicts how persons develop their concept of self by comparing themselves to others (Suls & Miller, 1977). Social comparison can affect the development of the person's self-concept and enhancement of their coping abilities. This school of thought can directly affect the response to those in a person's social support systems, thus affecting their decision to use the ED for care or not.

Significance of the Study

The fact that many patients utilize the ED for CCM is a long-standing issue. Identifying what best predicts this behavior can be helpful in determining the education needed to ensure patients make informed decisions about their care. Identifying predictors can also be instrumental in providing a foundation for processes that seek to implement policy and/or procedures that would be useful in decreasing the economic burden of ED use in place of PCPs. A decrease in non-urgent visits could assist with decreasing the patient load in currently overcrowded EDs. The results of this study will provide the field of nursing with building blocks for educational tools and interventions related to proper level of care selection.

Assumptions

This study was conducted with several assumptions being considered by the researcher. The first of the assumptions was study participants would complete all instruments. It was also assumed that study participants would provide honest answers.

Delimitations

There were some delimitations identified from the outset of the study. These delimitations identified for this study were:

1. Individuals could choose not to participate in the study.
2. The study was limited to those who speak English.
3. The study was limited to those who self-report a diagnosis of Type II Diabetes Mellitus (T2DM) and/or Hypertension (HTN).
4. This study was limited to participants ages 30-64 years.

Definitions of Terms

1. Chronic care management (CCM).

    Theoretical definition: The Centers for Medicare & Medicaid Services (CMS) recognizes CCM as a critical component of primary care that contributes to better health and care for individuals (CMS, 2016)

    Operational definition: For the purposes of this study, CCM was defined as the care and treatment received in EDs by participants to manage the chronic diseases of T2DM and/or HTN.

2. Health literacy

    Theoretical definition: The Affordable Care Act of 2010 defined health literacy as the degree to which an individual has the capacity to obtain, communicate, process, and understand basic health information and services, or provide health information and service to others.

    Operational definition: Health literacy was measured using the Short Test of Functional Health Literacy for Adults (STOFHLA). The measurement of health literacy was divided into three levels: inadequate, marginal, and adequate. Scores from the STOFHLA were placed in ordinal rank order: 1=Inadequate Functional Health Literacy (0-16), 2=Marginal Functional Health Literacy (17-22), and 3=Adequate Functional Health Literacy (23-36).

3. <u>Social support</u>

Theoretical definition: Social support is defined as support provided to an individual by other individuals, groups, and the community (Lin, Ensel, Simeone, & Kuo, 1979).

Operational definition: Social support was measured using the Medical Outcomes Study (MOS) social support scale. The scores from the MOS social support scale were totaled and reported as ratio/interval data. The higher the score the more social support being provided.

4. <u>Self-care behaviors</u>

Theoretical definition: Self-care behaviors are defined as activities and choices made by an individual to improve their health or deal with a health problem (Encyclopedia of Public Health, 2002).

Operational definition: Self-care behaviors were measured using the Therapeutic Self-Care Scale. Four areas of self-care behaviors were assessed using ordinal rank order 0=not at all to 5=very much so for each of the questions associated with the four areas. The higher the scores are the higher level of self-care ability. The four areas are: (1) ability to recognize symptoms or changes in condition (2) ability to identify, choose, and apply interventions to make successful changes in condition (3) ability to carry our recommended treatment regimens and (4) ability to return to original activity.

5. Emergency Department

Theoretical Definition: ED is defined as that section of a hospital or other healthcare facility designed, staffed, and equipped to treat injured people and those afflicted with sudden, severe illness (Medical Dictionary, 2009).

Operational Definition: ED was defined as the place the participant self-reports as the site for care of the chronic illness that is not a PCP office.

CHAPTER II – REVIEW OF LITERATURE

Introduction

Information is lacking that discusses the predictability of ED use for CCM related to health literacy, self-care behaviors, and social support in patients ages 30-64 years with T2DM and/or HTN in the U.S. and Mississippi. Literature was retrieved regarding this topic from several databases that included CINAHL, EBSCOHOST, JSTOR, and other databases available through The University of Southern Mississippi (USM) Libraries. This literature review resulted in numerous articles that provided insight but not a clear understanding of the topic of research. Over 40 articles were initially reviewed in preparation for this study. After in depth review of the articles for currency and relevance, the literature review was organized under the following headings: use of the ED, PCP versus ED, CCM, social support, and health literacy.

Literature Review

Use of the Emergency Department

Derlet, Richards, and Kravitz (2001) conducted a study that described the definition, extent, and factors associated with overcrowding in EDs in the U.S. as perceived by ED directors. Eight hundred and thirty-six surveys were sent out to a random sample of participants all over the country. Using a five point Likert scale, the survey addressed census of the ED, what determined overcrowding, as well as frequency and impact of overcrowding. Episodes of ED overcrowding were problematic in academic, county, and private hospitals. Five hundred and seventy-five surveys were returned, with 525 (91%) reporting problems with ED overcrowding. These authors noted many complex factors that caused the overcrowding. The authors recommended that the problem of overcrowding be addressed nationally using public policy.

Glick and Thompson (1997) examined the ED use in a large medical center by low-income residents who lived in public housing. A correlational study (N=565) was used to identify the reasons for ED use and the type of emergency service needed. ED data were obtained using a retrospective review of hospital records for all residents of public housing who used the ED during a specified timeframe. Evidence suggested that the most common reason for such non-urgent use is the lack of a PCP. The researchers determined many people without health insurance seek the care in the ED as a primary care resource. This study indicated many visits to the ED that occurred were among those who were low income, with non-urgent conditions, and did not require immediate attention. Two clinics were developed to decrease the access problem for this population. Findings provided baseline data used to evaluate the efficacy of the clinics. The researchers recommended that as manage care evolves; resources should be managed in a cost effective and humane way.

Grant, Ramgoolam, Betz, Ruttner and Green (2010) used a descriptive design to explore the reasons for non-urgent pediatric ED use in the Mississippi Delta. The sample consisted of 112 pediatric patients, whose data were collected by the patient/caregiver. The study, using a community-based participatory research framework, was conducted in Clarksdale, Mississippi. A semi-structured survey with open-ended questions was given in a face-to-face interview. Albeit a small sample, this study informed that non-urgent ED use is connected to primary provider access, insurance, and one’s sources for pediatric care.

Grumbach, Keane, and Bindman (1993) studied 700 patients who were waiting for ED care at a public hospital. A survey was administered to patients waiting for care at San Francisco General Hospital ED. This survey was administered to assess if a policy for primary care referral would be appropriate. The survey included demographic questions, socioeconomic status, insurance coverage, chronic and acute health status, and regular source of care. Approximately half (45%) of the patients cited access barriers to primary care as their reasons for using the ED. Only 13% of the patients had conditions appropriate for use in the ED. Also, 38% of the patients expressed a willingness to trade their ED visit for an appointment at PCP office. They concluded that public EDs could refer large numbers of patients to appointments with a PCP.

Guttman, Zimmerman, and Nelson (2003) performed a qualitative study to investigate why people use the hospital ED for visits considered non-urgent. These reasons were identified using the patient's perception. Participants were selected from a convenience sample of 408 patients of two northeastern U.S. hospitals' ED. They were asked to explain what brought them to the ED and to define an emergency. Researchers identified 12 main themes under 3 primary categories. Those categories included conceptions of need, appropriateness, and preference for the ED. Conception of need included relief from pain and discomfort, reassurance, official approval, responsibility related to the need for reassurance, recourse, referral, and financial. The second theme, conceptions of appropriateness encompassed conditions deemed worrisome, the concept that ED is an alternate site after hours and when perceivably the patient cannot obtain a timely appointment. It was further detailed that preference was the final concept theme. General preference along with the perception there is a shorter wait in the ED is described in this theme. Findings support that just expanding primary care services or education alone cannot solve the many concerns that lead patients to make the healthcare choices they make. This study offers insight into what patients perceive as appropriate use of the ED. The study raises questions as to what is considered prudent use. These findings can assist in determining what services are reimbursable and what processes should be adopted to protect the patient but not to overburden the system.

Koziol-McLain, Price, Weiss, Quinn, and Honigman (2000) conducted a study in an urban university ED to gain a better understanding of the context in which patients seek care in the ED. The study included 30 uninsured patients who had been triaged as non-urgent and were ready for discharge. The interview with participants began with the open-ended question of “Can you tell me the story, or chain of events that led to your coming to the ED today?” The patients also rated the severity of their illness from 1 (not severe) to 5 (life threatening) and were asked to rate their satisfaction with the health care received. The results of the study revealed that 73% of the participants rated the severity of illness as 3 or less, and their satisfaction with health care was 4 or more. Five themes were discovered among the responses: (1) toughing it out, (2) symptom overwhelming self-care measures, (3) calling a friend, (4) nowhere else to go, and (5) convenience. Although patients had non-urgent medical conditions, distress in their lives caused them to seek care in the ED. The study concluded that being able to obtain health care was first and foremost in the minds of the patients. Patients also did not generally see themselves as having urgent illnesses but having difficulty accessing health care in a nonemergency department setting. This study provided a perspective on the need for quality health care and needed education for planning to successfully obtain access to health care.

McGuigan and Watson (2010) conducted a qualitative study using semi-structured telephone interviews of patients with non-urgent reasons to visit the ED in the UK. Using a purposive sampling method, these authors interviewed 196 patients to determine the reasons that influence patients' decisions to visit the ED for non-urgent treatment. The findings suggested that most patients felt their visit to the ED was appropriate and their condition warranted an ED visit.

Ragin et al. (2005) utilized a cross-sectional, observational study to identify the principle reasons why patients seek care in hospital EDs in the U.S. Two types of participants were selected; Twenty-eight U.S. hospitals were sampled and 2,011adult patients over 18 were to participate. Two instruments were used to collect data. The patient interview was used to gather information related to patient demographics, medical acuity/severity, access the health care and reasons for seeking care. Most importantly, reasons for seeking care were measured by the patients' level of agreement with 21 statements. The level of agreement was measured on the three point Likert scale (strongly agree, agree, disagree). Additionally, the chart extraction instrument obtained data concerning patient demographics, medical acuity/severity, and access to health care by assessing patients' insurance status. The study indicated that convenience is a frequently cited reason for using the ED. Patients also preferred the ED as their healthcare resource, because they felt the care was better. Surprisingly, financial barriers to other sources were not the main reason for using the ED.

Shaw et al. (2013) conducted a qualitative study exploring the reasons patients gave for visiting the ED, the patient's decision-making process leading up to the ED visit, and their experience with the ED. The authors also explored patient's comfort with ED staff and perceptions of ED care versus other healthcare providers. Using semi-structured interviews, the authors spoke with 30 ED patients. The authors developed a model of decision-making regarding the use of the ED for non-urgent care versus primary care.

Tang, Stein, Hsia, Maselli, and Gonzales (2010) conducted a study to describe the changes in ED visits that happened from 1997 to 2007 in adult and pediatric U.S. populations. The study identified the population according to socioeconomic group, designation of safety net ED, and trends in ambulatory care sensitive conditions. The authors studied these visits to EDs and stratified the respondents by age, sex, race, ethnicity, insurance status, and triage category. Between 1997 and 2007, ED visits increased from 352.8 to 390.5 per 1000 persons. ED visits almost double what would be expected from population growth. This study noted that adult patients with Medicaid as an insurance source accounted for most of the increase.

Uscher-Pines, Pines, Kellermann, Gillen, and Mehrotra (2013) conducted a systematic review of literature to identify factors that influenced one’s decision to seek care in the ED for a non-urgent condition. Twenty-six articles were included in this review. The study suggested several factors that may influence decisions to use the ED. Those factors included: younger age, convenience of the ED, referral to ED, and negative perceptions about other options such as PCPs.

Young, Wagner, Kellerman, Ellis, and Bouley (1996) characterized the reasons ambulatory patients use the hospital ED for outpatient care. A cross-sectional survey during a 24-hour period of time was performed. The participants who were selected as consecutive ambulatory patients presenting for care in 56 hospitals nationwide. Participants were asked questions concerning their selection for medical care, reason for choosing an ED versus a primary care clinic, and if they had insurance or not. The patients were asked a follow-up question if he or she reported being insured. A follow up question was asked concerning the type of insurance, as well as if the insurance required approval for treatment in the ED. It was concluded that most ambulatory patients seek care in the ED because of worrisome symptoms or nonfinancial barriers to care.

Primary Care Provider versus Emergency Department

Phelps et al. (2000) conducted a descriptive study during a 6-month period with two hundred caretakers and children that were brought to the ED for non-acute medical care. A convenience sample of 200 caretakers who brought their children to 1 of 2 urban hospitals was selected. The instrument was developed that consisted of 11 forced choice questions, 1 open ended-question, and a short demographic section. The survey was analyzed with the Fry Readability Scale. The questions were designed to elicit information about specific caretaker characteristics and their reasons for using the ED for their child’s non-urgent medical care. The study determined that predicting which caretakers are at risk for using the ED for non-urgent care; when their children are sick, provides the primary care physician a means of identifying specific patients who may benefit from interventions designed to promote a more cost effect approach to using medical resources. Most caretakers (92%) reported having a continuity physician for their children. Caretakers had also taken to the ED and those with Medicaid insurance were more likely to view the ED as an appropriate site for care. Single parent status was a predictor for non-urgent use as well.

Rask, Williams, McNagny, Parker, and Baker (1998) conducted a cohort observational study that was to describe primary care clinic use and ED use for a cohort of public hospital patients seen in the ED. Specifically, the study sought to identify predictors of frequent ED use and ascertain the clinical diagnoses of those with high rates of ED use. The study took place in a public hospital in Atlanta, Georgia. A random sample of 351 adults was surveyed for 2 years. This study concluded that all subgroups studied depended on the ED for ambulatory care.

Walls, Rhodes, and Kennedy (2002) conducted a secondary data analysis on an existing database, the 1998 National Health Interview Survey, to estimate the number of Americans who named the ED as their usual source of care and compare their characteristics with those who have a usual source of care other that the ED. Poverty, lack of insurance, younger age, male gender, and minority race predicted the identification of the ED as the usual source of care. Overall, approximately 54.6 million Americans reported using the ED at least once.

Wilson and Klein (2000) examined the factors associated with the use of the ED as the only source of health care among adolescents. Nationally, 6748 male and female adolescent in grades 5th through 12th were administered the survey *Analyses of the 1997 Commonwealth Fund Survey of the Health of Adolescent Girls*. Some of the adolescents may have had special mental or physical needs that are not likely to be met with the ED visit alone. The study revealed that the creation of linkages between the EDs and other services could be beneficial with helping at-risk adolescents use the most appropriate source of primary care. Factors identified that are associated with the use of the ED included males, African American ethnicity, fewer financial resources, and living in a rural area. Additionally, adolescents with higher levels of risky behaviors and higher depression were more likely to use the ED for their usual source of care. It was concluded in this study that adolescents who use the ED as their usual source of care are often from vulnerable populations.

Chronic Care

Coleman et al. (2001) conducted a randomized trial to determine if primary care group visits would reduce the use of the ED in adults with chronic illness. The authors initiated monthly group visits with PCPs in 19 physician practices. Two hundred and ninety-five older adults took part in this study. These participants were placed in groups of 8-12 that attended visits that emphasized the self-management of their chronic illness, peer support, and regular contact with the team of the PCP. The authors used t-test, Mann-Whitney U test, Fisher exact test, and logistic regression to analyze data. The findings suggested that monthly visits to PCP as a group reduced the use of the ED for chronic care in this older adult population.

Hussey et al. (2014) performed a retrospective cohort study to measure the relationship between care continuity, cost, and rates of hospitalizations, ED visits, and other problems for chronic disease patients with Medicare as a payer source. The authors utilized participants with Congestive Heart Failure (CHF), Chronic Obstructive Pulmonary Disease (COPD), and/or Diabetes Mellitus (DM). The Bice-Boxerman Continuity of Care index was used to measure care continuity. Descriptive statistics, bivariate analyses, multivariable logistic regression, and generalized linear regression with gamma variance distribution were utilized to analyze the data collected from the sample. The study found an association between higher levels of care continuity; lower rates of hospital and ED use; lower complications rates; and lower cost per visit in patients with Medicare with DM, COPD, and CHF.

It is commonly known that chronic illnesses are health conditions that require continuous care for more than a year. These conditions may cause change in activities of daily living for some. Some commonly known illnesses are asthma, arthritis, Alzheimer's disease, cancer, depression, diabetes, heart disease, stroke, and human immunodeficiency virus/acquired immune deficiency syndrome. According to the Council of State Governments, chronic illnesses are the leading cause of death in the US. Chronic illness accounts for 7 out of 10 deaths and 78% of all healthcare spending.

Social Support

Won and Son (2016) conducted a cross-sectional study to ascertain the association among perceived social support from healthcare providers and physical activity of patients with stable coronary artery disease. They utilized a convenience sample of 237 patients. Data collection included the attainment of socio-demographic and clinical characteristics. Physical activity was measured using the *International Physical Activity Questionnaire Short Form Korean version.* The *Health Care Climate Questionnaire* was used to measure perceived social support. Self-efficacy was measured using the *Cardiac Exercise Self-Efficacy Scale*. Descriptive statistics, Pearson's correlation coefficients, and hierarchical linear regression were used for analysis. Findings of this study were the first to suggest a relationship with perceived social support from healthcare providers and physical activity of patients with coronary artery disease (Won & Son, 2016).

Hatchet, Friend, Symister, and Wadhwa (1997), conducted a prospective study to compare interpersonal expectations with social support as predictive factors of psychological adjustment. There was a 3-month separation between the first interaction and the second interaction, where changes to observations were observed. The researchers defined social support as “the perception of positive exchanges of emotional appraisal, instrumental, and informational support provided by others” (p. 3). The sample included 68 end-stage renal disease patients. The authors developed two scales to measure the perception of family and medical expectations. Other scales were utilized to measure depression, hopelessness, and illness intrusiveness. Quality of life, social support, and social desirability had specific tools of measurement. Social support was used in this study as a control variable. Perceptions of expectations were predictive of psychological adjustments unlike social. Findings of the study established that even when social support was controlled, the predicted expectations decrease in psychological adjustment over a 3-month period. It was found that poorly adjusted patients did not misperceive others' expectations.

Health Literacy

The Merriam-Webster Collegiate Dictionary Online (2015) defined health literacy as “the ability to read and write”; “knowledge that relates to a specified subject”. This definition originated in the 19th century where it is derived from the term “literate”. The use of the term was first realized in 1883 and since that time the use of the term has increased drastically. Over 100 years later, the National Literacy Act of 1991 defined literacy as “an individual's ability to read, write, and speak in English, and compute and solve problems at levels of proficiency necessary to function on the job and in society, to achieve one's goals, and develop one's knowledge and potential”. Literacy has further been defined by the National Center for Educational Statistics (2003). Using a task based definition, they defined literacy as “the ability to use printed and written information to function in society to achieve one's goals and to develop one's knowledge and potential". Literacy is a concept whose functional definition depends on the context to which it is being used. Functionally literacy was used as it relates to health for this study.

The term health literacy was first used in 1974 according to the archives in the National Library of Medicine. In the Patient Protection and Affordable Care Act of 2010, Title V, health literacy is defined as "the degree to which an individual has the capacity to obtain, communicate, process, and understand basic health information and services or provide health information and services to others". Brigilia, Perlman, and Weissman (2015) referred to health literacy as "the capacity of professionals and institutions to communicate effectively so that community members can make informed decisions and take appropriate actions to protect and promote their health".

Literacy can be measured using the 2003 National Assessment of Adult Literacy (NAAL). The National Center of Education Statistics describes this tool as the nation's most comprehensive measure of adult literacy since 1992. According to the National Center of Education Statistics, the NAAL is an assessment tool used in the U.S. to identify literacy issues. It is comprised of several different parts. In order to help recognize relationships with certain demographics and backgrounds the tool has a background component. It also consists of a fluency section that assists in measuring basic reading skills. In order to assess the literacy level of adults incarcerated, there is also a prison component. The tool is comprehensive also contains a health literacy component. This section of the tool assesses the adult's ability to understanding health-related information. Additional tools can also be used to measure health literacy. Some of these are the Test of Functional Health Literacy in Adults (TOFHLA) and its abbreviated version the Short Test of Functional Health Literacy in Adults (STOFHLA). Also the Health Literacy Questionnaire, the Newest Vital Sign, and the Rapid Evaluation of Adult Literacy in Medicine. The TOFHLA is an assessment tool that as two parts: a numeracy component and a prose component. These pieces of health information are presented to the participant and then they are required to answer questions regarding it. The responses provide an indication as to the patient's ability to read and understand health and numerical information. The STOFHLA is simply an abbreviated version of the TOFHLA.

According to the U.S. Department of Health and Human Services' Quick Guide to Health Literacy (n.d.), 12% of adults have proficient health literacy. Essentially, that equates to 9 out of 10 adults lacking the required skills to properly care for self and prevent disease. Additionally, 14% of adults are reported to have below basic health literacy. The U.S. Department of Health and Human Services report that 42% of these adults reported having poor health as opposed to those that have proficient health literacy. Wang et al. (2013) conducted a cross-sectional study to examine health literacy levels in asthma patients and to assess the causal model linking health literacy to health outcomes-related factors. This study was conducted to better understand how low health literacy impacts health outcomes. Three hundred twenty-six patients with asthma were used to collect data using questionnaires measuring socio-demographic characteristics, decision-making process, asthma knowledge, attitudes, and self-efficacy. Measures were also used to assess healthcare experience and health outcome related factors. The study revealed that health literacy had a positive association with proficiency in specific health outcomes-related factors such as use of the meter dose inhaler, asthma knowledge, attitudes, and medical decision-making. However, it was found not to have a statistical association with medical care use and self-management behavior.

Two hundred thirty-five participants were enlisted to participate in a study to explore the relationship of health literacy and health beliefs amid elderly patients with COPD. Health literacy was measured using the STOFHLA. Illness and medication beliefs were measured with the Brief Illness Perception Questionnaire and Beliefs about Medication Questionnaire. This study suggested that health literacy and illness beliefs that predict decreased adherence were associated (Kale et al., 2015).

Gazmararian et al., (1999) examined the prevalence of low functional health literacy among community-dwelling patients with Medicare as a payer source. Using a cross-sectional design, researchers measured functional health literacy of 3260 participants aged 65 and older with the STOFHLA. The study determined that elderly patients in this population might not have the health literacy required to function in the healthcare setting.

Summary

The review of literature for this study explicitly revealed some significant information regarding ED use, PCPs, CCM, social support, and health literacy. This same review of literature left a gap in knowledge regarding those same areas. Overcrowding of the ED as a national issue has led to a call for more access to primary care. Literature citing the lack of primary care as one of the main reasons for the conundrum the healthcare system is facing was plentiful, yet it did not address the real root cause of the problem. Although access to primary care seems to be a cause for concern, it is also concerning that no one has explored how social support, self-care behaviors, or health literacy influence these patients.

Additionally, the literature further supported the belief that ED overcrowding and use for non-urgent illness is not just an urban problem but exist in rural areas as well. Although there were several findings that identified this as a widespread issue, there was a paucity of literature that explored these issues in the southwest U.S. The increased use of the ED for non-urgent illness or CCM has been shown to be an ever-growing, longstanding global issue. The literature review supports that the use of the ED for CCM has been shown to be inefficient and costly to both patients and healthcare systems. Patients with and without insurance, the elderly, and those caring for pediatric patients, along with chronically ill patients have been cited throughout literature as seeing the ED as a convenient place to receive care. Scholars agree that patients perceive their actions as the correct actions when seeking care in the ED. The rationale and justification for this study was to determine to what extent do other factors (health literacy, social support, and self-care behaviors) predict ED usage decisions. The literature was not specific in these relationships and another gap was identified in the literature regarding the practice of using the ED for CCM in the southwest U.S. Hence, this study sought to explore the extent to which health literacy, social support, and self-care behaviors predict the use of the ED for CCM in patients with HTN and/or T2DM ages 30-64 years.

CHAPTER III - METHODOLOGY

Introduction

A lack of information exists regarding the influence of health literacy, self-care behaviors, and social support on the use of the ED for CCM in male and female patients with HTN and/or T2DM between the ages 30-64 years. The purpose of this study was to explore these relationships as predictive factors. A cross-sectional correlational predictive study design was used. The target population for this study was adult residents of Mississippi and Louisiana with HTN and/or T2DM. Inclusion criteria included: 30-64 years of age, English speaking, self-reported diagnosis of HTN and/or T2DM. Participants were excluded if: they had mental illness, did not speak English, were over the age of 64, under the age of 30, were institutionalized, and pregnant.

Sampling and Setting

To control for Type II errors, using an effect size equal to 0.30 and $\alpha = 0.05$ was used. Tabachnick and Fidell's (2007) approach (as cited in Polit & Beck, 2012), suggested the sample size be $N \geq 50 + 8$ times the number of predictors. These authors reported small samples may create problems in studies such as this one, which requires regression analysis. Sample size for this study was suggested to be at least N=74 (50+[8x3]). For this study, N=86 participants were obtained.

Convenience sampling was employed to select participants for this study. A convenience sample N=86 was recruited from a primary care clinic, a small rural hospital, a church congregation, and the members of a local chapter of a social organization; all in Southeastern U.S., particularly Mississippi. To gain entry into the clinic and hospital it was necessary to elicit the help of gatekeepers. The gatekeepers were Family Nurse Practitioners who worked at the sites. The purpose of the study and reason for selection of the site was discussed with the prospective gatekeepers of each site. The gatekeepers acted as liaisons between the administrators and the researcher during the initial request phase. In the absence of the researcher during data collection, the gatekeeper provided clarification of information on the flyer and the researchers' contact information to potential participants.

The primary care clinic was located in Claiborne County, MS. Staffed by three family Nurse Practitioners, one medical doctor, and one dentist this clinic offers a variety of primary care services to the citizens of Claiborne County, with a population of 9,604. According to the U.S. Census Bureau (USCB) 2010 census, the following races make up the population of Claiborne County, MS: White n=1,367 (14%); African America n= 8,104 (84%); Asian n=40 (<1%); American Indian and Alaskan Native (AIAN) n=9 (<1%); Other n=29 (<1%); and two or more races n=55 (<1%). The hospital was located in Franklin County, MS. This 25-bed critical access hospital offers many services. Services include an acute care unit, ED, intensive outpatient program for senior citizens, and oral surgery. It also provides a swing bed unit, therapy services, wound care, and a ventilator and tracheostomy-weaning program to the citizens of Franklin County, with a population of 8,118. According to the USCB 2010, the following races make up the population of Franklin County, MS: White n=5,257 (64.7%); African American n=2,791(34%); Asian n=5 (<1%); AIAN n=14 (<1%); Other n=6 (<1%); and two or more races n=45 (<1%).

Table 1

Racial Make-up of Sample and Population (By County)

	Adams	Claiborne	Franklin
Race	%(N)	%(N)	%(N)
Sample			
African-American	80(46)	86(19)	33(6)
Caucasian	151(7)	9(2)	55.6(10)
Other	4.3(2)	4.5(1)	11(2)
Population			
African American	53.5(17,287)	84(8,104)	34(2,791)
Caucasian	42.7(13,793)	14(1,367)	64(5,257)
Asian	.004(127)	.004(40)	.001(5)
AIAN	.004(104)	.001(9)	.002(14)
Other	1.6(536)	.003(29)	.001(6)
Two or more races	1.3(446)	.006(55)	.006(45)

The church congregation and social organization chapter were located in Adams County, MS. The church has a membership of 338 members from various backgrounds. The social organization chapter has a local membership of just over 120 women from varying backgrounds. Adams County, MS has a population of 32, 297. According to the USCB 2010, the following races make up the population of Adams County, MS: White n=13,793 (42.7%); African American n=17,287 (53.5%); Asian n=127 (<1%); AIAN n=104 (<1%); Native Hawaiian and other Pacific Islander n=4 (<1%); Other n=536 (1.6%); and two or more races n=446 (<1%). A summary of the racial make-up of the sample and of the counties used in the sample is presented in Table 1. The racial make-up of the sample and that of the population of the counties is comparatively similar.

Ethical Considerations

All ethical considerations were considered during recruitment, data collection, and analysis. Institutional Review Board (IRB) approval (Appendix C) was obtained (Protocol# 17062601) and letters of support from the selected sites was received. Informed consent was obtained. This thorough explanation of the research procedure included the following information. The purpose of the study was explained to the participants. The participants were instructed that there were no risks associated with their participation. The participants were also informed that a small token [$5 Wal-Mart gift card] would be given to them in appreciation for their participation. Participants were also informed of their right to withdraw from the study at any time. Anonymity and confidentiality were maintained. Data are confidentially maintained without identifying information. These data are being kept locked and password protected. After the completion of the study, the data will be destroyed and properly disposed of after the given time. Contact information for the researcher was provided and participants were instructed to contact the researcher if they would like a summary of the data.

Instrumentation

This study measured three variables and explored their predictive effect on the use of the ED for CCM in patients with HTN and/or T2DM ages 30-64 years. A Demographic questionnaire (Appendix D), developed by the researcher, was used to gather socioeconomic status, educational level, insurance status, age, gender, race, ethnicity, and information regarding use of the ED for CCM. The Demographic tool was also the portal for the participant to self-report their diagnosis of HTN and/or T2DM. Health literacy (HL) was measured using the Short Test of Functional Health Literacy in Adults (STOFHLA) (Appendix E). This tool is the short form of the Test of Functional Health Literacy in Adults (TOFHLA) and was retrieved from Peppercorn Books. The STOFHLA has four numeracy items and two prose passages. The first of the two prose passages has a readability of 4.3 and the second prose passage has a readability of 10.4. According to Baker, Williams, Parker, Gazmararian, and Nurss (1999) the TOFHLA is found to have good reliability and validity. The Cronbach's alpha is 0.68 for the numeracy items and 0.97 for the items related to the prose passages. The STOFHLA can be administered in approximately 7 minutes to the participant.

The second variable, self-care behaviors was measured using the Sidani Doran Therapeutic Self-Care Measure (SDTSCM) (Appendix F) that was retrieved from the public domain at Flintbox.com. Psychometric analysis by Sidani and Doran (2014) found the measure to be reliable and valid. All items were found to be internally consistent. The item-to-total correlation coefficients ranged from .47 to .74, and Cronbach's alpha was .89. Construct validity of this measure was also established. The correlation coefficient was .19 suggesting that there was statistically non-significance between the group who had reportedly been given self-care instructions and the group who had not been given self-care instructions. The 13-item SDTSCM was administered by the researcher in an interview format.

The final variable, social support (SS) was measured by the Medical Outcomes Study (MOS) social support survey (Appendix G). This survey was also retrieved from the public domain at rand.org. Reliability and validity of the MOS social support survey was established and reported by Sherbourne and Stewart (1991). Cronbach's alpha of the social support subscales ranged from 0.91 to 0.97, establishing internal-consistency reliability. All concepts of the measure were significantly correlated at $p< 0.01$. Developers of the MOS social support survey designed the measure to be brief, simple, and easy to understand and therefore able to be administered to chronically ill patients (Sherbourne & Stewart, 1991).

Data Collection

Recruitment took place in the form of flyers, word of mouth from designated gatekeepers, and face-to-face solicitation of the researcher. The assistance of a gatekeeper was elicited at the clinic and hospital only to clarify contact information on the recruitment flyer (Appendix H) in the absence of the researcher. The sample (N=86) was recruited from the small rural hospital waiting area, a selected primary care clinic, a church congregation, and the members of a local social organization chapter. Data collection was arranged so as not to interfere with the wait time and or care of the participants. Potential participants were asked to self-report if they have been diagnosed with HTN and/or T2DM and if so, have they ever used the ED for care of these chronic illnesses. Other inclusion criteria included ability to read and write English and age 30-64 years. The participants decided if they desired to continue with the study at that time or if they would meet at a more convenient time. Meeting arrangements were made on an individual basis for all participants. The Demographic tool, STOFHLA, MOS social support survey and Sidani Doran Therapeutic Self-Care Measure were provided and/or administered as appropriate.

After obtaining informed consent, the participants were asked to complete the Demographic tool first. The participants were then administered the STOFHLA. Next they were administered the SDTSCM followed by self-administration of the MOS social support survey. Each interaction lasted approximately 15 minutes. Participants were compensated with a small token of appreciation for their willingness to participate. The informed consent along with any identifying information was not associated with the responses and all data are being kept in locked files in the researcher’s office for the designated time until proper disposal. All data were coded and de-identified.

Summary

The research methodology of this study utilized a cross-sectional correlational predictive study design. The purpose of the study was to examine the relationship and predictive effects of health literacy, self-care behaviors, and social support on the use of the ED for CCM in male and female patients between the ages of 30-64 years diagnosed with HTN and/or T2DM. The sample was obtained using convenience sampling from a primary care clinic, small rural hospital, church congregation, and the members of a social organization. The next chapter will include a discussion of the descriptive statistics, bivariate analyses, and logistic regression analysis conducted, using IBM Statistical Package for the Social Sciences version 23.0.

CHAPTER IV – RESULTS

The purpose of this study was to examine the relationship and predictive effects of health literacy, self-care behaviors, and social support on the use of the ED for CCM in male and female patients between the ages of 30-64 years diagnosed with HTN and/or T2DM. Data were collected from four facilities. This chapter contains the results of this study. First, descriptive statistics will summarize all variables. Then, central tendency for each variable and the results of the logistic regression will be presented to answer the research question.

Descriptive Statistics

Sample Demographics

The target sample size of 86 participants was achieved. Participants were recruited from four different facilities (a clinic, a church, a hospital, and a social organization). The quality of data collection was high and there were no missing values or outliers. Approximately 26% (n=22) of the participants were recruited from the clinic, 42% (n=36) were recruited from the church, 20% (n=18) were recruited from the hospital, and 12% (n=10) were recruited from the social organization. Further analysis of the sample revealed 68% (n=15) of the clinic sample, 72% (n=26) of the church sample, 44% (n=8) of the hospital sample, and 60% (n=6) of the social organization sample all reported not using the ED for CCM. Insurance coverage varied among the sample sites. Findings disclose 77% (n=17) of the clinic sample, 61% (n=22) of the church sample, 44% (n=8) of the hospital sample, and 80% (n=8) of the social organization reported some type of insurance. Thirty-six percent (n=31) of the total sample (N=86) was uninsured.

Table 2

Demographic Characteristics of the Sample (By Recruitment Site)

Characteristic	Clinic %(n)	Church %(n)	Hospital %(n)	Social Organization %(n)	Total %(N)
Gender					
Male	41(9)	39(14)	39(7)	20(2)	37(32)
Female	59(13)	61(22)	61(11)	80(8)	63(54)
Race					
African-American	86(19)	78(28)	33(6)	30(9)	72(62)
Caucasian	9(2)	17(6)	56(10)	10(1)	22(19)
Other	5(1)	6(2)	11(2)	-	6(5)
Ethnicity					
Hispanic	4(1)	8(3)	22(4)	-	9(8)
Non-Hispanic	96(21)	92(33)	78(14)	100(10)	92(78)
Income					
<$10,000	14(3)	11(4)	11(2)	10(1)	12(10)
$10,000-$20,000	14(3)	28(10)	39(7)	-	23(20)
$20,001-$30,000	32(7)	28(10)	44(8)	10(1)	30(26)
30,001-$40,000	14(3)	18(7)	-	20(2)	14(12)
$40,001-$50,000	9(2)	6(2)	-	30(3)	8(7)
$50,001-$60,000	-	3(1)	-	20(2)	4(3)
>$60,001	18(4)	6(2)	6(1)	10(1)	9(8)

Among the total sample, 63% (n=54) were female and 37% (n=32) were male. Participants ranged in age from 30 to 64 years with a mean age of 50.22 years (*SD*=11.53). Most of the sample self-identified as African-American (72%), non-Hispanic (91%) and reported a household income of less than $30,000 (65%).

Thirty six percent of the sample (n=31) reported 'Yes' to using the ED for the management of HTN and T2DM, while 64% (n=55) reported 'No' to using the ED for the management of HTN and T2DM. Sixty three percent (n=54) were diagnosed with HTN and 70% (n=60) were diagnosed with T2DM. The total sample was well educated with 48% (n=57) reported having completed at least 1-3 years of college. The complete summary of participant demographics is presented in Table 2 and Table 3.

Analyses of Study Variables

All participants were administered the Short Test of Functional Health Literacy in Adults (STOFHLA) (Appendix D), the Sidani Doran Therapeutic Self-Care Measure (SDTSCM) (Appendix E), and the Medical Outcomes Study (MOS) social support survey (Appendix F). Among the total sample, health literacy scores ranged from 16 to 36 with a mean of 33.08 (*SD*=4.59), self-care scores ranged from 2.00 to 5.00 with a mean of 4.27(*SD*=. 81), and overall social support scores ranged from 2.00 to 5.00 with a mean of 3.85 (*SD*=1.07). A complete summary of scores is provided in Table 4. The MOS social support survey performed well with this study sample, $\alpha = .97$. The Cronbach alpha coefficient for the SDTSCM was $\alpha = .98$, indicating reliability with this sample.

Table 3

Health Related Demographics of the Sample (By Recruitment Site)

Characteristic	Clinic %(n)	Church %(n)	Hospital %(n)	Social Organization %(n)	Total %(N)
ED Use					
Yes	32(7)	28(10)	56(10)	40(4)	36(31)
No	68(15)	72(26)	44(8)	60(6)	64(55)
T2DM Diagnosis					
Yes	77(17)	58(21)	83(15)	70(7)	70(60)
No	23(5)	42(15)	17(3)	30(3)	30(26)
HTN Diagnosis					
Yes	64(14)	69(25)	50(9)	60(6)	63(54)
No	36(8)	31(11)	50(9)	40(4)	37(32)
Insurance					
Medicaid	9(2)	3(1)	6(1)		4(3)
Medicare		8(3)			5(4)
Humana		-	6(1)	10(1)	2(2)
United Health		6(2)	6(1)		4(3)
Blue Cross Blue Shield	54(12)	28(10)	15(3)	70(7)	37(32)
Medicare & Medicaid	5(1)	-	6(1)		2(2)
Medicare & Humana	5(1)	3(1)			2(2)

Medicare, Medicaid & Humana	-	3(1)			1(1)
Other	5(1)	11(4)	6(1)		7(6)
None	22(5)	38(14)	55(10)	20(2)	36(31)

Table 4

Health Literacy, Self-Care, and Overall Social Support Scores (By Recruitment Site)

Recruitment Site	n	Minimum	Maximum	Mean	SD
Clinic					
Health Literacy	22	22	36	33.14	3.27
Self-Care	22	2	5	4.27	1.02
Overall Social Support	22	2	5	3.81	1.02
Church					
Health Literacy	36	16	36	33.86	4.54
Self-Care	36	2.67	5	4.31	.58
Overall Social Support	36	2	5	4.11	.99
Hospital					
Health Literacy	18	20	36	30.50	6.14
Self-Care	18	2	5	3.98	1.02
Overall Social Support	18	2	5	3.27	1.13
Social Organization					
Health Literacy	10	30	36	34.80	2.09

Self-Care	10	4	5	4.68	.41
Overall Social Support	10	2.21	5	4.02	.99

Research Question

The simply stated research question was used to guide the methods of this study. The researcher sought to discover, what is the predictive relationship between health literacy, self-care behaviors, and social support among patients ages 30 – 64 with HTN and/or T2DM and the use of the ED for CCM? The researcher identified one research hypothesis related to the research question.

Research Hypothesis

The research hypothesis predicted one outcome. The outcome predicted for this study was, there is a predictive relationship between health literacy, self-care behaviors, and social support among patients ages 30 – 64 with HTN and/or T2DM and the use of the ED for CCM. The results of the hypothesis are discussed in the following section.

Bivariate analyses were conducted to determine the relationship between health literacy, self-care behaviors, social support, and using the ED for CCM. Health literacy, self-care behaviors, and social support were significantly correlated with use of the ED, p <.05, as reported in Table 5. The bivariate analyses also confirmed that all three independent variables can be included in the regression model.

Table 5

Relationship Between Health Literacy, Self-Care, Social Support and ED Use

Variable	*N*	*r*	r^2	*p-value*
Health Literacy	86	.25	.06	.020
Self-Care	86	.46	.21	.000
Social Support	86	.73	.53	.000

Table 6

Logistic Regression Model

Predictor	B	S.E.	Wald	*df*	p	Odds Ratio	95% CI	
							Lower	Upper
Health Literacy	-.00	0.08	0.00	1	.96	0.99	0.84	1.17
Self-Care	-.18	0.60	0.09	1	.76	0.83	0.25	2.70
Overall Social Support	2.42	0.55	19.35	1	.00	11.27	3.83	33.15

Logistic regression was performed to assess the predictive impact of health literacy, self-care, and overall social support on use of the ED for CCM. Preliminary analyses were conducted to ensure no violation of applicable assumptions. The model contained three independent/predictive variables (Health Literacy, Self-Care, and Overall Social Support). The full model containing all predictors was statistically significant, $\chi 2$ (3, N = 86) = 54.58, p < .05, indicating that the model was able to distinguish between participants who reported use of the ED (‘Yes’) and participants who did not use the ED (‘No’). The model as a whole explained between 47% (Cox and Snell R square) and 64.4% (Nagelkerke R squared) of the variance in ED use and correctly classified 88.4% of the cases. The correct classifications rate for ED use was noted as 77.4 and 94.5 for non-ED use. As shown in Table 6, only one of the independent variables made a unique statistically significant contribution to the model (Overall Social Support). Overall Social Support was the strongest predictor of a person not using the ED, recording an odds ratio of 11.27. This odds ratio indicated that participants who had higher overall social support were 11.27 times more likely to not use the ED than those who had lower overall social support, controlling for all other factors in the model. Based on these findings, the research hypothesis was supported.

CHAPTER V – DISCUSSION

Currently, improving access to health care is a major concern to U.S. citizens. Healthy People 2020 reports that access to health care impacts the physical, social, and mental status and quality of life. The findings of this study suggest that some factors very similar to physical, social, mental status, and quality of life actually impact access to health care. Overuse of the ED has been explored and cited as a major economic burden to the healthcare system. Inappropriate use of the ED is very costly to individuals and insurance companies that pay the bill. The University of Mississippi Medical Center, a major provider of health care across the State of Mississippi reports the base price for an ED visit as $374. This price does not include the provider fee, labs, x-ray, or any treatments (ummchealth.com, 2017). It is easy to see how the continued misuse of ED service can create economic strain on the healthcare community. Other inquiry found that ED overuse was a result of patients having difficulty with accessing health care in PCP clinics. The lack of PCPs in Mississippi has increased and also contributes to the overuse issue. Health literacy, self-care, and social support have not been explored as to how they may contribute to the economic burden of the U.S. healthcare system.

Interpretation of Findings

The objective of this research study was to identify and examine the relationship and predictive effects of health literacy, self-care behaviors, and social support on the use of the ED for CCM in male and female patients between the ages 30-64 years diagnosed with HTN and/or T2DM. This study found that health literacy and self-care had a small significant influence on the use of the ED for CCM.

The underpinning of the selected theories can be seen at work in this study. Orem's SCDNT theorized that self-care is action that is learned by way of interpersonal relationships and exchanges (1995). The behavior of self-care in this study was measured and findings suggest that self-care, although minimal, was significantly correlated with the use of the ED for CCM in the sample.

Findings of this study supported that when controlling for other factors there was one predictive factor that made a stronger significant contribution. Social support exhibited a major predictive relationship with the use of the ED for CCM. Overall Social Support was found to be the strongest predictor of a person not using the ED for CCM. Findings indicated that those in the sample who had a higher overall social support index were more likely not to use the ED for CCM. Similar to this study's findings, Walker, Schatz, Johnson, Silverstein, and Rohrs (2015) found a significant correlation of social support with their study dependent variable. These authors suggested that a lack of social support was a source for health disparities in the health outcomes of youths with Type I Diabetes Mellitus. The social comparison theory tells us that people are driven to evaluate themselves based on the actions and opinions of others. People look to others around them for guidance and support in all aspects of their lives, including health care.

Implications for Change

Nursing Education

All levels of nursing education can benefit from the results of this study. Student learning outcomes related to patient education, care plans, and treatment plans for patients should include ways to improve health literacy, self-care behaviors, and social support. All patients can benefit for educational enrichment regarding their health and how to take care of their chronic conditions. Patient support systems are important to the healthcare team. It is important to engage support systems in treatment plans to ensure success and goal attainment for patients. The use of the results of this research study as a means of improvement of nursing education is foundational when working to improve patient care practices.

Healthcare Practice

Results of this research provide insight into how health literacy, self-care, and social support affect the use of the ED for CCM in males and females with HTN and/or T2DM ages 30-64 years. Although health literacy, self-care, and social support are all predictors of ED use, findings indicate that social support is the strongest predictor. Health literacy and self-care behaviors show a predictive impact of the use of the ED for CCM, but this relationship is small compared to that of social support. Social support has been found to significantly predict the use of the ED for CCM but the importance of building strong social support systems seems lost. Part of the problem regarding this lack of social support engagement in health care has to do with the dwindling number of PCPs. Comprehensive assessments that include health literacy, self-care behaviors, and social support may also be incomplete. The lack of PCP providers makes it difficult to go above and beyond basic healthcare needs and develop relationships with patients and families. Increasing patient loads on the current PCPs creates long waits for appointments and little time for visits. This problem fuels the use of the ED for CCM and the cycle continues. These results may aid in determining how to improve the access to health care issue that is burdening the U.S healthcare system. Findings suggest the need for more

PCPs that are willing and have the time to collaborate with the community to increase social support in patients with chronic conditions.

Recommendations for Action

Nurses, advanced practice nurses, physicians, policy makers, as well as other community members should make an asserted effort to realize the healthcare needs of the United States. Working together, all stakeholders can effectively manage the PCP shortage, the ED overuse, and the economic burden that has resulted. Findings of this study suggest that increased social support would decrease the use of the ED for CCM in the sample. It is important to take a look at the role played by the nurse practitioner in primary care. Nurse practitioners are highly skilled health care providers that can provide healthcare services to chronically ill patients. Communities with more primary care clinics can provide more opportunity for care to chronic patients, including more providers that can engage social support systems. Allowing independent practice for nurse practitioners can assist in attaining this objective. Mississippi policy makers have not yet come together to approve this legislation; however, it is imperative that all stakeholders realize the impact that not having enough PCPs has on the health and the wealth of the state. Independent practice authority for nurse practitioners could ultimately decrease the number of patients using the ED for CCM, thus decreasing the economic burden caused by overcrowding in the ED.

Results of this research provide insight into how health literacy, self-care, and social support affect the use of the ED for CCM in males and females with HTN and/or T2DM ages 30-64 years. Although health literacy, self-care, and social support are all predictors of ED use, findings indicate that social support is the strongest predictor.

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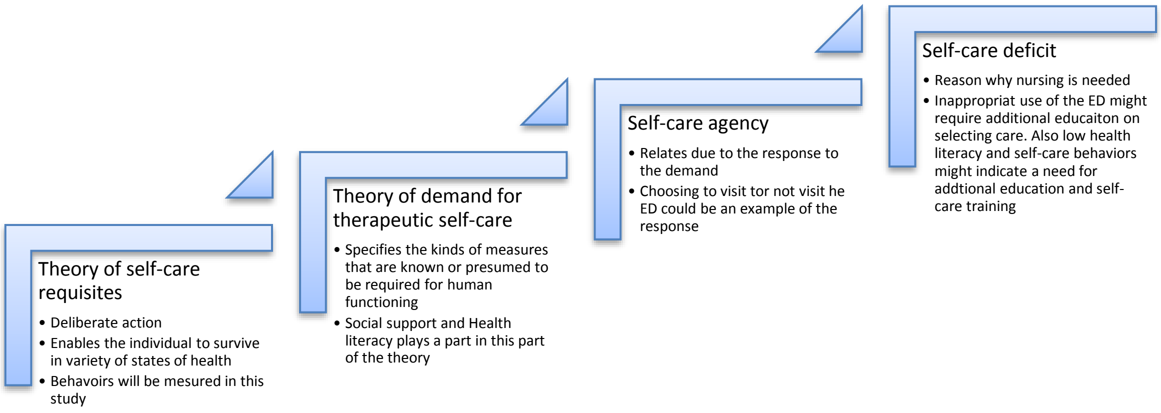
Recommendations for Future Research

The purpose of this study was to examine the relationships of health literacy, self-care behaviors, and social support as predictive factors on the use of the ED for chronic care management in patients with HTN and/or T2DM. Patients considered for the study were ages 30-64 years. The need for future research with the same or similar purpose is apparent, as there is such a scarcity of research on this subject. The proposed sample size was achieved, demonstrating significant power of this study. However, it is necessary to look at a more diverse population. It would be beneficial to explore different states that have different demographics. Also those states that have more PCPs, especially nurse practitioners that have independent practice authority. Inclusion of additional chronic conditions might find useful in generalizing the findings beyond HTN and T2DM. Finally, the study was limited to several counties in southwest Mississippi. It would be beneficial to include other areas of the U.S.

Conclusion

The increasing economic burden of overuse of the ED by those with chronic illness is an ever-growing issue in the U.S. healthcare system. Understanding what factors predict the use of the ED is very important. This study revealed significant correlation between the relationships of health literacy, self-care, and social support with the use of the ED for CCM. The results of this study can be used to influence nursing education curricula, healthcare practices, and policy regarding nurse practitioner independent practice authority. This study provides much needed information regarding the predictive effect of these factors, yet the results of this study can be used to guide further research to allow for generalization in other populations and demographic areas. The main finding in this study is the strong significant predictive effect that Overall Social Support has on the use of the ED for CCM of males and females ages 30-64 years with HTN and/or T2DM.

APPENDIX A – Adaptation of the SCDNT



Theory of self-care requisites
- Deliberate action
- Enables the individual to survive in variety of states of health
- Behavoirs will be mesured in this study

Theory of demand for therapeutic self-care
- Specifies the kinds of measures that are known or presumed to be required for human functioning
- Social support and Health literacy plays a part in this part of the theory

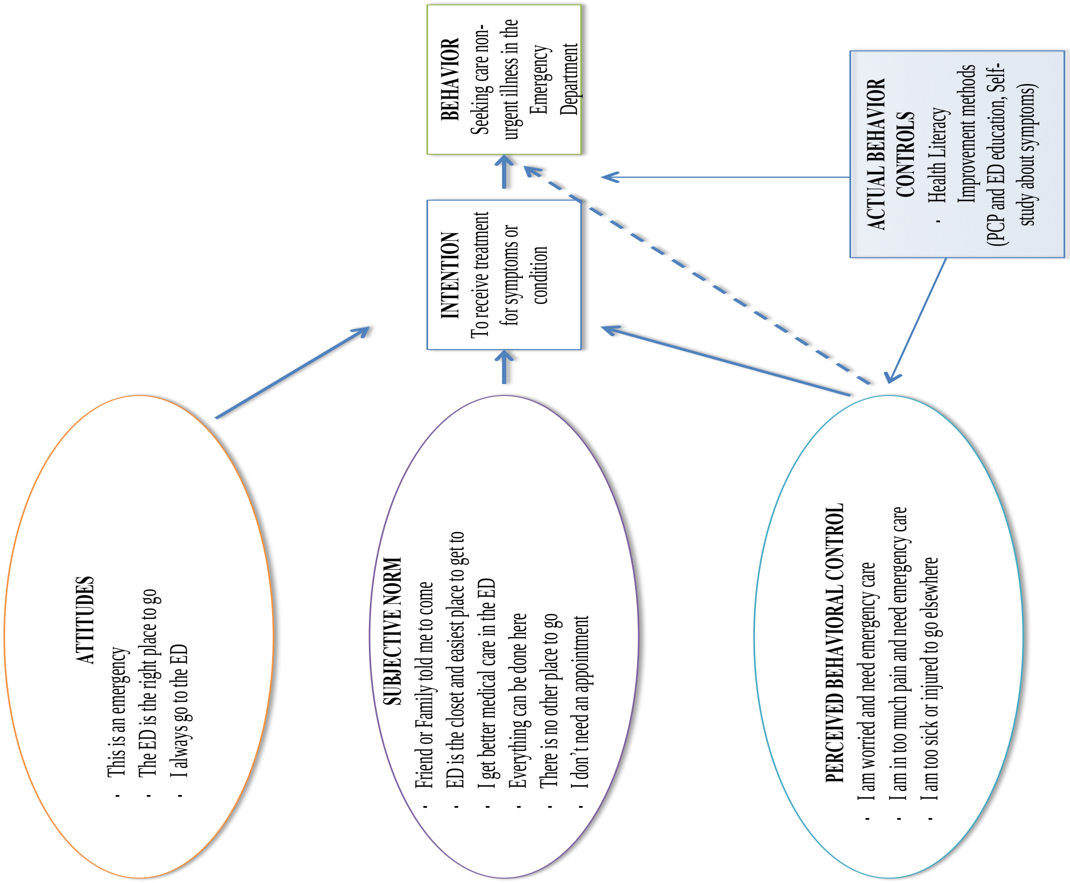
Self-care agency
- Relates due to the response to the demand
- Choosing to visit tor not visit he ED could be an example of the response

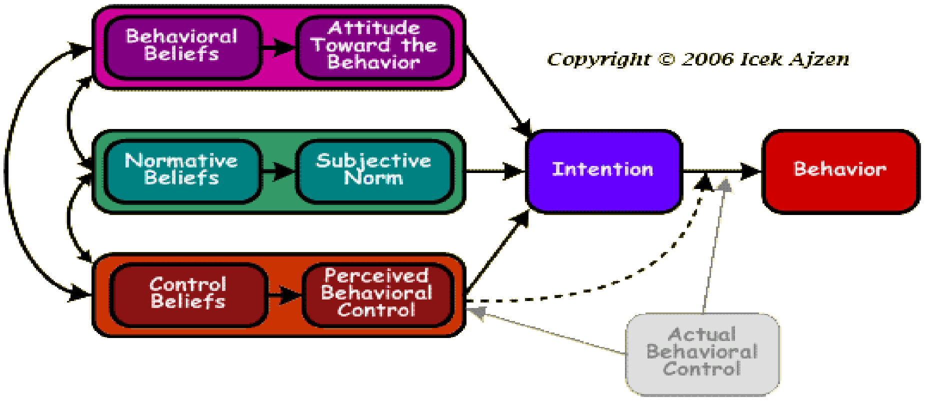
Self-care deficit
- Reason why nursing is needed
- Inappropriat use of the ED might require additional educaiton on selecting care. Also low health literacy and self-care behaviors might indicate a need for addtional education and self-care training

Theory of Nursing Systems

- Provides the structure and foundation to support the needs identified

APPENDIX B – Adaptation of Theory of Planned behavior





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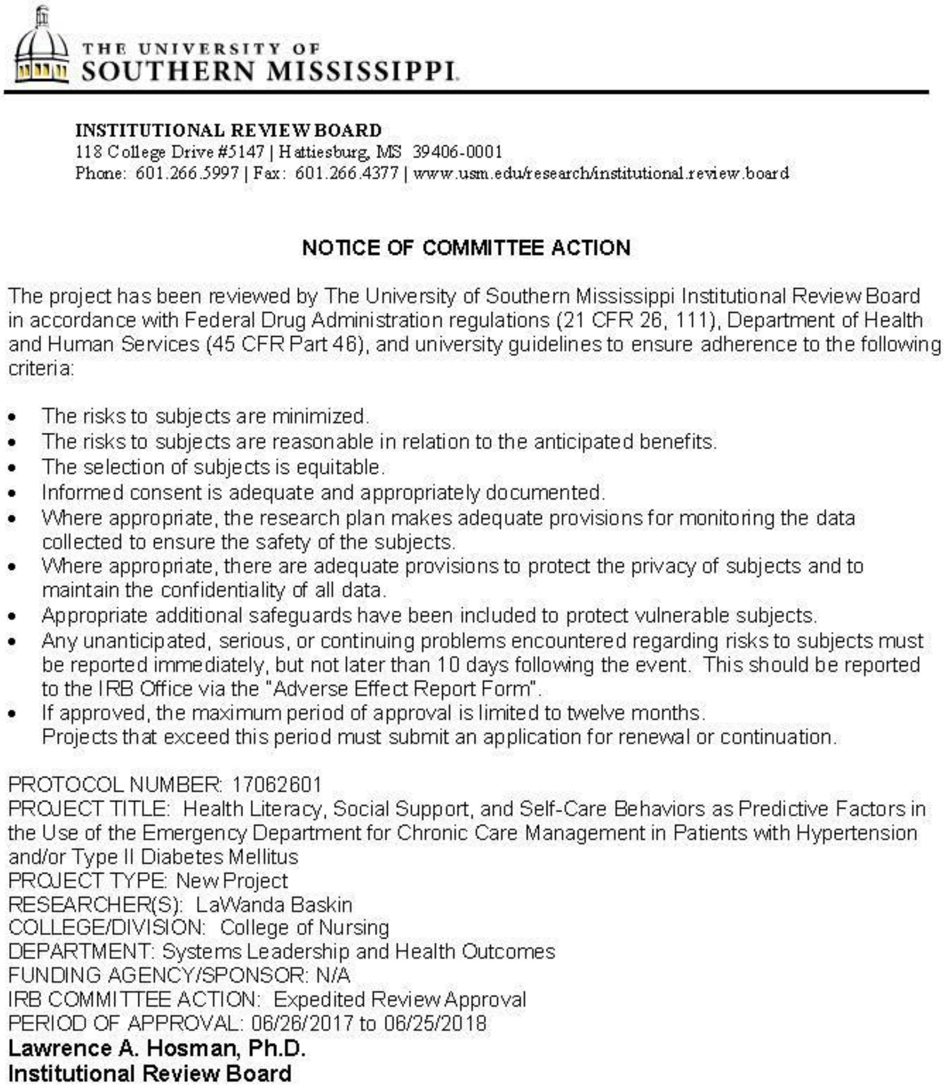
APPENDIX C – IRB Approval Letter



THE UNIVERSITY OF
SOUTHERN MISSISSIPPI

INSTITUTIONAL REVIEW BOARD
118 College Drive #5147 | Hattiesburg, MS 39406-0001
Phone: 601.266.5997 | Fax: 601.266.4377 | www.usm.edu/research/institutional.review.board

NOTICE OF COMMITTEE ACTION

The project has been reviewed by The University of Southern Mississippi Institutional Review Board in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services (45 CFR Part 46), and university guidelines to ensure adherence to the following criteria:

- The risks to subjects are minimized.
- The risks to subjects are reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered regarding risks to subjects must be reported immediately, but not later than 10 days following the event. This should be reported to the IRB Office via the "Adverse Effect Report Form".
- If approved, the maximum period of approval is limited to twelve months.
  Projects that exceed this period must submit an application for renewal or continuation.

PROTOCOL NUMBER: 17062601
PROJECT TITLE: Health Literacy, Social Support, and Self-Care Behaviors as Predictive Factors in the Use of the Emergency Department for Chronic Care Management in Patients with Hypertension and/or Type II Diabetes Mellitus
PROJECT TYPE: New Project
RESEARCHER(S): LaWanda Baskin
COLLEGE/DIVISION: College of Nursing
DEPARTMENT: Systems Leadership and Health Outcomes
FUNDING AGENCY/SPONSOR: N/A
IRB COMMITTEE ACTION: Expedited Review Approval
PERIOD OF APPROVAL: 06/26/2017 to 06/25/2018
Lawrence A. Hosman, Ph.D.
Institutional Review Board

APPENDIX D – Demographic Questionnaire

DEMOGRAPHIC QUESTIONNAIRE

Please do not continue with this study if you are pregnant, have been diagnosed with a mental illness, have been diagnosed with HIV/AIDS or you are currently institutionalized.

Site of Data Collection: ____

1. Age: __________

2. Do you have Type II Diabetes Mellitus (High Blood Sugar)?

   _____Yes _____No

3. Do you have Hypertension (High Blood Pressure)?

   _____Yes _____No

4. Have you used the emergency department for your High Blood Sugar or High Blood Pressure?

   _____Yes _____No

5. Race
   - ○ African American
   - ○ Caucasian
   - ○ Asian
   - ○ Other

6. Ethnicity
   - ○ Hispanic
   - ○ Non-Hispanic

7. Gender
   - ○ Male
   - ○ Female

8. Educational Level
   - ○ < 9th grade

○ Some high school

○ High school diploma

○ GED

○ 1-3 years college

○ Bachelor’s Degree

○ Master’s Degree

○ Doctoral Degree

9. Household Income per year

○ < $10,000

○ $10,001-$20,000

○ $20, 001-$30,000

○ $30,001-$40,000

○ $40, 001-$50,000

○ $50,001-$60,000

○ >$60,001

10. Insurance Type

○ Medicare

○ Medicaid

○ Humana

○ United Health

○ Blue Cross Blue Shield

○ Other

○ None

APPENDIX E – Short Test of Functional Health Literacy In Adults

LITERACY
in
HEALTH
CARE

Test of Functional Health Literacy in Adults

Short Test of Functional Health Literacy in Adults (STOFHLA)

STOFHLA
Directions for Administration, Scoring & Technical Data

STOFHLA - English & STOFHLA - Spanish

Directions For Administration & Scoring

I. Introduction

A. Background

A review of existing literacy assessment instruments shows that most concentrate on word recognition or narrative text comprehension skills. To answer the need for a more comprehensive evaluation of literacy, and a different conceptual framework for understanding the impact of low literacy on health status and/or health care delivery, the Literacy in Health Care Project developed the Test of Functional Health Literacy in Adults (TOFHLA). TOFHLA is a functional literacy assessment tool designed to evaluate adult literacy in the health care setting. The instrument measures functional literacy on the assumption that more than classroom reading ability is necessary to understand and negotiate the health care system adequately. TOFHLA is especially directed toward capturing numeracy and reading comprehension skills in the middle to low levels of literacy ability.

B. Short TOFHLA

Initial use of the TOFHLA indicated that healthcare professionals found a need for a shorter version for screening patient literacy in clinical and educational settings. While the full TOFHLA provides a more complete estimate of patients' functional health literacy, the Short TOFHLA is a quicker, more efficient way of determining patient functional health literacy. It measures understanding of functional health literacy tests, a more effective measure of literacy than simple word recognition. It decreases administration time to 7 minutes (from 22 minutes for the full TOFHLA) and eliminates the need for visual acuity screening. Administration is also simplified as the tasks involve no manipulatives and may be given as a group test.

C. Special Considerations for Testing Low Literate Patients

An important part of health literacy features personal ability. Those with few or reduced skills often feel vulnerable when literacy inability is brought to their attention or to the attention of those around them. The force of this vulnerability is heightened by peer and social pressure. Consequently, low literate persons employ sophisticated mechanisms to conceal their literacy skill level and to prevent subsequent discovery or embarrassment, not to mention outright anger.

You very likely will encounter some of these low literacy behaviors:

- pointing to the text with a finger, while reading
- lifting the text closer to be read
- claiming "the light's not good"

- complaining about “having trouble seeing”
- expressing fatigue
- explaining that they don’t have time
- stating that they don’t think the material is interesting

When you encounter low literacy, soften the impact of unmasking by stating compassionately, “I am not here to embarrass you, frustrate you, or make you feel uncomfortable. I am willing to stop if you want to, but the information you can give me is very special and valued highly by all of us here. (PAUSE) May I continue?” Honor the dignity to which every human is entitled.

II. Preliminary Procedures

A. Informed Consent

Your hospital or health-care setting may require you to obtain a signed Informed Consent from the patient before testing may begin. Your institution may have a standard form and/or a procedure for developing one. The informed consent must be read orally verbatim. Paraphrasing is allowed, but not as a substitute for verbatim reading. When the respondent signs the consent, in effect he/she gives you permission to ask them questions, but they do not commit themselves to answering the questions. It is normal, however, for the respondent to answer all questions asked. Typically, the informed consent provides the respondent with information about procedures, risks and discomforts, expected benefits, withdrawal of consent, confidentiality and project disclaimer of financial reliability in the event of injury. Manage the consent procedure with the same diligence you use to administer a data collection tool.

B. Visual Acuity

Routinely, low literate persons will mask reading problems by saying that they cannot see the materials they are given. This test is printed in 14 point font (large print) appropriate for persons with visual acuity at least 20/50. If the respondent wears glasses, ask them to put them on for this test.

C. Language Preference

If the patient’s dominant language is Spanish, administer the Spanish-version of Short TOFHLA (STOFHLA-Spanish). However, it is important to remember this gives information on the patient’s literacy in Spanish, not English. The health care facility needs to provide written material in Spanish as well as English for these patients.

III. STOFHLA: Reading Comprehension

A. Description

STOFHLA (Reading Comprehension) tests a patient's ability to read passages using real materials from the health care setting. The test of 36 items uses a modified Cloze procedure. Passages are selected from instructions for preparation for an upper GI series and the patient rights and responsibilities section of a Medicaid application form. Readability levels on the Gunning Fog index are grades 4.3 and 10.4 respectively. The passages are ordered by increasing difficulty.

B. Directions for Administration

It is important to present the reading comprehension section verbatim from the scripted introduction. Once introduced, fold the preceding pages back so that the respondent sees only the text passages. Turn one or two pages to show the respondent what you mean, and turn them in a way that only shows the text passages. If the respondent asks about the score columns, tell them that the boxes are for use in the office. Do not tell the respondent that they are score columns. This is a timed test and should be stopped at the end of 7 minutes. Do not inform the respondent in advance that the test is timed. When 7 minutes have elapsed, tell the respondent that "That should give us what we are looking for. Thank you for your cooperation." and remove the test materials.

C. Directions for Scoring STOFHLA: Reading Comprehension

Score the results immediately on the spot, after the respondent has left. You will need to do six things to confirm and transcribe respondent data to appropriate boxes in the column of boxes appearing on the page opposite the text:

1. For each blank, circle the letter in the box corresponding to the letter selected by the respondent.
2. Compare the answers by page and variable name to the appropriate scoring key provided below.
3. In the score box, circle "1" for correct or "0" for incorrect for each blank.
4. Sum correct answers for each page, and record total at bottom of page.
5. Sum the subtotals for all pages and record total on the last scoring column page as the Reading Comprehension Raw Score. Record in the appropriate box on the back cover of the test booklet (STOFHLA Total Score).

STOFHLA: Reading Comprehension Score Key

English: 14 Point Font

Passage A	Passage A	Passage A	Passage B	Passage B	Passage B
A1 a	A6 a	A12 c	B17 c	B24 d	B33 d
A2 b	A7 c	A13 b	B18 a	B25 b	B34 c
A3 d	A8 b	A14 c	B19 d	B26 c	B35 b
A4 a	A9 d	A15 d	B20 b	B27 d	B36 b
A5 c	A10 b	A16 a	B21 d	B28 d	
	A11 c		B22 c	B29 a	
			B23 a	B30 c	
				B31 b	
				B32 a	

STOFHLA: Reading Comprehension Score Key

Spanish: 14 Point Font

Passage A	Passage A	Passage B	Passage B	Passage B
A1 b	A10 c	B17 a	B24 a	B34 a
A2 a	A11 a	B18 b	B25 c	B35 d
A3 c	A12 c	B19 a	B26 b	B36 b
A4 c	A13 a	B20 b	B27 c	
A5 a	A14 b	B21 a	B28 b	
A6 d	A15 a	B22 d	B29 b	
A7 c	A16 a	B23 c	B30 a	
A8 c			B31 a	
A9 b			B32 d	
			B33 c	

IV. STOFLHA: Functional Health Literacy Level

A. Functional Health Literacy Level

Look up the Total STOFHLA Score on the table below. Record the patient's Functional Health Literacy Level on the back cover of the test booklet.

TOFHLA Functional Health Literacy Levels

Level	**TOFHLA Score**	**Functional Health Literacy Description**
Inadequate Functional Health Literacy	0-16	Unable to read and interpret health texts.
Marginal Functional Health Literacy	17-22	Has difficulty reading and interpreting health texts.
Adequate Functional Health Literacy	23-36	Can read and interpret most health texts.

B. Functional Interpretation of STOFHLA Scores

1. Patients who have **Adequate Functional Health Literacy** should be able to read, understand, and interpret most health texts.

2. Patients who have **Marginal** or **Inadequate Functional Health Literacy** will have difficulty reading, understanding, and interpreting most health materials. They are not going to be able to read and understand directions for their health care. They are likely to take their medications incorrectly or to fail to follow prescribed diets or treatment regimens. Modifications must be made in the health care setting in order to accommodate these persons. Recommendations include the following:

   - Suggest the person bring someone along with them to read and interpret health texts.
   - Suggest the person use someone at home to read and interpret health texts.
   - Rewrite health materials, including prescription bottle labels at a lower literacy level (below 5th grade readability level).
   - Use pictures, graphic directions, symbols to indicate directions, information, and procedures.

- Have staff available to assist patients whose functional health literacy level is low.
- Provide important information on audio-tape and/or video-tape.

Remember that persons with low functional health literacy often are ashamed of their literacy status. They will be unlikely to volunteer that they can not read or to ask for assistance. Low literacy does not mean low intelligence. Treat them with dignity and respect, offering literacy help but not talking down to them.

V. STOFHLA: Technical Report

The STOFHLA (English & Spanish) consists of two functional health reading comprehension passages. In a group of 211 patients given the STOFHLA at the Urgent Care Center and Medical Clinic at Grady Memorial Hospital in Atlanta, Chronbach's Alpha (internal consistency) was 0.97 (0.94 for passage A & 0.97 for Passage B). The correlation (Spearman) with the REALM was 0.81 and with the full TOFHLA 0.91. For further information on the development of the Short TOFHLA, see Baker, Williams, Parker, Gazmarian, & Nurss, 1998.

When Should You Use:

Short TOFHLA
- Screening patients in a medical clinic.
- Determining literacy level for a health variable in education program.
- Including literacy level as a descriptive variable.

Full TOFHLA
- Including literacy as a dependent or independent research.

LITERACY
in
HEALTH
CARE

Test of Functional Health Literacy in Adults

Short Test of Functional Health Literacy in Adults (STOFHLA)

STOFHLA
Large Print Version
English, 14 point font

Short Test of Functional Literacy in Adults
STOFHLA
READING COMPREHENSION

HAND PATIENT THE READING COMPREHENSION PASSAGES TO BE COMPLETED. FOLD BACK THE PAGE OPPOSITE THE TEXT SO THAT THE PATIENT SEES ONLY THE TEXT.

PREFACE THE READING COMPREHENSION EXERCISE WITH:

> "Here are some other medical instructions that you or anybody might see around the hospital. These instructions are in sentences that have some of the words missing. Where a word is missing, a blank line is drawn, and 4 possible words that could go in the blank appear just below it. I want you to figure out which of those 4 words should go in the blank, which word makes the sentence make sense. When you think you know which one it is, circle the letter in front of that word, and go on to the next one. When you finish the page, turn the page and keep going until you finish all the pages."

STOP AT THE END OF 7 MINUTES

PASSAGE A:	X-RAY PREPARATION
PASSAGE B:	MEDICAID RIGHTS AND RESPONSIBILITIES

PASSAGE A

A1	(1)	(0)
a.		
b.		
c.		
d.		

A2	(1)	(0)
a.		
b.		
c.		
d.		

A3	(1)	(0)
a.		
b.		
c.		
d.		

A4	(1)	(0)
a.		
b.		
c.		
d.		

A5	(1)	(0)
a.		
b.		
c.		
d.		

Sub-Total

PASSAGE A

Your doctor has sent you to have a ______________ X-ray.

- a. stomach
- b. diabetes
- c. stitches
- d. germs

You must have an ______________ stomach when you come for _______.

a. asthma	a. is.
b. empty	b. am.
c. incest	c. if.
d. anemia	d. it.

The X-ray will __________ from 1 to 3 ____________ to do.

a. take	a. beds
b. view	b. brains
c. talk	c. hours
d. look	d. diets

A6	(1)	(0)	A7	(1)	(0)
a.			a.		
b.			b.		
c.			c.		
d.			d.		

A8	(1)	(0)	A9	(1)	(0)
a.			a.		
b.			b.		
c.			c.		
d.			d.		

A10	(1)	(0)	A11	(1)	(0)
a.			a.		
b.			b.		
c.			c.		
d.			d.		

Sub-Total

THE DAY BEFORE THE X-RAY.

For supper have only a ____________ snack of fruit, ____________ and jelly,

a. little	a. toes
b. broth	b. throat
c. attack	c. toast
d. nausea	d. thigh

with coffee or tea.

After ______________ , you must not ________ or drink

a. minute,	a. easy
b. midnight,	b. ate
c. during,	c. drank
d. before,	d. eat

anything at ________ until <u>after</u> you have ________ the X-ray.

a. ill	a. are
b. all	b. has
c. each	c. had
d. any	d. was

A12	(1)	(0)
a.		
b.		
c.		
d.		

A13	(1)	(0)	A14	(1)	(0)
a.			a.		
b.			b.		
c.			c.		
d.			d.		

A15	(1)	(0)	A16	(1)	(0)
a.			a.		
b.			b.		
c.			c.		
d.			d.		

Sub-Total

THE DAY OF THE X-RAY.

Do not eat ________________.

- a. appointment.
- b. walk-in.
- c. breakfast.
- d. clinic.

Do not ____________ , even ____________.

a. drive,	a. heart.
b. drink,	b. breath.
c. dress,	c. water.
d. dose,	d. cancer.

If you have any ____________ , call the X-ray ______________ at 616-4500.

a. answers,	a. Department
b. exercises,	b. Sprain
c. tracts,	c. Pharmacy
d. questions,	d. Toothache

B17	(1)	(0)
a.		
b.		
c.		
d.		

B18	(1)	(0)	B19	(1)	(0)
a.			a.		
b.			b.		
c.			c.		
d.			d.		

B20	(1)	(0)
a.		
b.		
c.		
d.		

B21	(1)	(0)	B22	(1)	(0)
a.			a.		
b.			b.		
c.			c.		
d.			d.		

B23	(1)	(0)
a.		
b.		
c.		
d.		

Sub-Total

PASSAGE B

I agree to give correct information to ________ if I can receive Medicaid.

a. hair
b. salt
c. see
d. ache

I ________ to provide the county information to ____________ any

a. agree
b. probe
c. send
d. gain

a. hide
b. risk
c. discharge
d. prove

statements given in this ______________ and hereby give permission to

a. emphysema
b. application
c. gallbladder
d. relationship

the ____________ to get such proof. I ____________ that for

a. inflammation
b. religion
c. iron
d. county

a. investigate
b. entertain
c. understand
d. establish

Medicaid I must report any ______________ in my circumstances

a. changes
b. hormones
c. antacids
d. charges

B24	(1)	(0)	B25	(1)	(0)
a.			a.		
b.			b.		
c.			c.		
d.			d.		

B26	(1)	(0)	B27	(1)	(0)
a.			a.		
b.			b.		
c.			c.		
d.			d.		

B28	(1)	(0)	B29	(1)	(0)
a.			a.		
b.			b.		
c.			c.		
d.			d.		

B30	(1)	(0)
a.		
b.		
c.		
d.		

B31	(1)	(0)	B32	(1)	(0)
a.			a.		
b.			b.		
c.			c.		
d.			d.		

Sub-Total

within ________ (10) days of becoming __________ of the change.

a. three
b. one
c. five
d. ten

a. award
b. aware
c. away
d. await

I understand ________ if I DO NOT like the ______________ made on my

a. thus
b. this
c. that
d. than

a. marital
b. occupation
c. adult
d. decision

case, I have the __________ to a fair hearing. I can ____________ a

a. bright
b. left
c. wrong
d. right

a. request
b. refuse
c. fail
d. mend

hearing by writing or ____________ the county where I applied.

a. counting
b. reading
c. calling
d. smelling

If you _________ TANF for any family ____________, you will have to

a. wash
b. want
c. cover
d. tape

a. member,
b. history,
c. weight,
d. seatbelt,

B33 (1) (0) a. b. c. d.	B34 (1) (0) a. b. c. d.

B35 (1) (0) a. b. c. d.	B36 (1) (0) a. b. c. d.

READING COMPREHENSION
RAW SCORE

Sub-Total

_________ a different application form. _____________ , we will use

a. relax	a. Since,
b. break	b. Whether,
c. inhale	c. However,
d. sign	d. Because,

the _________ on this form to determine your ____________________ .

a. lung	a. hypoglycemia.
b. date	b. eligibility.
c. meal	c. osteoporosis.
d. pelvic	d. schizophrenia.

Short Test of Functional Health Literacy in Adults (STOFHLA)

Joanne R. Nurss, Ph.D., Ruth M. Parker, M.D., Mark V. Williams, M.D., & David W. Baker, M.D., M.P.H.

TOFHLA is a measure of the patient's ability to read and understand health care information, their functional health literacy. TOFHLA Numeracy assesses their understanding of prescription labels, appointment slips, and glucose monitoring. TOFHLA Reading Comprehension assesses their understanding of health care texts such as preparation for a diagnostic procedure and Medicare Rights & Responsibilities.

Date ______/______/______

Name ____ _____ M _____ F

Birthdate ______/______/______ Age ______ SSN or ID# ________________________

Hospital or Health-care Setting _________________________

City, State ______________________________

Short Form Administered: ____English ____Spanish

STOFHLA - Score

TOFHLA Total Score:
Reading Comprehension Raw Score (0-36)

Functional Health Literacy Level:

0 - 16 -- Inadequate Functional Health Literacy

17 - 22 -- Marginal Functional Health Literacy

23 - 36 -- Adequate Functional Health Literacy

July 1995

STOFHLA: Reading Comprehension
Scoring Key

14 Point Font

Passage A	Passage A	Passage A	Passage B	Passage B	Passage B
A1 a	A6 a	A12 c	B17 c	B24 d	B33 d
A2 b	A7 c	A13 b	B18 a	B25 b	B34 c
A3 d	A8 b	A14 c	B19 d	B26 c	B35 b
A4 a	A9 d	A15 d	B20 b	B27 d	B36 b
A5 c	A10 b	A16 a	B21 d	B28 d	
	A11 c		B22 c	B29 a	
			B23 a	B30 c	
				B31 b	
				B32 a	

APPENDIX F – Self-care Measure

SIDANI DORAN THERAPEUTIC SELF-CARE MEASURE (Acute Care Settings)

Each of the following questions is about an aspect of your care related to your present health condition. Indicate how much you are able to do each care related activity, by choosing the number between 0 and 5 that is most appropriate.

Care Activity	Not at all					Very much so
1. Do you know what medications you have to take?	0	1	2	3	4	5
2. Do you understand the purpose of the medications prescribed to you (that is, you know what the medications do for your health condition)?	0	1	2	3	4	5
3. Are you able to take the medications as prescribed?	0	1	2	3	4	5
4. Can you recognize changes in your body (symptoms) that are related to your illness or health condition?	0	1	2	3	4	5
5. Do you understand why you experience some changes in your body (symptoms) related to your illness or health condition?	0	1	2	3	4	5
6. Do you know and understand what to do (things or activities) to control these changes in your body (symptoms)?	0	1	2	3	4	5
7. Are you able to carry out the treatments or activities that you have been taught to manage these changes in your body (symptoms)?	0	1	2	3	4	5
8. Are you able to do things or activities to look after yourself and to maintain your health in general?	0	1	2	3	4	5
9. Do you know whom to contact to get help in carrying out your daily activities?	0	1	2	3	4	5
10. Do you know whom to contact in case of a medical emergency?	0	1	2	3	4	5
11. Are you able to perform regular activities (such as bathing, shopping, preparing meals, visiting with friends)?	0	1	2	3	4	5
12. Are you able to adjust your regular activities when you experience body changes (symptoms) related to your illness or health condition?	0	1	2	3	4	5

APPENDIX G – Social Support Survey

RAND
CORPORATION

RAND > RAND Health > Surveys > RAND Medical Outcomes Study > Social Support Survey >

Social Support Survey Instrument

People sometimes look to others for companionship, assistance, or other types of support. How often is each of the following kinds of support available to you if you need it? Choose one number from each line.

Emotional/ informational support	None of the time	A little of the time	Some of the time	Most of the time	All of the time
Someone you can count on to listen to you when you need to talk	○ 1	○ 2	○ 3	○ 4	○ 5
Someone to give you information to help you understand a situation	○ 1	○ 2	○ 3	○ 4	○ 5
Someone to give you good advice about a crisis	○ 1	○ 2	○ 3	○ 4	○ 5
Someone to confide in or talk to about yourself or your problems	○ 1	○ 2	○ 3	○ 4	○ 5
Someone whose advice you really want	○ 1	○ 2	○ 3	○ 4	○ 5
Someone to share your most private worries and fears with	○ 1	○ 2	○ 3	○ 4	○ 5
Someone to turn to for suggestions about how to deal with a personal problem	○ 1	○ 2	○ 3	○ 4	○ 5
Someone who understands your problems	○ 1	○ 2	○ 3	○ 4	○ 5

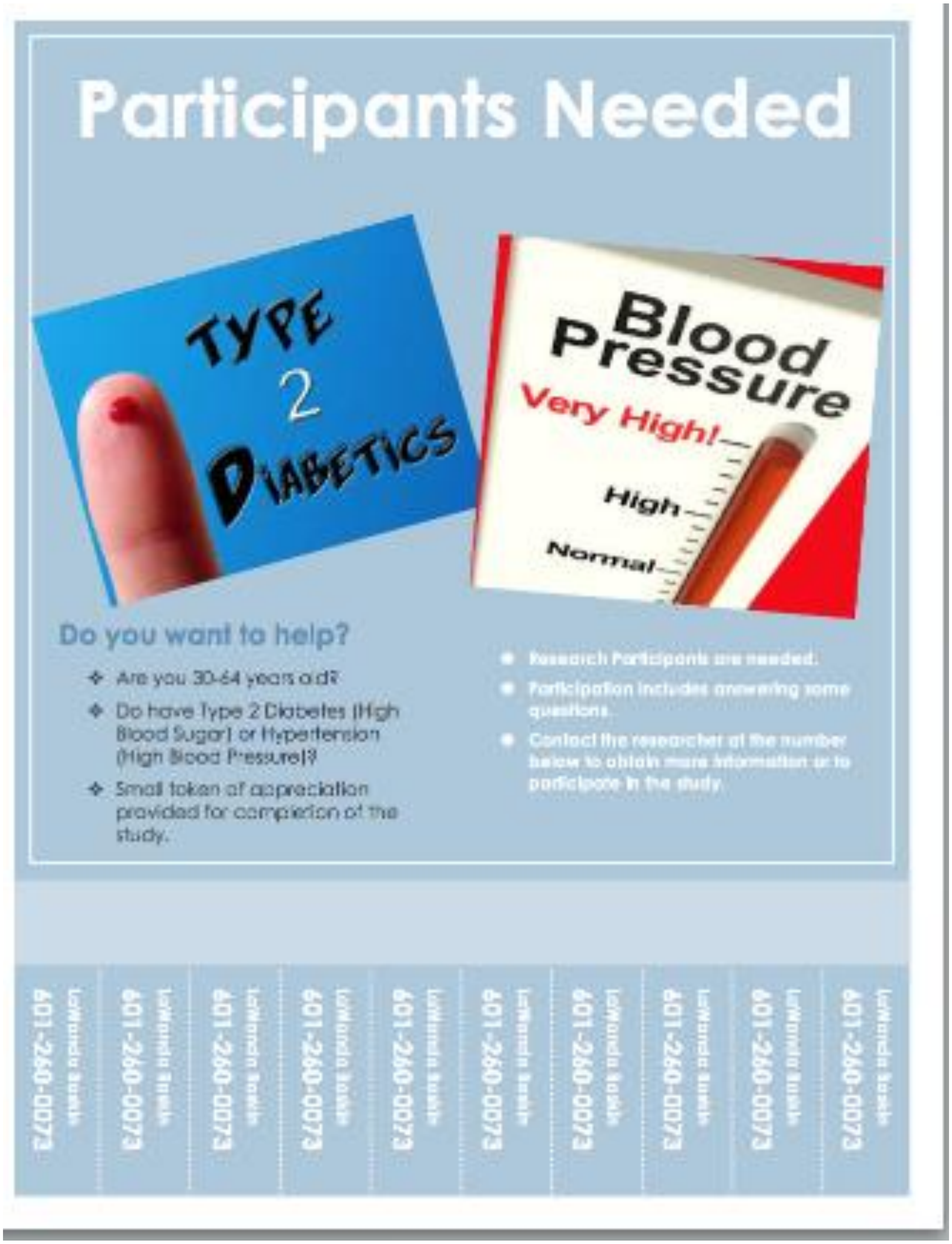
Tangible support	None of the time	A little of the time	Some of the time	Most of the time	All of the time
Someone to help you if you were confined to bed	○ 1	○ 2	○ 3	○ 4	○ 5
Someone to take you to the doctor if you needed it	○ 1	○ 2	○ 3	○ 4	○ 5
Someone to prepare your meals if you were unable to do it yourself	○ 1	○ 2	○ 3	○ 4	○ 5
Someone to help with daily chores if you were sick	○ 1	○ 2	○ 3	○ 4	○ 5

Affectionate support	None of the time	A little of the time	Some of the time	Most of the time	All of the time
Someone who shows you love and affection	○ 1	○ 2	○ 3	○ 4	○ 5
Someone to love and make you feel wanted	○ 1	○ 2	○ 3	○ 4	○ 5
Someone who hugs you	○ 1	○ 2	○ 3	○ 4	○ 5

Positive social interaction	None of the time	A little of the time	Some of the time	Most of the time	All of the time
Someone to have a good time with	○ 1	○ 2	○ 3	○ 4	○ 5
Someone to get together with for relaxation	○ 1	○ 2	○ 3	○ 4	○ 5
Someone to do something enjoyable with	○ 1	○ 2	○ 3	○ 4	○ 5

Additional item	None of the time	A little of the time	Some of the time	Most of the time	All of the time
Someone to do things with to help you get your mind off things	○ 1	○ 2	○ 3	○ 4	○ 5

APPENDIX H – Recruitment Flyer



Participants Needed

Do you want to help?

- Are you 30-64 years old?
- Do have Type 2 Diabetes (High Blood Sugar) or Hypertension (High Blood Pressure)?
- Small token of appreciation provided for completion of the study.

- Research Participants are needed.
- Participation includes answering some questions.
- Contact the researcher at the number below to obtain more information or to participate in the study.

LaWanda Baskin
601-260-0073

LaWanda Baskin
601-260-0073

LaWanda Baskin
601-260-0073

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LaWanda Baskin
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