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## Case Managers' Perceptions of Effective Interventions

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Case Managers' Perceptions of Effective Interventions

by

Julia Williamson

A thesis submitted to the faculty of  
Gardner-Webb University School of Nursing  
in partial fulfillment of the requirements for the  
Master of Science in Nursing Degree

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Submitted by:

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Date

## Abstract

Case managers (CM) identify patients with high emergency department (ED) utilization and barriers to healthcare services. CM interventions need to be evaluated related to high ED utilization, identification of effective interventions, and improving patients' self-management skills. Current literature supports the review and implementation of identified CM interventions to reduce non-emergent ED utilization, and improved patients' health literacy, and self-management abilities. There is a lack in research related to CM perceptions' of effective interventions to reduce ED utilization. The purpose of this study was to examine CM perceptions' of patients' low health literacy and self-management skills, identify barriers to self-care, and identify CM interventions to reduce ED utilization. This descriptive quantitative study design utilized the Preventive Medicine Attitudes and Activities Questionnaire (PMAAQ) survey tool to examine CM perceptions' of effective interventions on a series of patient health promotion activities. Sample size was 31 CMs from ambulatory and inpatient CM departments. Participants' responses reflected a lack of impact on changing patients' lifestyle behaviors and improving patients' self-management skills. Majority (49%) of the participants' rated the patients' lack appropriate understanding when utilizing health services, low health literacy, and lack understanding the importance of health promotion as very significant barriers. CMs identified time and patients' lack of understanding when utilizing health care services as the greatest barrier to assisting patients. CM interventions need to be examined in regard to identified barriers to care. Healthcare systems should promote more patient education on the appropriate utilization of services.

*Keywords: emergency department, frequent utilization, health literacy, interventions, self-management, and case management.*

## Acknowledgments

The journey to obtain my MSN began several years ago because my father wanted me to advance in my profession and become a nursing educator. Along the way, I encountered many roadblocks to impede my success. Each setback made me more determined to complete my MSN. Unfortunately, my father passed away 4 months prior to my completion of my MSN program. He knew how hard I have worked and was proud I chose my profession to help others.

I am thankful for the support and guidance of my thesis advisor, Dr. Abby Garlock, during the MSN thesis work. Additionally, I want express thanks to my colleagues and leadership team during my thesis work and providing me support.

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## **CHAPTER I**

### **Introduction**

Case managers serve as a liaison for patients and their families to navigate the healthcare system. Patients and families rely upon case managers to assist with hospital discharges, provide coordination of care, link to community resources, promote self-management skills to patients, and provide patient education. Case managers utilize problem-solving abilities, fine tune critical thinking skills, and provide patient advocacy. Hospitals, emergency departments, and primary care practices have implemented case management services to identify gaps in continuity of care and linking patients to appropriate services.

### **Problem Statement**

The role of the case manager is expanding to cost saving efforts within healthcare systems. An area of high cost in healthcare spending is the over utilization of emergency departments. Healthcare systems across the country are using care management services to reduce emergency department visits (Kumar & Klein, 2012). Case managers are responsible for identifying and engaging patients with high utilization of healthcare services. Case managers have the difficult tasks of engaging patients and identifying potential barriers to self-care or the lack of access to appropriate healthcare services.

Case management interventions need to be evaluated for healthcare cost savings in relation to high utilization of emergency departments services. Identification of effective interventions can refine case management services. Case managers can be better prepared to assist this patient population with effective interventions and improving patients' self-management skills. Patients with low health literacy comprise a majority of

high utilization of emergency departments. Many of these patients lack the understanding of self-management skills and manage their own healthcare (Griffey, Kennedy, McGowan, Goodman, & Kaphingst, 2014).

### **Significance**

The patient population with high emergency department utilization is diverse related to various contributing factors. These factors are multiple chronic health conditions, substance abuse issues, mental health conditions, homelessness, lack of insurance, and low health literacy (LaCalle, Rabin, & Genes, 2013). Case management services are viewed as a cost saving resource. Grover et al. (2018) investigated the impact of case management services on the patient population with high utilization of emergency departments and inpatient admissions. Grover et al. (2018) identified total cost savings of \$5,834,275 in emergency department and inpatient admission charges for one year. The savings were related to high utilizer patients' enrollment in case management services program. Healthcare systems have created ambulatory case management services to link patients to a primary care provider. The ambulatory case manager provides care coordination for patients in the community. The key component is linking patients to a primary care provider to assist with continuity of care.

### **Purpose**

The purpose of this study was to examine the ambulatory case managers' perceptions of patients' low health literacy, perceptions of self-management skills of patients with high utilization rates, identification of barriers to self-care, and interventions of ambulatory case managers to reduce high utilization rates. The information obtained

from this study can be used to improve patients' self-management skills, improve health literacy, and review case managers' perceptions of effective interventions.

### **Theoretical/Conceptual Framework**

Orem's Self-Care Deficit Theory is the theoretical framework for this study. The concepts of self-care requisites and supporting propositions can be applied to the nursing process. "Orem's approach to the nursing process provides a method to determine the self-care deficits and then to define the roles of patient or nurse to meet the self-care demands" (Peptiprin, 2016).

The major assumptions of Orem's Self-Care Deficit Theory are comprised of six primary assumptions. The generalization of these assumptions incorporate the ideas that people are: self-reliant and responsible for his/her own care, distinct individuals, nursing is an interaction between two or more people, prevention and removal of ill health by meeting developmental and universal self-care requisites, individual knowledge about potential health issues to implement self-care behaviors, and self-care and dependent care are learned behaviors within socio-cultural environment ("Dorothea Orem Self Care Deficit", 2017). These assumptions are the basis for self-management, health literacy, and nursing interventions.

Self-care and health literacy can be described as health deviation self-care requisites. Health deviation self-care is important in circumstances related to disease or illness. "Health-deviation self-care requisites are related to deviations in structure or function of a human being" (Masters, 2015, p. 58). The six categories of health-deviation requisites are: seeking and securing medical assistance, awareness and attending to illness, completing prescribed medical treatments, awareness and attending to treatment

side effects, self-concept modification of oneself related to distinct state of health, and ability to live with effects of an illness and treatment (Masters, 2015, p. 58). The role of the case manager was to assist patients with low health literacy and deficiencies in self-management skills.

According to Orem, nursing is required when an adult is incapable or limited in the provision of continuous, effective self-care. The theory identifies five methods of helping: acting for and doing for others; guiding others; supporting another; providing an environment promoting personal development in relation to meet future demands; and teaching another. (Peptiprin, 2016)

Case management interventions are related to self-care deficits. Bodenmann et al. (2014) identified case management interventions to be assistance with income entitlements, housing resources, access to health insurance coverage if patient met eligible criteria, referrals to mental health providers, referrals to substance abuse services, and assistance with accessing a primary care provider.

Orem's Theory of Nursing Systems can be applied when fulfilling the self-requisites of the patient, and include the wholly compensatory system, partially compensatory system, and supportive-educative system (Kumar, 2007). The supportive-educative system is defined as "the patient has the ability for self-care but requires assistance from the nurse in decision making, knowledge, or skill acquisition. The nurse's role is to promote the patient as a self-care agent" (Masters, 2015, p. 59). This system views the patient with the ability to fulfill self-care needs, and the nurse responsible of guidance and education related to self-care measures and health promotion. The health

deviation system relies upon the nurse's assessment of the patient's self-care ability (Masters, 2015, p. 59).

The Three Steps of Orem's Nursing Process (data collection, organization, and assistance) are essential to the determination of patient self-care needs, and establishing interventions. The case manager uses assessment skills to gather information related to high utilization of emergency departments by patients. The data collected was analyzed and interpreted to formulate a plan of care. The nurse designs a system to provide supportive education to the patient; and the use of effective methods to create a plan of care. The patient was assisted by the nurse to implement the plan of care to achieve self-care goals ("Dorothea Orem Self Care Deficit", 2017). Patients with low health literacy needs assistance with navigating the health care system. The nurse case manager incorporates assessment skills to investigate reasons for high utilization of emergency departments and assists with patients' plan of care to achieve self-care needs.



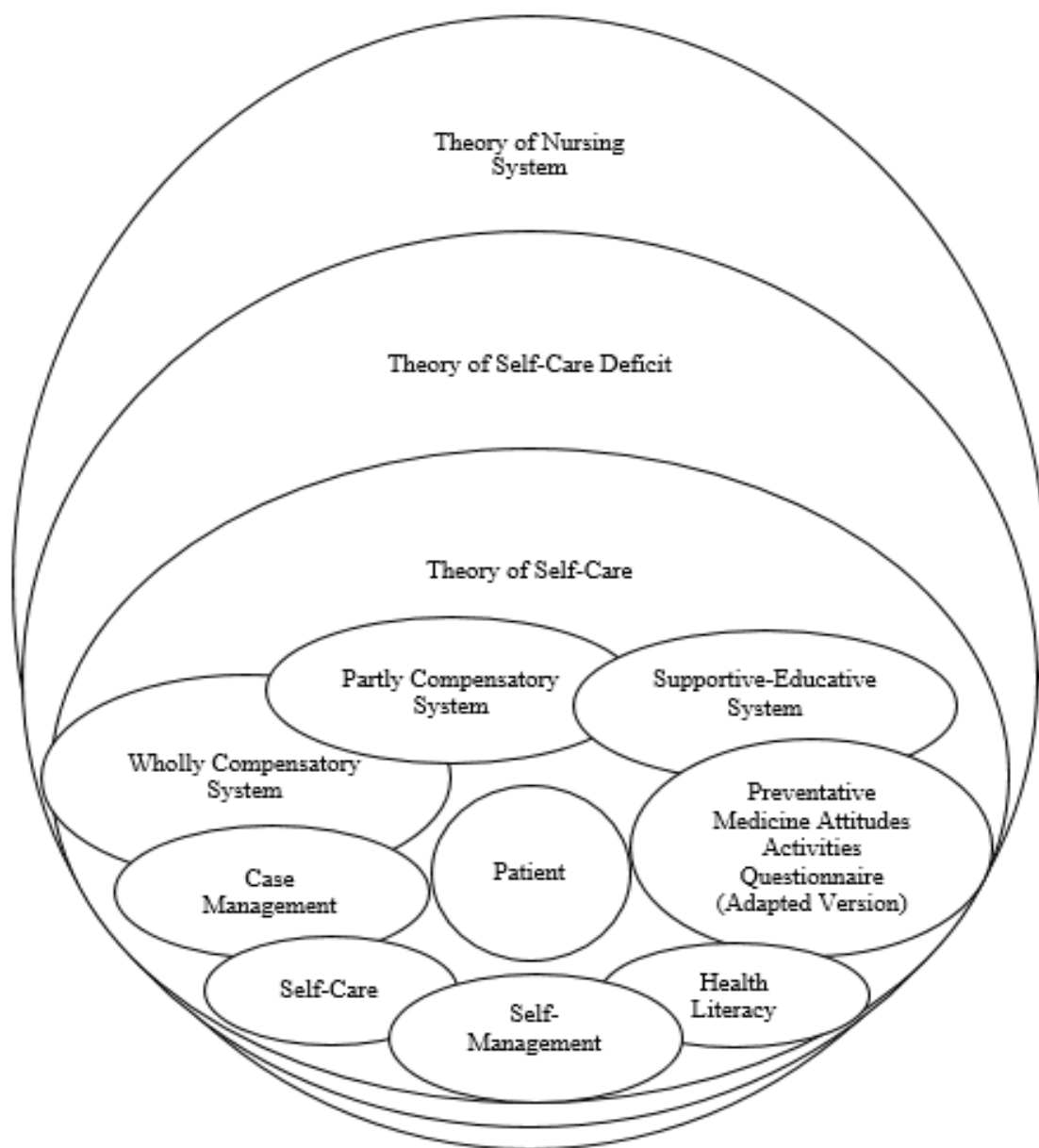


Figure 1. Orem's Self-Care Theory System with Case Management

### **Research Questions**

1. What are the case managers' perceptions of factors affecting over-utilization of the emergency departments?
2. What are the case managers' perceptions of patients with low health literacy and the effectiveness or ineffectiveness of their self-management skills?
3. What interventions do case managers' perceive to be effective in reduction of over-utilization of the emergency departments?

### **Definition of Terms**

- Health literacy is defined as “the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions” (Nielsen-Bohlman, Panzer, & Kindig, 2004, p. 32). Health literacy requires a set of skills to read, listen, analyze, and decision-making abilities to navigate the healthcare system (Nielsen-Bohlman et al., 2004).
- Self-management is defined as “the care taken by individuals towards their own health and well being” (Clark et al., 1991, p. 5). Self-management is associated with an individual's ability prevent illness, problem solving ability, decision-making skills, manage chronic health conditions, and making health decisions (Grady & Gough, 2014).
- High utilization of emergency departments is defined as patients with greater than two visits per year to emergency departments. Many emergency department visits are often viewed as non-emergent and inappropriate. This contributes to ED overcrowding, compromises quality

of care for other patients, and reduces efficiency of health care systems”  
(Kumar & Klein, 2012).

### **Summary**

The patients with high emergency department utilization often lack adequate health literacy and self-management abilities. Many of these patients do not understand appropriate reasons to seek care at the emergency department. The high utilization of the emergency room is a growing problem. Case managers can work with patients to provide patient education, collaborate with primary care providers, and link patients to community resources. Case management services have proved to reduce healthcare costs and emergency room utilization for non-emergent conditions (Soril, Leggett, Lorenzetti, Noseworthy, & Clement, 2015).

## CHAPTER II

### Literature Review

Inadequate health literacy and self-management abilities can present a problem with frequent emergency department utilization and poor health outcomes. In recent years, case managers have provided patients with guidance in navigating the health care system, and advocacy to access health care services. The role of the case manager has become more important in the reduction of health care costs and over utilization of emergency departments for non-emergent conditions. Current literature supports the review and implementation of identified case management interventions to reduce non-emergent emergency department utilization and improve patients' health literacy and self-management abilities.

#### Specific Literature

In the review of literature, the following research databases were used: the Cumulative Index for Nursing and Allied Health (CINAHL), Agency for Healthcare Research and Quality, EBSCOhost, National Institutes of Health, Centers for Disease Control, and Joint Commission. The following key terms were searched: *emergency department, frequent utilization, health literacy, interventions, self-management, and case management*. The research literature was limited to publication dates from 2008 to present date. The searches encompassed full text and systematic peer reviews of 45 to 60 articles. The literature review enlightens understanding of the relationships between health literacy and frequent utilization of emergency departments. The themes of the research articles were centered on effectiveness of case management interventions with frequent utilizers of emergency departments, underlying factors associated with frequent

utilizations, healthcare cost reduction, and low health literacy with understanding of chronic disease and non-emergent conditions.

### **Effective Interventions**

The effectiveness of interventions to reduce emergency department utilization and inpatient admissions were reviewed for specific interventions. Several studies have established an association with increased emergency department utilization, inpatient admissions, chronic health conditions, behavioral health issues, problems with substance abuse, homelessness, and needs for social resources. “Because of these needs and a lack of coordinated care, these individuals have very high health care cost from avoidable utilization of inpatient care and emergency room services” (Hasselmann, 2013, p. 4).

There were three areas of innovative strategies to manage the high utilization population. Hasselman (2013) identified these three areas to be the use of data collection and analytics, utilization of care teams and care management services, and integration of a high utilizer program to manage this population.

The systematic review by Morgan, Chang, Alqatari, and Pines (2013) identified non-emergent interventions from a review of 39 studies. The interventions were classified as interventions outside of the emergency room to reduce utilization. Identified interventions were pre-hospital diversion, managed care, patient education, patient financial incentives, and established non-emergency department healthcare utilization. Of the studies reviewed, 27 of 39 showed a reduction of emergency room utilization when non-emergent interventions were implemented. The majority of the non-emergent interventions were managed care interventions (10 of 12) and patient financial incentives

(9 of 10). The area of patient education was the greatest in reduced emergency department utilization (Morgan et al., 2013).

Moe et al. (2016) performed a systematic review of frequent emergency department users with high utilization of medical services. The review consisted of 31 interventional studies on interventions' effectiveness to decrease emergency department visits. Identified interventions were case management, diversion strategies, care plans, use of case notes from prior visits for physician review, and home visits by social workers. "Twenty-two studies reported a decrease in ED visits post-interventions, although eight did not substantiate this decrease with statistical testing. Four studies reported a statistically significant decrease in ED visits between intervention and control groups" (Moe et al., 2016, p. 47). The discussion of review results implicated a reduction in healthcare costs, decreased utilization rates, improved housing stability, and reduction of mortality.

Van den Heede and Van de Voorde (2016) conducted a review of interventions to reduce emergency department utilization. Twenty-three reviews were selected for relevant screening criteria. Similar interventions were care coordination by case management, self-management and patient education related to chronic disease management and overall healthcare services usage, increasing access to primary care services, diversion strategies by telephone triage and use of non-emergent healthcare services, and cost sharing in the form of patients' out-of-pocket payment for services. In the review of studies, Van den Heede and Van de Voorde (2016) identified a reduction of emergency department visits in two-thirds of the studies. Case management was

identified as a strategy to improve care coordination and reduce emergency department utilization.

The recurring theme of many research studies involves case management. Althaus et al. (2011) conducted a review of 11 studies related to effectiveness of interventions targeting frequent utilizers of emergency departments. The systematic review acknowledged most interventions were case management (n=7). Other interventions were possessed partial components of case management (n=3). Case management interventions were identified as one of the most effective interventions to reduce emergency department visits. Identified interventions were coordination of healthcare services, connecting patients to support community resources, involvement of multidisciplinary teams (social workers, physicians, therapists), establishment of care plans, and on-going monitoring of patients' healthcare needs. Case management proved a reduction of healthcare costs. The healthcare savings exceeded the cost of the case management staff. The estimated savings was "\$10 million per year for the 157 patients enrolled for 2 years" (Althaus et al., 2011, p. 47).

### **Case Manager Interventions**

Case management interventions have been thoroughly reviewed for effectiveness related to emergency department utilization. A recurring theme was patients needing assistance with care coordination. A major role responsibility of case management involves care coordination and assisting patients with navigation of the healthcare system. Part of care coordination was the identification of barriers and access to healthcare services. Care management services are beneficial to both patient and healthcare system.

Goodell, Bodenheimer, and Berry-Millet (2009) utilized a synthesis project to examine effective case management interventions being effective in the reduction of duplicated services, provide coordination of care, reduction of costly medical services, improvement of patients' health status, and increasing patients' willingness to participate in self-care activities. Case management has implications to improve the quality of healthcare services and reduction of costs. Patients with poor quality outcomes have experienced increased emergency department visits and inpatient admissions. Goodell et al. (2009) have recommended successful components to successful case management services. The first component was in-person encounters and home visits. These face-to-face encounters have proved to be effective than solely-based telephonic encounters. The next component was specially trained case managers with low patient loads and working in a multidisciplinary team. Thirdly, embedded case managers within primary care physician offices. Another component involved the collaboration of case management and informal caregivers to assist patients with complex healthcare needs. Lastly, case managers providing coaching to patients and caregivers on disease specific warning signs.

Edgren et al. (2016) evaluated the effectiveness of telephonic case management interventions to reduce healthcare cost by frequent emergency department utilizers. The setting of the study was in Sweden and limited to the emergency departments in three counties over the course of two years. The potential trial population consisted of 12,181 patients. Of those randomized patients, 4,569 were the intervention group and 3,967 were the control group. A traditional randomized design utilized case management interventions or no interventions. The results from the study found a significant decrease



in hospitalizations in the intervention group 0.88 (95% Confidence Interval 0.81-0.96); and a significant decrease in outpatient visits 0.79 (95% Confidence Interval 0.75-0.83). Results from the study proved effective under certain limitations of patient populations, appropriate staff training, and a centralized intervention delivery on large scale (Edgren et al., 2016).

Reinius et al. (2012) examined telephone-based case management to reflect a reduction of outpatient and emergency department visits, number of inpatient days, and healthcare costs for inpatient admissions. The results of telephone-based case management proved a reduction in outpatient visits of 0.80 (95% Confidence Interval 0.69-0.86). Emergency department visits were reduced with results of 0.77 (95% Confidence Interval 0.75-0.83). A reduction of inpatient admissions days and total hospitalization healthcare costs were a result of case management interventions. The patients in this study reported improved health status as a result of case management interventions.

Case management interventions and regular patient interactions, either by telephone or face-to-face, are the major factors to the reduction of healthcare costs and utilization. Case management services has proved to be effective in short- and long-term timeframes. However, case management interventions do have limitations on effectiveness. The observational study by Grover, Crawford, and Close (2016) aimed to assess the efficacy of long-term case management services for patients with frequent emergency department utilization. The study identified 199 patients as frequent emergency department utilizers with an average of 16 visits per patient for the year before enrolling in the study. The number of visits per year after enrollment as compared

to the year prior to enrollment was found to be statistically significant with a  $p$  value of  $<0.001$  (Grover et al., 2016). There are limitations related to patients with misuse of prescription medications (opiates, benzodiazepines, and muscle relaxants) and patients with chronic pain conditions. These two groups of patients continued to demonstrate frequent emergency visits with case management involvement (Grover et al., 2016).

### **Health Literacy**

Low health literacy has been associated with inadequate educational levels and poor healthcare outcomes. Griffey et al. (2014) identified patients with lower health literacy having an increase emergency department utilization when compared to patients with better health literacy ( $p = 0.03$ ). In the study by Griffey et al. (2014), 431 patients participated. Of these 431 participants, 13.2% had inadequate health literacy, 10.4% had marginal health literacy, and 76.3% had adequate health literacy. The abbreviated Short Test of Functional Health Literacy (S-TOFHLA) screening tool was utilized to identify health literacy. Research findings discovered that patients with higher levels of education also have low health literacy. Patients with low health literacy had an increase incidence of return emergency department visits within 14 days of last visit compared to patients with higher health literacy. Lower health literacy and returns to emergency departments were associated with inadequate understanding of discharge instructions, directions for medication administration, or plans for follow up care.

Balakrishnan et al. (2017) identified lower health literacy was associated with less preventive care, higher incidence of chronic health issues, and inadequate self-management skills related to health conditions. Patients with limited health literacy have increased inpatient admissions and emergency department visits than patients with better

reading skills. The observational cross-sectional study by Balakrishnan et al. (2017) examined potentially preventable emergency department visits using the Rapid Estimate of Adult Literacy in Medicine (REALM) was utilized to measure health literacy. Of the 1,201 study participants, 394 (33%) had limited health literacy. The patients with limited health literacy “2.3 times (95% Confidence Interval = 1.75-3.10) the number of potentially preventable ED visits resulting in hospital admissions compared to individuals with adequate health literacy; and 1.9 times (95% Confidence Interval = 1.55-2.40) the number of total preventable ED visits” (Balakrishnan et al., 2017).

### **Literature Related to Theoretical Framework**

The theoretical framework is the basis for nursing research. The framework provides guidance in formulating the model, measures, and methods to compare research findings and final outcomes. Orem’s self-care model serves as a basis for planning and implementing interventions related to self-care teaching. The self-care theory has been applied various areas of research. In the study by Bahri, Saljooghi, Delshad Noghabi, and Moshki (2018), postmenopausal women and self-care knowledge about menopause was the main focus with implementation of teach back method. Iranian women were identified as group lacking in knowledge about self-care during menopause. “Research suggests that 40.3-44.5% of Iranian women have poor awareness and only 0.8% present proper postmenopausal self-care practices. Postmenopausal women often suffer from a lack of information in this period” (Bahri et al., 2018).

Participants were divided into two groups: control group and intervention group. The intervention group participants’ self-care knowledge was assessed prior self-care training interventions, and reassessed one month after training. The training program

used the teach-back method on self-care principles related to menopause. The control group did not receive self-care training.

The research study results revealed improved knowledge of self-care activities with postmenopausal women. The intervention group, after self-care training program based on teach-back method, “showed a significant increase in the score of knowledge... compared to that in the controls one month after the intervention ( $p = 0.001$ )” (Bahri et al., 2018). The use of the teach-back method was viewed as a strategy to close knowledge gaps in understanding self-care principles in postmenopausal women.

### **Strengths and Limitations of Literature**

There are several studies related to self-care and health literacy. Few studies examine frequent emergency department utilization and specific factors of self-management and health literacy. The teach-back method was not studied closely with regards to self-management. There was a lack in research related to self-management abilities, health literacy, and the perceptions of case managers on the effectiveness of interventions to reduce emergency department visits. Improved patient self-management abilities can be directly related the health literacy. Case managers’ perceptions can be a determinant of effective interventions on reduced emergency department utilization.

### **Summary**

Orem’s self-care deficit theory can be implemented with interventions to improve patients’ self-management abilities, health literacy, and reduce emergency department utilization. Case management was an essential component with improving patient outcomes. There was a lack of patient education materials related to appropriate utilization of the emergency department. More patient education was needed related to

self-management and health literacy in the context emergency department visits and choosing non-emergent care options.

## **CHAPTER III**

### **Methodology**

Frequent utilizers of the emergency departments have low health literacy and poor self-management abilities. Case managers are being used as resources to assist patient with navigating the healthcare system. Health literacy and self-management abilities are not necessarily linked to an individual's literacy level.

The aim of this research study was to examine case managers' perceptions related to factors affecting over-utilization of emergency departments, the effectiveness or ineffectiveness of self-management skills of patients with low health literacy, and effective interventions to reduce over-utilization of emergency departments. The goal of the study was to learn if case managers' perceive their interventions effective in reduction of emergency department utilization, improved patient health literacy, and supportive of the patients' self-management abilities.

### **Design**

The study design was a descriptive quantitative study. Approval from the Institutional Review Boards of the healthcare facility and the university was obtained prior to the commencement of the study. The study participants were recruited from the designated facilities. Study participants were provided with a written survey questionnaire and copy of informed consent. The survey was disseminated via case management unit managers' in the ambulatory and inpatient departments. The survey tool was used to obtain the case managers' perceptions of factors affecting over-utilization of emergency departments, effective or ineffective self-management skills, and effective interventions to reduce over-utilization of emergency departments. Demographic

information was not obtained. The survey tool consisted of questions from the Preventive Medicine Attitudes and Activities Questionnaire (PMAAQ) (see Appendix A).

### **Setting**

This research study was conducted using registered nurses working for a hospital and primary care-based case management setting. The ambulatory and hospital-based case management departments are comprised of registered nurse–case managers. The primary role of the ambulatory case management consists of case management of patients linked to specific primary care practices. Hospital case managers provide services for patients admitted for inpatient care. Geographical locations of the case management department are diverse. The ambulatory case management and inpatient case management departments cover metropolitan to rural settings within North and South Carolina.

### **Sample**

Convenience sampling was used. The sampling frame was 31 registered nurse–case managers, currently working in the ambulatory and inpatient case management departments. There are 10 inpatient facilities with a total of 125 case managers. The ambulatory case management department has a total of 15 case managers.

### **Design for Data Collection and Procedure**

The research design for data collection was a modified version of the Preventive Medicine Attitudes and Activities Questionnaire (PMAAQ). Permission to use the PMAAQ was obtained from the author to modify (see Appendix B). The PMAAQ tool was administered via written survey questionnaire. The unit manager for each case management department disseminate the written surveys to the ambulatory and inpatient

case managers. The research study and questionnaire survey kept the study participants anonymous. Participants were not linked any identifiable information. A consent to participate was provided (see Appendix C). The participants were not exposed to any risks. The survey was administered, and a two-week period was allowed for responses. A total of 125 participants received the research survey. The survey responses were collected by mail once the participants had completed the questionnaire. The results from the survey were analyzed after the two-week response period had ended.

The research study survey consisted of eight questions to assess the participants' perceptions on a series health promotion behaviors. The survey questions utilized a Likert scale to measure the participants' responses. The scaled responses were utilized in analysis of data collected. The survey questionnaire responses were reviewed and tabulated based on the participant responses.

### **Measurement Methods and Instrument**

The survey instrument for the research study was the Preventive Medicine Attitudes and Activities Questionnaire (PMAAQ). The PMAAQ was developed by Dr. Yeazel and a panel of preventive medicine physicians with the University of Minnesota. The survey questionnaire focused on family medicine residents' perceived effectiveness in patient health promotion. The questions were based on the social cognitive theory. The PMAAQ was developed to "assess clinicians' self-reported prevention behaviors (e.g., risk assessment, behavior change promotion, lifestyle counseling); perceptions about the effectiveness and importance of these activities; comfort with addressing sensitive topics with patients such as drug use or sexual behavior; and perceived barriers to the delivery of clinical preventive services (Yeazel, Bremer, Center, 2006)".



The PMAAQ tool has been tested for validity and reliability. The results from the eight major scales in the tool were internally consistent with high  $\alpha$  coefficients (0.74 to 0.98). The divergent validity had low to moderate intercorrelations, Pearson's  $r = -0.23$  to 0.54. In the chart review data, significant correlations were present between several scales in the PMAAQ and other created scales. "Reliability analysis using Cronbach's  $\alpha$  was used to measure the internal consistency of the scales. Items total score correlations were calculated to indicate how strongly an item affected the total scale score" (Yeazel et al., 2006, p. 88). Experts in preventive medicine and community health established the content validity. A sufficiently high Cronbach's  $\alpha$ , a measure of internal consistency reliability, was seen in the scales and subscales. The PMAAQ and scales/subscales have validity and reliability related to assessing preventive care behaviors, attitudes, and perceived barriers in the delivery preventive services (Yeazel et al., 2006).

Permission was received from the author to administer and modify the PMAAQ in the ambulatory and inpatient case management setting for registered nurses. Permission correspondence from the author was included (see Appendix B). The demographic portion of the questionnaire was omitted to protect the anonymity of the participants. The questionnaire was divided in to categories related to overall prevention behaviors, lifestyle behaviors, smoking cessation, hypertension management, behavior change, importance of prevention, comfort with sensitive topics, health literacy, case management interventions, and barriers to care. The questions inquired case managers' perceptions of effective interventions related to health literacy and self-management abilities of patients.

### **Protection of Human Rights**

Permission was obtained from the research facility's Institute Review Board (IRB) and the university's Institute Review Board (IRB). The approval from the research facility and the university were obtained prior to the onset of the study. This study posed minimal risk to participants involved in the study. The identity of the participants remained anonymous and participation in the study was voluntary. No rewards, benefits, or punishments were present to invoke participation. Participants received informed consent which details the survey as voluntary, may be stopped at any time, and anonymous (see Appendix C). Participants' were not linked to survey results. Computerized data was password protected, and written surveys were secured in a locked cabinet.

### **Data Analysis**

The survey responses were collected from returned mailed surveys. The results were analyzed by using Microsoft Excel. The responses were tabulated for each category. The categories contain specific questions related to overall prevention behaviors, lifestyle behaviors, smoking cessation, hypertension management, behavior change, importance of prevention, comfort with sensitive topics, health literacy, case management interventions, and barriers to care. A four-point, five-point, and seven-point Likert scale was used to rate responses. Descriptive statistics were reported using a Likert scale for responses.

### **Summary**

The purpose of the research study was to examine the perceptions of case managers interventions related to patients' health literacy and self-management abilities. A descriptive quantitative study design utilizing the PMAAQ survey tool reviewed health

promotion activities by case managers and their perceptions of effective interventions.

The case manager was responsible for assessing patients' health literacy and self-management abilities; and understanding a potential correlation on emergency department utilization.

## **CHAPTER IV**

### **Results**

The results from the survey produced statistical data on the frequencies of case manager perceptions and interventions for analysis. The responses on the Preventive Medicine Attitudes and Activities Questionnaire (PMAAQ) represented the feedback from case managers. The survey was utilized to explore case managers' perceptions effective interventions related to over-utilization of emergency departments and inpatient admissions. The survey explored perceptions related to general health maintenance, weight management, smoking cessation, hypertension management, attitudes on perceived effectiveness in patients' behavior change and health literacy, attitudes on perceived importance on patients' health literacy and education, perception of effective interventions, and perceived barriers to health literacy and promotion.

The objective of the study was to examine how case managers perceive the effectiveness of their interventions with over-utilization of emergency departments and inpatient admissions. The study aimed to examine case managers' perceptions related to factors affecting over-utilization of emergency departments and inpatient admissions. The PMAAQ was utilized in this descriptive quantitative study to examine case managers' interventions. The study aimed to learn how case managers' perceive the effectiveness or ineffectiveness of interventions in reduction of emergency department utilization, improve patients' health literacy, and patients' self-management skills.

### **Sample Characteristics**

The sample of participants consisted of registered nurse case managers working in ambulatory and inpatient case management departments. The ambulatory and inpatient

case management departments cover metropolitan to rural settings within North and South Carolina. A total of 125 participants received the PMAAQ survey. Demographic information was not obtained to maintain anonymity of the participants. The concluding sample for this study consisted of 31 case managers with non-response rate of 75%. The completed survey was completely answered without any non-responses.

## **Major Findings**

### **General Health Maintenance**

This portion of the survey addressed general health maintenance activities, and the frequency case managers discussed each topic with patients. These questions utilized a 7-point Likert scale with responses from “never” to “always”. The responses varied from topic to topic with a predominance to “never”, “rarely”, or “sometimes” discuss with patients. As depicted in Table 1, few case managers responded with “often”, “usually”, or “always” discuss these health maintenance activities with patients. A majority of case managers “never” discuss immunization history (64.51%), home smoke detectors (77.41%), and oral/dental care (61.29%). The areas of diet (32.25%), exercise (48.38%), depression (48.38%), fruit/vegetable consumption (48.38%), and decreasing dietary fat (48.38%) reflected numerous responses of “never” discussed. Domestic violence (48.38%) and tobacco use (29.03%) had the higher responses to “rarely”. The areas of alcohol (32.25%) and illicit drug (35.48%) had more responses to “sometimes” than other response options.

Table 1

*Percentage of Case Managers' Responses for "How Often Did You Ask the Following?"*

	Never	Rarely	Sometimes	Time	Often	Usually	Always
Alcohol use	16.12%	19.35%	<b>32.25%</b>	12.9%	6.45%	6.45%	6.45%
Diet	<b>32.25%</b>	12.9%	29.03%	6.45%	3.22%	3.22%	12.9
Exercise	<b>48.38%</b>	9.67%	29.03%	3.22%	0%	3.22%	6.45%
Immunization history	<b>64.51%</b>	9.67%	12.9%	3.22%	0%	0%	9.67%
Oral/dental health care	<b>61.29%</b>	19.35%	6.45%	6.45%	0%	6.45%	0%
Home smoke detectors	<b>77.41%</b>	16.12%	3.22%	3.22%	0%	0%	0%
Symptoms of depression	<b>48.38%</b>	16.12%	12.9%	9.67%	3.22%	3.22%	6.45%
Tobacco use	19.35%	29.03%	22.58%	9.67%	6.45%	3.22%	9.67%
Illicit drug use	16.12%	22.58%	<b>35.48%</b>	6.45%	6.45%	6.45%	6.45%
Domestic violence	16.12%	<b>48.38%</b>	9.67%	6.45%	3.22%	0%	16.12%
Increasing of fruit/veg. consumption	<b>48.38%</b>	29.03%	12.9%	3.22%	0%	0%	6.45%
Decrease fat consumption	<b>48.38%</b>	29.03%	12.9%	3.22%	0%	0%	6.45%

*Note.* Responses > 30% bolded.

## Weight Management

The second portion of the questionnaire was related to weight management. The response of "never" was the highest in all of these areas of weight management, as depicted in Table 2. The questions in this portion were focused on areas of exercise (48.38%), specific exercise goals (67.74%), specific exercises (64.51%), weight loss goal

setting (58.06%), decreasing caloric intake (64.51%), decreasing dietary fat consumption (64.51%), increasing fruits/vegetables consumption (64.51%), and A1c testing (45.16%).

Table 2

*Percentage of Case Managers' Responses for "How Often Did You Advise the Following?"*

	Never	Rarely	Sometimes	Half of the Time	Often	Usually	Always
Exercise regularly	<b>48.38%</b>	29.03%	12.9%	0%	0%	3.22	6.45%
Set specific exercise goals	<b>67.74%</b>	16.12%	6.45%	0%	3.22%	0%	6.45%
Suggest specific exercises	<b>64.51%</b>	22.58%	3.22%	0%	0%	3.22%	6.45%
Set weight loss goals	<b>58.06%</b>	25.8%	0%	6.45%	3.22%	0%	6.45%
Decrease caloric intake	<b>64.51%</b>	22.58%	3.22%	0%	0%	3.22%	6.45%
Decrease dietary fat	<b>64.51%</b>	19.35%	6.45%	0%	3.22%	0%	6.45%
Increase fruits and vegetables	<b>64.51%</b>	19.35%	6.45%	0%	0%	3.22%	6.45%
Suggest A1C test	<b>45.16%</b>	22.58%	16.12%	3.22%	3.22%	0%	9.67%

*Note.* Responses > 30% bolded.

## Smoking Cessation

The smoking cessation portion of the questionnaire had varied responses. Participant responses ranged from “never” to “sometimes” as the most chosen options. The smoking cessation activities were related to advisement for the patient to quit smoking had almost equal distribution of responses between “never” (12.9%), “rarely” (22.58%), “sometimes” (16.12%), “half the time” (12.9%), “often” (12.9%), “usually” (9.67%), and “always” (12.9%). “Never” was the highest response to follow up with the patient after smoking quit date (87.09%). The suggestion for prescription nicotine patches/gum had most responses as “rarely” (32.25%) and “sometimes” (25.85%). The setting of a quit date, referral to smoking cessation program, preparing the patient for withdrawal symptoms, and providing self-help materials had most responses as “never” and “rarely”, as depicted in Table 3.



Table 3

*Percentage of Case Managers' Responses for "How Often Did You Do the Following?"*

	Never	Rarely	Sometimes	Half the Time	Often	Usually	Always
Advise patient to quit smoking	12.9%	<b>22.58%</b>	16.12%	12.9%	12.9%	9.67%	12.9%
Set specific quit date	<b>35.48%</b>	<b>32.25%</b>	3.22%	3.22%	12.9%	9.67%	3.22%
Follow up after quit date	<b>87.09%</b>	6.45%	0%	0%	6.45%	0%	0%
Smoking cessation referral	<b>38.7%</b>	19.35%	9.67%	6.45%	9.67%	9.67%	6.45%
Prepare patient for withdrawal symptoms	<b>54.83%</b>	16.12%	6.45%	3.22%	6.45%	3.22%	9.67%
Suggest prescription nicotine patch	12.9%	<b>32.25%</b>	<b>25.8%</b>	6.45%	3.22%	12.9%	6.45%
Provide self-help materials	<b>25.8%</b>	<b>29.03%</b>	9.67%	6.45%	3.22%	16.12%	9.67%

*Note.* Responses > 20% bolded.

## **Hypertension Management**

The study participants' responses to hypertension management had a majority of "never" and "rarely" for most of the questions in this survey portion. These questions, as depicted in Table 4, were reviewing hypertension risks, weight loss, salt reduction, exercise, alcohol, smoking cessation, decrease caffeine intake, reduce stress, blood pressure monitoring, and sleep habits. The importance of taking medications had the most responses of "sometimes" (32.25%). The responses to review self-management skills had highest rating of "never" (25.8%) and "sometimes" (32.25%).

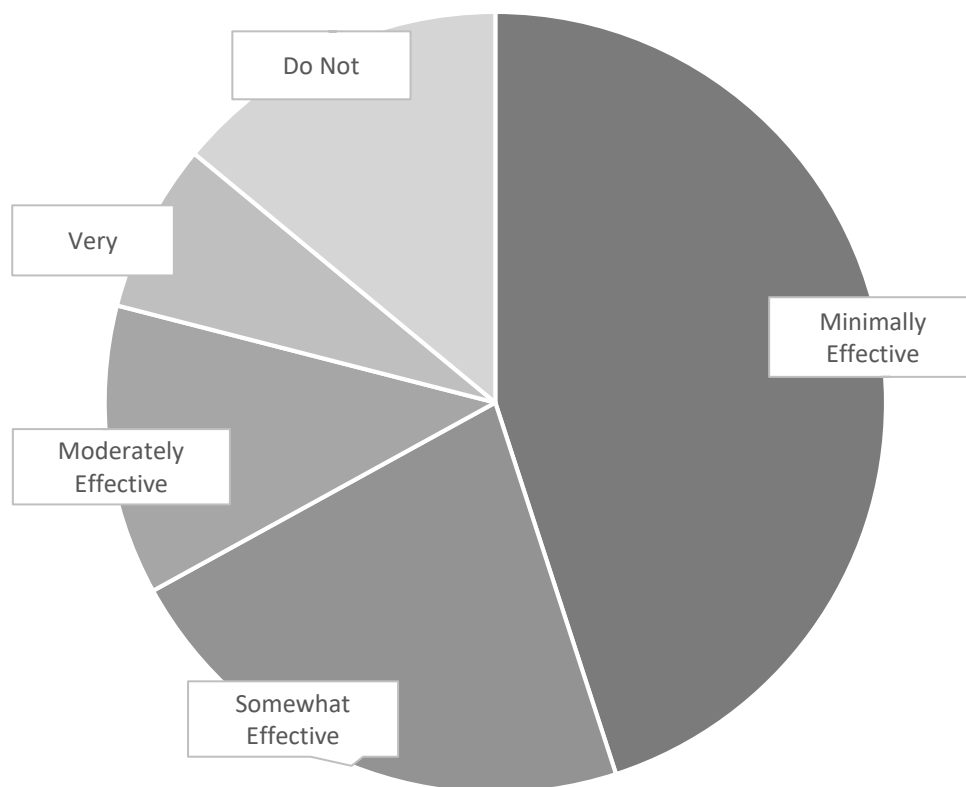
Table 4

*Percentage of Case Managers' Responses for "How Often Did You Do the Following?"*

	Never	Rarely	Sometimes	Half the Time	Often	Usually	Always
Review hypertension risks	<b>41.93%</b>	22.58%	9.67%	6.45%	6.45%	6.45%	6.45%
Advise weight loss	<b>38.7%</b>	<b>35.48%</b>	6.45%	3.22%	3.22%	6.45%	6.45%
Advise salt reduction	<b>32.25%</b>	19.35%	16.12%	12.9%	9.67%	3.22%	6.45%
Importance of taking medications	9.67%	6.45%	3.22%	3.22%	16.12%	12.9%	19.35%
Regular exercise	<b>32.25%</b>	<b>38.7%</b>	3.22%	9.67%	0%	9.67%	6.45%
Limit alcohol	<b>38.7%</b>	<b>32.25%</b>	0%	6.45%	9.67%	3.22%	9.67%
Smoking cessation	25.8%	29.03%	6.45%	6.45%	6.45%	3.22%	22.58%
Decrease caffeine	<b>38.7%</b>	<b>35.48%</b>	6.45%	9.67%	0%	3.22%	6.45%
Reduce stress	<b>41.93%</b>	<b>32.25%</b>	0%	9.67%	3.22%	6.45%	6.45%
Blood pressure monitoring	19.35%	25.8%	16.12%	0%	12.9%	12.9%	12.9%
Advise better sleep habits	<b>48.38%</b>	25.8%	9.67%	3.22%	3.22%	3.22%	6.45%
Review patient's self-management skills	25.8%	12.9%	<b>32.25%</b>	3.22%	0%	6.45%	19.35%

*Note.* Responses > 30% bolded.

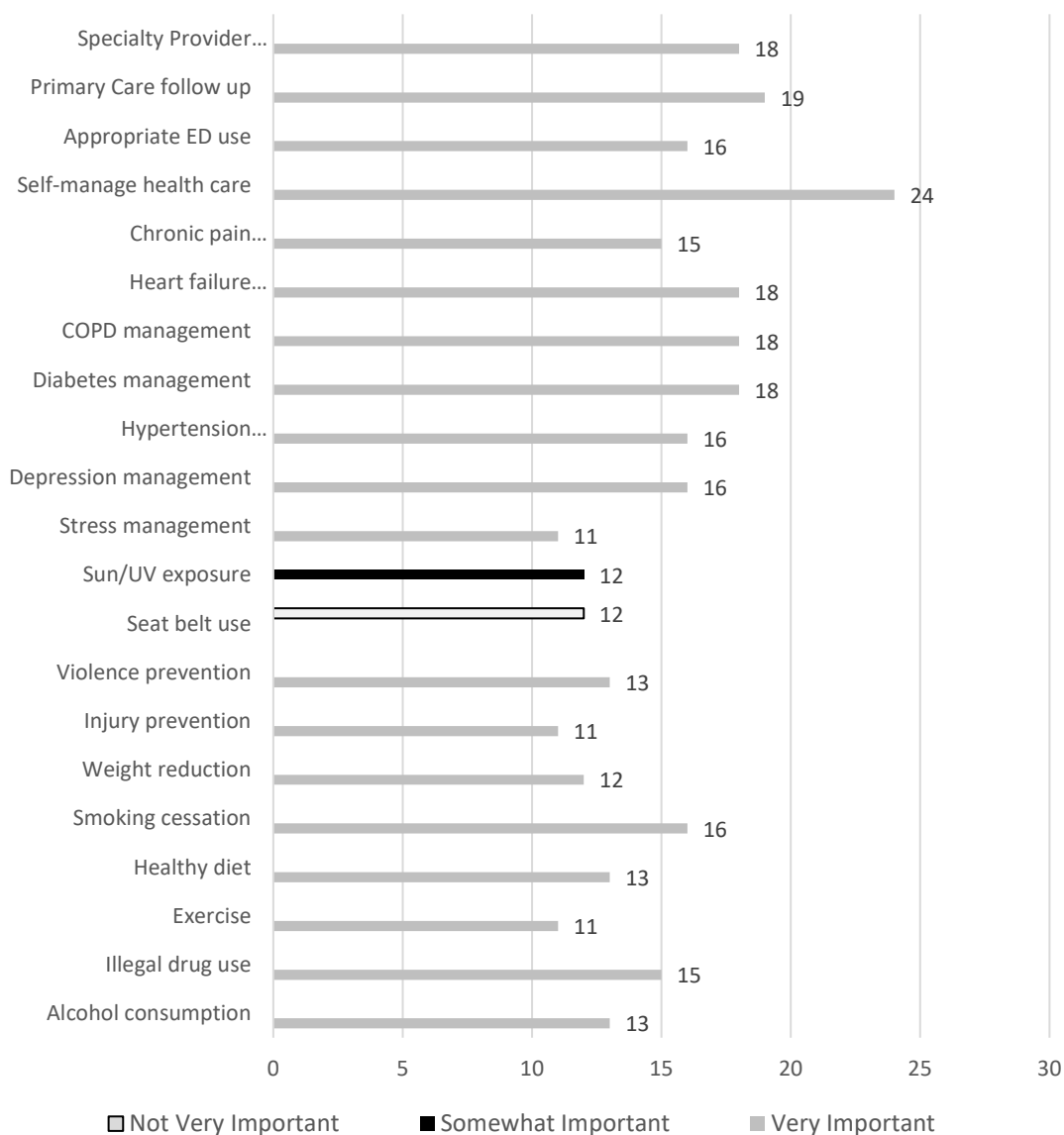
**Perceived effectiveness with health promotion and health literacy.** The study participants were given a 5-point Likert scale. The Likert rated responses in this survey portion in regards to effectiveness to health promotion activities and patients' health literacy. A majority of the responses were "minimally effective", as depicted in Figure 2, to alcohol consumption, illegal drug use, exercise, healthy diet, smoking cessation, weight reduction, injury prevention, violence prevention, stress management, depression management, hypertension management, and appropriate use of emergency department. Seat belt use and sun exposure were mainly responded with "minimally effective" (48.38% and 45.16%, respectively) and "do not counsel" (41.93% and 38.7%, respectively). The majority of the responses to chronic pain management were "minimally effective" (41.93%) and "somewhat effective" (41.93%). Most responses to maintain follow up with specialty provider were "minimally effective" (29.03%) and "somewhat effective" (29.03%). COPD management had "minimally effective" (25.8%), "somewhat effective" (29.03%), and "moderately effective" (25.8%) as the highest responses to this question. Diabetes management (29.03% and 29.03%) and maintain follow up with primary care provider (32.25% and 35.48%) reflect most responses as "somewhat effective" and "moderately effective". Heart failure management had a majority of responses as "somewhat effective" (45.16%). The participants mainly responded "minimally effective" (35.48%) and "moderately effective" (32.25%) to patient's ability to self-manage health care.



*Figure 2.* Percentage of Responses to “How Effective Do You Feel You Are Changing Patients’ Behavior and Improving Health Literacy?”

*Note.* The majority of the participants’ responses were focused on “minimally effective” and “somewhat effective”. “Minimally Effective” had the highest percentage (45%) of responses to questions related to alcohol use, illegal drug use, exercise, healthy diet, smoking cessation, weight reduction, injury prevention, violence prevention, seat belt use, sun exposure, stress management, depression management, hypertension management, appropriate use of emergency department, and patient’s ability to self-manage health care. “Somewhat Effective” (22%) were responses to questions about diabetes management, COPD management, heart failure management, and chronic pain management.

**Perceived importance with health promotion and health literacy.** Participants were given a 4-point Likert scale. The Likert rated responses in this survey portion were in regards to perceived importance of health promotion activities and assessing patients' health literacy. A majority of the responses were rated "very important", as depicted in Figure 3, alcohol consumption, illegal drug use, healthy diet, smoking cessation, violence prevention, depression management, hypertension management, diabetes management, COPD management, heart failure management, chronic pain management, patient's ability to self-manage health care, appropriate use of emergency department, maintain follow up with primary care provider, and maintain follow up with specialty provider. Exercise (29.03% and 35.48%) and seat belt use (38.7% and 32.25%) were mainly rated at opposite ends of the scale as "not very important" and "very important". Weight reduction (25.8% and 38.7%), injury prevention (25.8% and 35.48%), sun exposure (38.7% and 25.8%), and stress management (32.25% and 35.48%) had most responses as "somewhat important" and "very important".



*Figure 3.* Number of Responses to Perceived Importance with Health Promotion and Health Literacy

*Note.* The responses reflect the largest number of responses by participants to each question. The majority of the responses to the questions were “very important”. “Not Very Important” had the highest responses for seat belt use; and “somewhat important” had the highest responses for sun exposure.

**Perception toward patient behavior change and effective interventions.** The study participants were provided with a 5-point scale to rate perception of effectiveness with patient behavior change and the effectiveness of the case managers' interventions, as depicted in Table 5. The response of "somewhat agree" was mainly chosen for questions regarding case managers' comfort discussing illegal drug use with patient (38.7%), effectiveness of smoking cessation counseling (41.93%), perception of health education having little effect on adherence to healthy lifestyles 48.38%), and case managers' perception of interventions having little effect assisting patients (45.16%). The participants' responses to case management interventions as effective were rated "somewhat disagree" (32.25%) and "somewhat agree" (32.25%). The question regarding patients without symptoms "rarely" change their behavior based on the advice of the case manager were responded with "somewhat agree" (41.93%) and "strongly agree" (45.16%). Participants responded mainly "somewhat disagree" (35.48%) to the question related to patients changing their lifestyles based on case managers advice.



Table 5

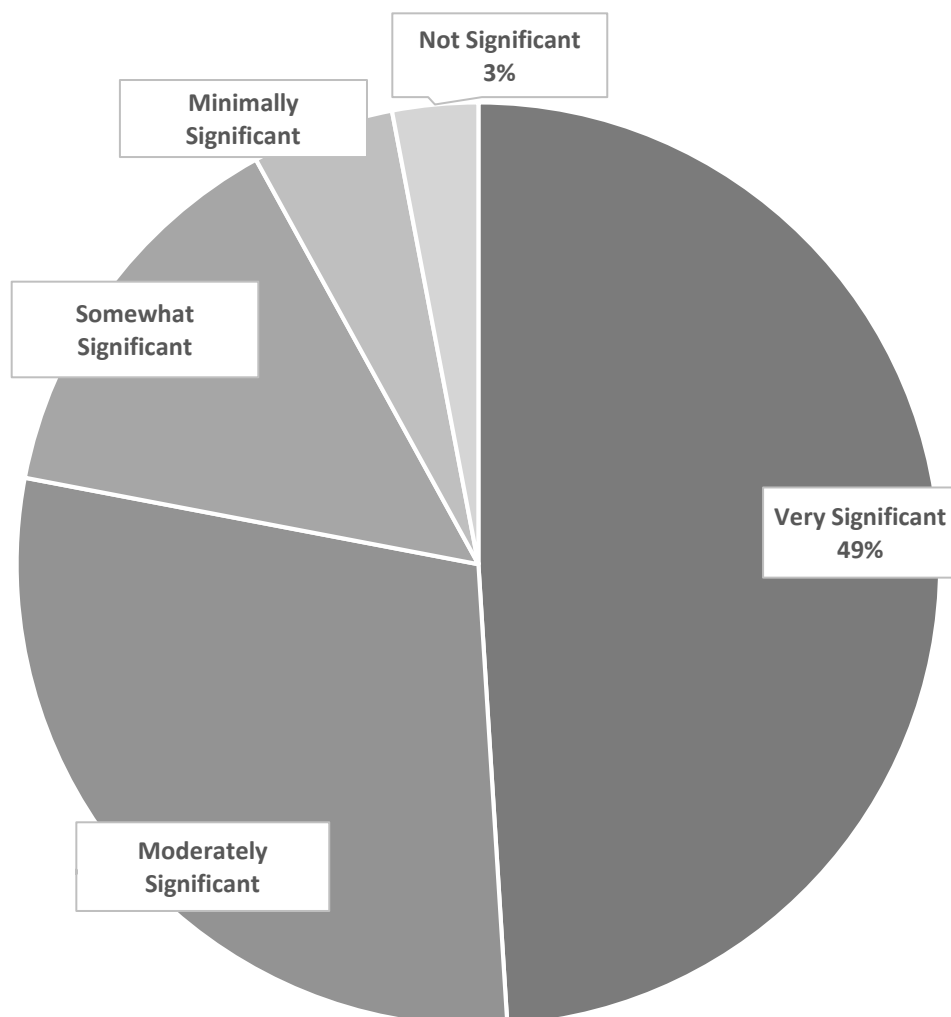
*Percentage of Case Managers' Responses for "To What Extent Do You Agree with the Following?"*

	Strongly Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Strongly Agree
Discussing illegal drug use with patients	3.22%	12.9%	12.9%	38.7%	32.25%
Smoking cessation counseling is effective use of my time	9.67%	22.58%	22.58%	41.93%	3.22%
Patients' health education does little to promote adherence to healthy lifestyle	12.9%	25.8%	6.45%	48.38%	6.45%
Patients without symptoms will rarely change their behaviors	0%	6.45%	6.45%	41.93%	45.16%
Patients try change their lifestyles if advised to do so	19.35%	35.48%	19.35%	19.35%	6.45%
My case management interventions are effective when assisting patients	9.67%	32.25%	19.35%	32.25%	6.45%
My case management interventions have little effect when assisting patients	19.35%	16.12%	9.67%	45.16%	9.67%

### **Perception of barriers to health literacy, health promotion, and disease**

**prevention.** The study participants mainly responded "very significant" to barriers in regards to lack of time, lack of health educators, tracking preventative care, navigating health care system, follow up with primary care and specialty providers, appropriate utilization of health care services, transportation, financial resources, family support,

insufficient insurance, homelessness, behavioral health services, substance abuse treatment, case managers' personal lack of interest in providing preventative services/education, lack of patient interest in prevention, case managers' uncertainty about preventative services, patients did not want case management services, and patient's ability to self-manage health care, as depicted in Figure 4. Participants responses to food insecurity (45.16%), lack of pain management services (54.83%), cultural differences (41.93%) were mostly moderately significant. "Moderately significant" and "somewhat significant" were responses to lack of follow up with rehabilitative services (32.25% and 32.25%), care management referral for a different reason (25.8% and 25.8%). Responses of "very significant" and "moderately significant" were rated for lack of proper patient education materials (35.48% and 32.25%) and communication difficulties with patient (35.48% and 35.48%). The majority of participants responded with "somewhat significant" to patient requests case management for a different reason (35.48%).



*Figure 4.* Perception of Barriers to Health Literacy, Health Promotion, and Disease Prevention

*Note.* The majority of the responses to potential barriers to adequate health literacy, effective health promotion, and disease prevention were rated as “very significant” (49%); followed by “moderately significant” (29%).

### **Summary**

The study participants' responses reflected a lack of impact on changing patients' lifestyle behaviors and improving patients' self-management skills. Patients' low health literacy and lack of understanding the importance of health promotion were areas with high responses as barriers. The majority of the participants' rated the patients' lack of appropriate understanding when utilizing health services (emergency department, urgent care, primary care provider, etc.) as a very significant barrier.

## **CHAPTER V**

### **Discussion**

Case managers have an important role in patients' lives and assisting with their needs, whether it was prior to discharge from the hospital or in the ambulatory setting in the community. The rising costs of healthcare in the United States have placed a focus on the reduction of unnecessary utilization of health care services. Emergency department visits and inpatient admissions are areas with the greatest costs for services. Various factors can be responsible for patients over utilizing the emergency departments and having increased inpatient admissions. The role of case managers serves as an important resource to patients in the prevention of hospital readmissions and unnecessary emergency department utilization. This research study examined case managers' perceptions of effective interventions in the reduction of emergency department visits and inpatient admissions.

### **Implications of Findings**

The majority of the participants in the study reported they did not or infrequently provided patient education in various areas of health promotion, prevention, and health literacy. Most of the participant responses indicated minimal effect when improving patients' behavior change for healthy lifestyle, chronic disease management, improving health literacy, and impacting patients' ability to self-manage health care needs. The majority of the case managers felt their interventions related to patients' appropriate use of the emergency department had no impact in reduced utilization. The study participants' expressed the importance of healthy lifestyles and prevention; however felt various barriers were responsible for effective health promotion and adequate health

literacy. Time and patients' lack of understanding appropriate utilization of health care services were the greatest barrier. Case managers' identified other barriers as lacking community/social resources, and the patients' ability to self-manage own health care needs. The findings from this study implicate an increased need to promote patients' ability to self-manage; and to increase health literacy education and promotion. The focused attention to these interventions may promote a reduction of emergency departments and inpatient admissions. The reduction of emergency department visits and inpatient admissions may help lower health costs and over utilization of unnecessary services. The results of the study indicated a possible link between case management interventions and insufficient patient education on appropriate use of services, inadequate health promotion, and low health literacy. Subsequently, several factors contributed to patients not being fully educated or informed on appropriate utilization of health services, participation in routine health maintenance, insufficient self-management skills, lack of ability to navigate the health care system, and unable to manage chronic health conditions. These factors lead to increased health care costs and poor patient health outcomes.

### **Application to Theoretical Framework**

Orem's self-care deficit theory was the theoretical framework as it implies patients' self-care requisites. This framework was relevant to determining patients' self-care deficits, assisting patients with meeting self-care needs, promoting healthy lifestyles, and improving health literacy. Patients' improved health literacy and adopting healthy lifestyles may reduce the over utilization of emergency departments and inpatient

admissions. The role of case managers may need to increase focus on the patients' ability to self-manage their health needs.

### **Limitations**

The results of this research study were limited. The questionnaire survey was distributed to 125 participants with 31 completed surveys. The responses by the participants provided an insight on case managers' perceptions of effective interventions; and cannot be applied to all case managers' perceptions of effective interventions. The geographic location provided a limited sampling, as well as small ambulatory case management department, and the low number of inpatient case managers. The research results could not directly identify if patient education would assist in reduction of emergency department utilization or inpatient admission.

### **Implications for Nursing**

The study results demonstrated the importance of health literacy, disease prevention, health promotion, and patients' self-management abilities. Case managers need to direct more efforts in providing and promoting health literacy when assisting patients. Patients' self-management skills should be assessed when determining case management interventions for patients. The effectiveness of any nursing intervention can be measured by the desired outcome for the patient. Case managers can possibly make their interventions more effective by focusing on immediate needs of the patients and incorporating patients' participation to enhance their self-management abilities. Effective interventions are the foundation of nursing by assisting patients to promote healthy lifestyles, disease prevention, and adequate health literacy to provide own self-care. The

effectiveness of interventions would in turn assist with reduction of health care costs by reducing unnecessary utilization of services.

### **Recommendations**

The results from this study suggested further review of case managers' interventions and the effectiveness in assisting patients. The review of case managers' interventions should be examined and compared to patient involvement related to self-management skills. The survey questionnaire could be modified for specific case management practice areas. Case managers' could be interviewed or surveyed on interventions they have found effective in assisting patients. Healthcare systems can utilize patient surveys at the time of case management services. The survey results may be an opportunity to involve specific patient-drive interventions to be more effective.

### **Conclusion**

The participation from this study was limited. Although, the responses implied a need to focus on patients' self-management abilities, work toward patients' behavior change for healthy lifestyles, better chronic disease management, and reviewing case managers' interventions for effectiveness. Case managers' identified time and lack of appropriate utilization of health care services as the greatest barrier to assisting patients. The evaluation of case managers' interventions should be examined in regarding to these barriers, as well as other identified barriers to care. Healthcare systems should promote more patient education on the appropriate utilization of services.



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## Appendix A

## Preventive Medicine Attitudes and Activities Questionnaire (PMAAQ)

1. During the past 60 days, while providing care management services for adult patients (> 18 years of age), how often did you ask about the following? (Check the most appropriate response in each row)

	Never 0%	Rarely 1 – 20%	Sometimes 21 – 40%	Half the Time 41 – 60%	Often 61 – 80%	Usually 81 – 99%	Always 100%
Alcohol Use							
Diet							
Exercise							
Immunization History							
Oral/Dental Health Care							
Home Smoke Detectors							
Symptoms of Depression							
Tobacco Use (Smokeless, Cigarettes, Cigars, Vapes, e-Cigarettes, etc.)							
Illicit Drug Use							
Domestic Violence							
Increasing consumption of fruit and vegetables							
Decrease dietary fat consumption							

2. During the past 60 days, while providing care management services for adult patients (> 18 years of age) who had a BMI of 25 or greater, how often did you advise them to do the following? (Check the most appropriate response in each row)

	Never 0%	Rarely 1 – 20%	Sometimes 21 – 40%	Half the Time 41 – 60%	Often 61 – 80%	Usually 81 – 99%	Always 100%
Exercise regularly							
Set specific exercise goals in terms of frequency and duration							
Suggest specific exercises (walking, chair exercises, etc.)							
Set a goal for weight loss							
Decrease caloric intake							
Decrease dietary fat consumption							
Increasing consumption of fruit and vegetables							
Suggest A1c test							

3. During the past 60 days, while providing care management services for adult patients (> 18 years of age) who used a tobacco product (and/or e-Cigarettes, Vapes, etc.), how often did you do the following? (Check the most appropriate response in each row)

	Never 0%	Rarely 1 – 20%	Sometimes 21 – 40%	Half the Time 41 – 60%	Often 61 – 80%	Usually 81 – 99%	Always 100%
Advise the patient to quit smoking							
Advise setting a specific “quit date”							
Follow up with the patient after the quit date							
Refer the patient to a group clinic or smoking cessation program							
Prepare the patient for withdrawal symptoms							
Suggest prescription (from patient’s physician) for nicotine patch or gum							
Provide self-help materials							



4. During the past 60 days, while providing care management services for adult patients (> 18 years of age) with hypertension, how often did you do the following? (Check the most appropriate response in each row)

	Never 0%	Rarely 1 – 20%	Sometimes 21 – 40%	Half the Time 41 – 60%	Often 61 – 80%	Usually 81 – 99%	Always 100%
Review the health risks of hypertension							
Advise weight loss for patient who were overweight							
Advise salt reduction							
Talk about the importance of taking medications regularly							
Regular exercise							
Limit alcohol consumption							
Smoking /Tobacco cessation							
Decrease caffeine intake							
Reduce stress							
Home blood pressure monitoring							
Advise better sleep habits							
Review patient's self-management skills related to disease process							

5. How effective do you feel you are changing your patients' behavior and improve health literacy with respect to the following? (Check the most appropriate response in each row)

	Minimally Effective	Somewhat Effective	Moderately Effective	Very Effective	Do Not Counsel
Alcohol consumption					
Illegal drug use					
Exercise					
Healthy diet					
Smoking / Tobacco cessation					
Weight reduction					
Injury prevention					
Violence prevention					
Seat belt use					
Sun / UV Exposure					
Stress management / Reduction					
Depression management / Use of Behavioral Health Services					
Hypertension management					
Diabetes management					
COPD management					
Heart Failure management					
Chronic pain management					
Appropriate use of Emergency Department / Urgent Care Services					
Maintain follow up with Primary Care Provider					
Maintain follow up with Specialty Provider					
Patient's ability self-manage health care / needs					

6. In general, how important is it for care managers to assess patients' health literacy and provide health education about the following? (Check the most appropriate response in each row)

	Not Very Importa nt	Somewh at Importan t	Moderatel y Important	Very Importa nt
Alcohol consumption				
Illegal drug use				
Exercise				
Healthy diet				
Smoking / Tobacco cessation				
Weight reduction				
Injury prevention				
Violence prevention				
Seat belt use				
Sun / UV Exposure				
Stress management / Reduction				
Depression management / Use of Behavioral Health Services				
Hypertension management				
Diabetes management				
COPD management				
Heart Failure management				
Chronic pain management				
Patient's ability self-manage health care / needs				
Appropriate use of Emergency Department / Urgent Care Services				
Maintain follow up with Primary Care Provider				
Maintain follow up with Specialty Provider				

7. To what extent do you agree with the following statements? (Check the most appropriate response in each row)

	Strongly Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Strongly Agree
I feel comfortable discussing illegal drug use with patients.					
Smoking / Tobacco cessation counseling is an effective use of my time as a care manager.					
For most patients health education does little to promote their adherence to a healthy lifestyle.					
Patients without symptoms will rarely change their behavior on the basis of my advice.					
Most patients try to change their lifestyles if I advise them to do so.					
I think most of my case management interventions are effective when assisting patients					
Most of my case management interventions have little effect when assisting patients					

8. In your case management practice, how significant are the following potential barriers to adequate health literacy, effective health promotion, and disease prevention? (Check the most appropriate response in each row)

	Very Significant	Moderately Significant	Somewhat Significant	Minimally Significant	Not Significant
Lack of time					
Lack of availability of health educators					
Lack of systems for tracking and prompting preventative care					
Low functional literacy level					
Lack ability to navigate health care system					
Lack of follow up with primary care provider					
Lack of follow up with specialty provider					
Lack of follow up with rehabilitative services (cardiac rehab, physical therapy, etc.)					
Lack appropriate understanding when utilizing health care services (emergency department, urgent care, primary care provider, etc.)					

Lack of transportation					
Lack of financial resources / income					
Lack of family or social support					
Lack of or insufficient health insurance					
Food insecurity					
Homelessness					
Lack of pain management services					
Lack of access to behavioral health services					
Lack of substance abuse treatment services					
Personal lack of interest in providing preventative services / education					
Lack of patient interest in prevention					
Uncertainty about what preventative services to provide or educate					
Lack of proper patient education materials					
Communication difficulties with patients					

Cultural differences between care managers and patients					
The care management referral was for a different reason					
The patient requested care management for a different reason					
Patient did not want case management services					
Patient's ability self-manage health care / needs					

## Appendix B

## Permission Letter for Survey Tool

Mark Yeazel <yeazel@umn.edu>

Tue 7/17/2018, 6:15 PM

Julia Williamson



Reply all

Dear Ms. Williamson,

I am pleased to learn of your interest in using the PMAAQ and will gladly grant permission to so. The terms and conditions you describe are acceptable. Please feel free to make any modifications that you would find useful.

I wish you well with your thesis project.

Sincerely,

Mark Yeazel MD, MPH  
Professor  
Department of Family Medicine and Community Health  
University of Minnesota Medical School  
Dinnaken [Suite 200](#)

[925 Delaware St. SE](#)

[Minneapolis, MN 55414](#)

612-624-2335

Tue 7/17/2018, 3:30 PM

yeazel@umn.edu

Letter Seeking Permission to Use Survey/Questionnaire Tool

Julia Williamson, RN, BSN  
Gardner-Webb University  
Hunt School of Nursing  
110 South Main Street, Boiling Springs, NC 28017

Dear Dr. Yeazel,

I am a masters of nursing student at Gardner-Webb University, and writing my thesis titled Case Managers' Perceptions of Effective Interventions. My thesis advisor is Dr. Abby Garlock, who can be reached at 704-406-2306 / [agarlock@gardner-webb.edu](mailto:agarlock@gardner-webb.edu).

I would like your permission to use the Preventative Medicine Attitudes and Activities Questionnaire (PMAAQ) instrument in my thesis research study. I would like to use and print your questionnaire under the following guidelines:

1. The questionnaire will be used for my research study. I will not sell or receive any compensation.
2. The copyright statement will be included with all copies of the research instrument.
3. A copy of my completed research study will be sent to your attention upon the completion of the study.

If these are acceptable terms and conditions, please indicate so by replying to me through email: [jwilliamson1@gardner-webb.edu](mailto:jwilliamson1@gardner-webb.edu)

Sincerely,  
Julia Williamson  
Thesis Student



## Appendix C

### Informed Consent

**Research Study Title:** Case Managers' Perceptions of Effective Interventions

**Researcher:** Julia Williamson, RN, BSN  
Master of Science in Nursing student  
Hunt School of Nursing  
Gardner-Webb University

**Introduction:** You are invited to participate in a research study to understand case managers' perceptions of effective interventions. The research study is being conducted by Julia Williamson, a Master of Science in Nursing student at Gardner-Webb University.

**Purpose:** The purpose of this research study is to determine if case managers view their interventions as effective in reducing emergency room utilization, hospital admissions, and improving patients' health literacy.

**Procedure:** If you choose to participate, you are asked to complete the modified version of the Preventive Medicine Attitudes and Activities Questionnaire (PMAAQ) and return the completed survey to the researcher with the provided pre-addressed stamped envelope. Upon completion of the survey, you will have no further obligation to the research study.

**Time Required:** The anticipated time required to complete the survey is 20 minutes. You will be asked to select the most appropriate response to each question based on your personal and professional experience and judgment.

**Voluntary Participation:** Your participation in this research study is voluntary. If you choose to participate in the study, your completion and submission of the survey will be considered your consent. If you choose not to participate in the study or decide to withdraw, please place the survey and envelope in the locked and secured shred box on your unit.

**Confidentiality:** The information that you give in the study will be handled confidentially. Your data will be anonymous, which means that your name will not be collected or linked to the data. No identifiable information will be obtained from you on the survey. Please do not include any identifiable information on the survey.

**Risks and Benefits:** There are minimal to no known risks for participating in this study. The risks are similar to those you would experience when disclosing information to others. No direct benefits are associated with the participation in this study.

**Payment:** There is no monetary compensation for your participation in the study.

**Right to Withdraw From the Study:** Your participation in this study is voluntary; and you have the right to stop participation at any time.

**How to Withdraw From the Study:** You may withdraw from the study at any time without any given reason or consequence. You have the right to refuse to answer any questions if you choose without consequence and not submit the survey. If you decide to withdraw, please place the survey and envelope in the locked and secured shred box on your unit.

If you have questions about the study, contact the following individuals.

Julia Williamson, RN, BSN  
Master of Science in Nursing student  
Hunt School of Nursing  
Gardner-Webb University  
Telephone: 704-763-5424  
Email: [jwilliamson1@gardner-webb.edu](mailto:jwilliamson1@gardner-webb.edu)

Dr. Abby Garlock  
Thesis Advisor  
Hunt School of Nursing  
Gardner-Webb University  
Telephone: 704-406-2306  
Email: [agarlock@gardner-webb.edu](mailto:agarlock@gardner-webb.edu)

**If the research design of the study necessitates that its full scope is not explained prior to participation, it will be explained to you after completion of the study. If you have concerns about your rights or how you are being treated, or if you have questions, want more information, or have suggestions, please contact the IRB Institutional Administrator listed below.**

Dr. Sydney K. Brown  
IRB Institutional Administrator  
Gardner-Webb University  
Boiling Springs, NC 28017  
Telephone: 704-406-3019  
Email: [skbrown@gardner-webb.edu](mailto:skbrown@gardner-webb.edu)

### **Voluntary Consent by Participant**

I have read the information in this consent form and fully understand the contents of this document. I have had a chance to ask any questions concerning this study and they have been answered for me.

By returning the completed survey in the stamped pre-addressed envelope, I am giving my consent to participate in this study.