

AN ASSESSMENT OF HEALTH LITERACY ABOUT COMPLEMENTARY AND
ALTERNATIVE MEDICINE IN ADULT RESIDENTS
OF FLATHEAD COUNTY, MONTANA

by

Jennifer Lynn O'Neill

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Jean Shreffler-Grant, PhD, RN
Committee Chair

Approved for the College of Nursing

Elizabeth Nichols, DNS, RN, FAAN
Dean

Approved for the Division of Graduate Education

Carl A. Fox, PhD
Vice Provost for Graduate Education

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TABLE OF CONTENTS

1. INTRODUCTION	1
Purpose of the Study	3
Theoretical Framework.....	4
Definitions.....	5
Assumptions.....	6
2. REVIEW OF LITERATURE	7
Health Literacy.....	7
Prevalence and Users of CAM.....	9
Literature on CAM Utilization and Health Literacy Applied to Newman’s Health as an Expanding Consciousness.....	13
Summary	15
3. METHODOLOGY	17
Study Design.....	17
Population and Sample	17
Instrument and Data Collection Procedures	18
Human Subjects Protection.....	19
Data Analysis	20
4. RESULTS	22
Introduction.....	22
Sample.....	22
CAM Utilization	25
Resources Used to Get Health Information	28
Level of Health Literacy about CAM.....	31
Relationship between Health Literacy about CAM and Sociodemographics.....	33
5. DISCUSSION.....	34
Introduction.....	34
Evaluation of Results	35
Demographic and Sociodemographic Measures.....	35
Sociodemographic Characteristics of CAM Users	36
Resources Used to Obtain Health Information	37
Health Literacy about CAM among Adults of Flathead County	39

TABLE OF CONTENTS - CONTINUED

Relationship between Sociodemographic factors and Health Literacy	
Levels.....	40
Limitations	41
Implications.....	41
Nursing Research Implications	41
Nursing Practice Implications.....	42
REFERENCES	44
APPENDICES	49
APPENDIX A: CAM Utilization and Health Literacy about CAM Mail Survey ..	50
APPENDIX B: Cover Letter.....	61

LIST OF TABLES

Table	Page
1. Sociodemographics	24
2. Health Care	25
3. Kinds of CAM Providers, Frequency of Use, and Health Care Problems for Which They Were Used.....	26
4. Kinds of Self-Directed CAM, Frequency of Use, and Health Care Problems for Which They Were Used.....	27
5. Types of CAM Educational Opportunities in the Last 12 Months	28
6. How CAM was Researched	30
7. Information Sources about Health Problems	31
8. Information Sources about CAM.....	31
9. Health Literacy Levels about CAM for Flathead County Adult Residents	32
10. Relationship among Health Literacy Level and Selected Sociodemographics	33

ABSTRACT

The purpose of this study was to explore health literacy about complementary and alternative medicine (CAM) in adult residents of Flathead County, Montana. The combination of documented low health literacy levels in U.S. and the proliferating use of CAM throughout the country create the potential for poor healthcare outcomes. Previous research indicates that due to lack of access to healthcare, rural residents often utilize CAM.

Quantitative research methods and Margaret Newman's Health as an Expanding Consciousness provided the underlying framework for this study. A systematic sampling of 92 residents of Flathead County participated in the study. The data were collected by use of a mail survey which included a ten item CAM health literacy quiz and was analyzed using the SPSS 15 version statistical software program.

The results indicated that almost half of the participants used CAM providers and more than half used self directed CAM. Musculoskeletal pain was the most frequently reported health problem for utilizing CAM. Health care providers, written materials, and the internet were reported most frequently as the resources used to obtain information about health problems and CAM. Greater than half of the participants were rated as Average for their CAM health literacy score and no significant relationships were found between selected sociodemographic factors and CAM health literacy levels.

The implications of the study for nursing research include a) a need for continued research regarding CAM health literacy, b) establishing a valid and reliable tool to measure health literacy levels about CAM, and c) continued research to identify and trend what resources patients are using to obtain their information about health problems and CAM.

The implications of the study for nursing practice include a) the healthcare provider evaluating their own CAM health literacy level and being knowledgeable about where to obtain evidence based practice information about CAM, b) a self assessment about the healthcare provider's feelings about CAM and how they present information or educate their patient's about CAM, and c) providing patients with appropriate education materials about CAM and directing patients to reputable resources about CAM.

CHAPTER 1

INTRODUCTION

During the 1990's, the U.S. public use of complementary and alternative medicine (CAM) increased dramatically. Americans made 425 million visits to alternative health care providers in 1990, a figure that exceeded the number of visits to allopathic primary care providers during the same period (Astin, 1998). CAM has maintained its popularity; in 2002, data from the National Health Interview Study (NHIS) revealed 62% of the U.S. population used CAM during that year (Barnes, Powell-Griner, McFann, & Nahin, 2004). Individuals must have skills beyond functional literacy in order to comprehend the vast amount of health information available regarding CAM, and then make an educated decision to utilize one of its therapies.

Currently, the U.S. population struggles with functional literacy, let alone health literacy. Nearly half of the United States population has been found to have some limitations in functional literacy, the reading and computational skills needed to perform everyday tasks (Nieslen-Bohlman, Panzer, & Kindig, 2004). Functional literacy is an essential component of health literacy. Health literacy is a relatively new term that has attracted attention because of its effects on healthcare outcomes. The World Health Organization (1998) defines health literacy as a representation of cognitive and social skills which determine the motivation and ability of individuals to gain access to, understand, and use information in ways that promote and maintain good health.

The 2003 National Assessment of Adult Literacy (NAAL) found 53% of adults (age 16 and older) had Intermediate health literacy, 22% had Basic, and 14% had Below

basic health literacy. This assessment used a four performance level scale from Below Basic to Proficient (NAAL, 2003). Only within the last decade have researchers identified the problems associated with health literacy, the role it plays in an individual's ability to comprehend health and self-care information, and its relationship to health outcomes (Speros, 2005). This information has alerted the U.S. Department of Health and Human Services' Healthy People 2010 agenda to incorporate an objective to improve the health literacy skills of the individuals of the United States (www.healthypeople.gov).

Weiss, Hart, and Pust (1991) noted that health illiteracy could affect health status and health services utilization in a number of ways. Illiterate patients might lack essential information regarding health care and thereby fail to obtain appropriate treatments. This could eventually result in increased health care costs for management of preventable or inadequately treated medical conditions (Weiss et al.). Illiterate patients might misinterpret instructions regarding medical therapy, leading to treatment failures or side effects and subsequent higher costs for treating those conditions (Weiss et al.). Illiterate patients might also misinterpret the guidelines of the health care system regarding utilization of services and as a result, either under- or over-use services (Weiss et al.). All of these factors combined or other unidentified factors reveal why it is essential to assess health literacy and especially in an upcoming arena such as CAM.

The benefits of health literacy include improved self-reported health status, lower health care costs, increased health knowledge, shorter hospitalizations, and less frequent use of health care services (Speros, 2005). Little has been documented about health literacy regarding CAM. Health care providers should be attentive to patients using a

CAM therapy; these patients may not be aware of the adverse affects associated with this therapy. They also may not be aware that it may interact with their current conventional treatment. For example, it has been well published that St. John's wort, an herbal often used for depression, uses the same metabolic pathway, cytochrome P450, as many other prescription drugs do, such as drugs for heart disease, depression, seizures, certain cancers, transplant rejection, and the prevention of pregnancy (www.fda.gov). Even more concerning is research showing that the users of CAM are often reluctant to discuss that they use CAM with their care provider (Cauffield, 2000). Establishing a trusting relationship with patients and assessing health literacy about CAM may enable local health care organizations and professionals to better meet the needs of their communities.

Purpose of Study

The purpose of this study is to explore the health literacy about complementary and alternative medicine (CAM) among adult residents of Flathead County, Montana. The assessment of CAM health literacy is particularly relevant because the use and prevalence of CAM is proliferating. The research questions guiding this study were 1) What resources do residents of Flathead County use to get their health information? 2) What is the level of health literacy about CAM in adults residing in the Flathead County of Montana? 3) Is there a relationship between the level of health literacy about CAM and selected factors such as age, gender, marital status, and use of CAM among adults residing in Flathead County, Montana?

The information gained from this research endeavour will promote a better understanding about CAM health literacy. Furthermore, the data will aid in the assessment and development of educational strategies to promote informed health care consumerism. Informed health care decision making will foster a positive health outcome for the individual (Speros, 2005; Weiss et al., 1991).

Theoretical Framework

Margaret Newman's Health as Expanding Consciousness is the chosen conceptual framework for this research study. Newman sees the human being as an open energy system in continual contact with a universe of open systems such as the environment (McEwen & Wills, 2002). Yamashita and Tall (1998) pointed out that Newman's theory fits well with an alternative medicine paradigm with its emphasis on human energy fields and the interconnectedness of all things, concepts that have long been part of Eastern thought such as Buddhism and traditional Chinese medicine.

Newman believes it is significant to recognize patterns in one's personal life. The use of pattern recognition provides the individual with the insight or recognition of a truth in their existence (Newman, 1994). Newman's theory is akin to content analysis when analyzing narrative data, for example, the researcher is trying to identify prominent themes and patterns among themes from the qualitative data retrieved (Polit & Beck, 2004). Once these themes and patterns are recognized, then conclusions can be attained.

The pattern to be recognized in this research study is the potential knowledge deficit about CAM and the importance of health care providers recognizing this issue and

taking action. Newman (1994) stated that pattern recognition illuminates the possibilities for action and is the key to the process of evolving to a higher level of consciousness. The pattern recognition for the individual user of CAM is that allopathic medicine is not alleviating their symptoms or completely restoring their health so they are choosing a complementary and alternative source of health care.

Moreover, another pattern to recognize is health illiteracy in the U.S. population. Health illiteracy is fostered by generalized functional illiteracy as well as the inability to understand or synthesize the vast amounts of information needed to comprehend allopathic or complementary and alternative medicine. As mentioned above, those individuals who seek alternative and complementary medicine will hypothetically seek to become health literate regarding CAM because they are taking action and looking to find a homeostasis within themselves and their environment. A health conscious consumer engages in those activities that lead to better health, including actively seeking out health information and processing such information (Dutta-Bergman, 2003). Newman (1986) stated that health is an essential component of her theory and it is seen as a process of developing awareness of self and the environment together with increasing the ability to perceive alternatives and respond in a variety of ways.

Definitions

Complementary and Alternative Medicine (CAM). The National Center for Complementary and Alternative Medicine defines complementary and alternative medicine as a group of diverse medical and health care systems, practices, and products that are not presently considered to be a part of conventional medicine (National Center

for Complementary and Alternative Medicine [NCCAM], 2006).

Conventional Medicine. Medicine as practiced by holders of M.D. (medical doctor) or D.O. (doctor of osteopathy) degrees and their allied health professionals, such as physical therapists, psychologists, and registered nurses (www.medterms.com).

Health Literacy. The World Health Organization (1998) defines health literacy as a representation of cognitive and social skills which determine the motivation and ability of individuals to gain access to, understand, and use information in ways that promote and maintain good health.

Assumptions

Three assumptions underlie this work. First, some portion of the residents of Flathead County, Montana will be health illiterate. Secondly, it was assumed that participants in the study will provide accurate information. Lastly, it was assumed that information gathered in this study would reveal the potential health care literacy needs within the community.

CHAPTER 2

LITERATURE REVIEW

A summary of the literature relating to health literacy is reviewed. In addition, literature on CAM utilization in adults is summarized. Finally, literature on CAM utilization and health literacy as applied to the Newman's Health as Expanding Consciousness is reviewed.

Health Literacy

Research suggests that health literacy is a stronger predictor of health status than socio-economic status, age, or ethnic background (Williams, Baker, Parker, & Nurss, 1998; Schillinger et al., 2002; Parker et al., 2003). Little attention has been given to the pervasive problem of inadequate health literacy as a barrier to navigating the system and functioning successfully in a health care consumer role (Nielsen-Bohlman, Panzer, & Kindig, 2004). There is a higher rate of hospitalization and use of emergency services among illiterate patients and therefore increased health-care costs (Nielsen-Bohlman et al., 2004).

Ninety million people or half of all adult Americans have trouble comprehending health information (Nielsen-Bohlman et al., 2004). One of the largest studies of the scope of health literacy published to date found that one-third of English speaking patients at two public hospitals in the U.S. could not read and understand basic health-related

materials (Williams et al., 1995). Speros (2005) noted that, even if a person is considered literate, they may be illiterate in regards to health care information due to the inability to comprehend unfamiliar health care vocabulary and health related concepts.

Williams and colleagues (1995), found that 60% of patients could not understand a routine consent form, 26% could not understand information written on an appointment slip, and 42% failed to comprehend directions for taking medications. Williams et al. (1998) also studied the relationship of health literacy to patient's knowledge of their chronic disease, specifically hypertension and diabetes. Forty-eight percent of the patients with diabetes and hypertension had inadequate health literacy. These patients also had significantly less knowledge of their disease, important lifestyle modifications, and essential self-management skills (Williams et al., 1998).

William et al. (1998) used the Test of Functional Health Literacy in Adults (TOFHLA) to measure the patient's health literacy. This instrument assesses the ability to perform basic reading and numerical skills required of patients in the health care setting (ie, reading prescription bottles, appointment slips, and instructions for diagnostic tests). The TOFHLA consists of a 50 item reading comprehension and 17 item numerical ability test, taking up to 22 minutes to administer. Parker, Baker, Williams, and Nurss (1995) found the TOFHLA is a valid, reliable indicator of patient ability to read health-related materials. There is also a Spanish TOFHLA (TOFHLA-S) and a short form TOFHLA (S-TOFHLA), both have been validated as health literacy tools (www.metric.research.med.va.gov). Validity and reliability were established for the TOFHLA by comparing the results with two other valid and reliable indicators of health literacy, the Wide Range Achievement Test—Revised (WRAT-R) and the Rapid

Estimate of Adult literacy in Medicine (REALM) (Parker et al., 1995).

The Wide Range Achievement Test (WRAT) measures basic academic skills for ages five to adult covering reading, written spelling, and arithmetic. The reading subscale of the WRAT (WRAT-R) has been used to measure health literacy. The test assesses word recognition by having the person read aloud from a list of words and when 10 words are mispronounced, the test concludes and a score is derived (www.metric.research.med.va.gov).

The Rapid Estimate of Adult Literacy in Medicine (REALM) is a health literacy screening instrument that contains 66 words chosen based on patient educational materials and intake forms used in primary care clinics. It assesses an adult patient's ability to read common medical terms and lay terms for body parts and illnesses. There is a shortened, eight item version of the REALM also (REALM-R). The REALM and REALM-R were found to be valid and reliable tests and are practical instruments of word pronunciation in health care to use in busy primary care settings (Davis et al., 1993; Bass, Wilson, & Griffith, 2001).

Traditional patient education relies heavily on written material about disease processes, medical management, and self care instructions (Williams et al., 1998). Most adults read at an eighth grade level, and 20% of the population reads at or below a fifth-grade level. Most health care materials, however, are written at a tenth grade level (Safeer & Keenan, 2005).

Prevalence and Users of CAM

Eisenberg et al., (1998) published supporting evidence on the increasing popularity of CAM. The study found the total number of new and existing CAM users

increased from 33.8% in 1990 to 42.1% in 1997. In 1997, it was conservatively estimated that the U.S. public spent between \$36 billion and \$47 billion on CAM therapies (Eisenberg et al., 1998). The prevalence of herbal remedy use increased by 380%, the prevalence of high-dose vitamin use increased by 130%, and the total number of visits to CAM providers increased by 47% from 427 million in 1990 to 629 million in 1997 (Institutes of Medicine, 2005). Hospitals are offering CAM therapies, many allopathic physicians are instituting CAM modalities in their practices, integrative-medicine facilities are being set up, and health maintenance organizations and insurance companies are covering CAM (Institute of Medicine, 2005).

Individuals most likely to use CAM are middle-aged, 45 to 65 years old, white, female, educated beyond high school, and those who have a socioeconomic status considered middle income (Al-Windi, 2004; Eisenberg et al., 1993 and 1998; Astin, 1998; Cauffield, 2000; Bausell et al., 2001; Grzywacz, Lang, Suerken, Quandt, Bell & Arcury, 2005). Chronic pain such as back pain, cancer pain, and arthritic pain are common reasons for CAM use (Bausell et al., 2001). Vallerand, Fouladbakhsh, and Templin (2003) found amongst urban, suburban, and rural populations, the suburban group had the highest CAM use. Pagan and Pauly (2005) found that increasing costs of conventional medication, rising health care premiums, and lack of insurance are significantly associated with the increased volume of CAM users.

Regarding CAM use by American women, Upchurch and Chyu (2005) found women who are white, older, have more education, poorer health, or live in the west or Midwest are more likely to use CAM. This study also found foreign-born women, those with lower incomes, or who live in the Northeast are less likely to use CAM, in addition

to black, Hispanic or Asian women (Upchurch & Chyu, 2005). Barnes et al., (2004) found that Asians, Hispanics and black adults do use CAM, but different modalities are more prevalent with each ethnicity. For example, white adults were found to use more manipulative and body-based therapies than Asian adults or black adults (Barnes et al., 2004).

As for the rural population, Dello Buono, Urciuoli, Marietta, Padoani, and De Leo (2001) found 29.5% of community dwelling adults used at least one form of CAM, with women more likely than men to use CAM. Ceullar et al. (2003) hypothesized this could be because patients in rural areas experience a variety of unmet needs partly due to limited access to primary care, fewer resources, lower income, less comprehensive health coverage, ill-equipped or poorly staffed health care agencies, and geographic isolation. In contrast to the reasons for utilization of CAM by rural dwellers mentioned by Ceuller and colleagues (2003), Astin (1998) hypothesized the following four types of CAM users in the U.S. population:

- 1) individuals who report less satisfaction with conventional medicine,
- 2) individuals with greater financial resources because the majority of CAM modalities are not covered by insurers,
- 3) individuals with higher levels of education and
- 4) individuals who are part of a cultural group and identified by the following values:
 - a) commitment to environmentalism;
 - b) commitment to feminism
 - c) involvement with esoteric forms of spirituality and personal growth

psychology, self-actualization, and self-expression; and

d) love of the foreign and exotic.

Barnes et al. (2004) found that the ten most commonly used CAM therapies are the following: prayer, prayer by others for one's health, natural products, deep breathing exercises, participation in prayer group for one's own health, meditation, chiropractic care, yoga, massage, and diet-based therapies. If prayer is excluded as a CAM modality, the usage of CAM was reduced from 62% to 36% during the year 2002 (Barnes et al., 2004). Persons in the study classified as poor were more likely to use CAM if megavitamin therapy and prayer were included whereas not poor adults were more likely to use CAM if megavitamin therapy and prayer were excluded (Barnes et al., 2004). These investigators also found the majority of adults in this study believed CAM use combined with conventional medicine was beneficial (54.9%) whereas some of the adult CAM users believed conventional medicine would not help them (28%). Other reasons given for CAM use were conventional medicine was too expensive (13%), a medical professional suggested they try it (26%), and half thought it would be interesting to try (Barnes et al., 2004).

Some of the CAM therapies have the considerable potential to harm; many consumers ignorantly believe that "natural" equates with "safe" (www.nccam.nih.gov). For example, just like St. Johns Wort can interfere with the metabolism of other prescription medications, the practice of colonics has been found to be risky as well. Cases of serious infections related to contaminated equipment, heart failure, and electrolyte imbalances have been reported due to colonic irrigation (Barrett, 2003). The FDA classifies colonic irrigation systems as Class III devices that cannot be legally

marketed except for medically indicated colon cleansing (such as before a radiologic endoscopic examination) but the only states that regulate the industry are Florida and California (Jackson, 2005). According to an article in the Chicago Sun Times (Jackson, 2005) celebrities have helped colonics get mainstream attention touting weight loss benefits and some colonic businesses have recently seen a 20% increase in business. Adversaries of the therapy reject its weight loss claims stating they are not long term and the risk of perforation of the colon during the procedure and a potential decrease in good bacteria outweigh any potential benefits (Jackson, 2005). The current healthcare system relies on the health consumer to make safe, informed choices when utilizing CAM.

Literature on CAM Utilization and Health Literacy Applied to Newman's Health as an Expanding Consciousness

Newman believes that sickness can be the shock that reorganizes the relationships of the person's pattern in a more harmonious way (Newman, 1994). One of the fundamental concepts of any CAM modality is to restore the body's balance/energy level (Chopra, 1989). Complementary or alternative medicine is often sought out by those who believe in mind/body medicine (Bausell, Lee, & Berman, 2001).

Individuals often choose CAM because of chronic illness; the chronic illness causes them to have an unbalanced energy system and they seek CAM to restore that balance (Al-Windi, 2004; Astin, 1998; Bausell, et al., 2001; Cauffman, 2000; Eisenberg et al., 1998; Grzywacz et al., 2005; Post-White & Hawks, 2005). There are other multiple states of illness that stimulate the use of CAM therapy. Individuals with asthma, urinary tract infections, headaches, dietary supplements, mental health conditions, and metabolic

disorders are just some of the more common users of CAM (Bausell et al., 2001; Gardiner & Wornham, 2000). Visits to a CAM provider were three times more likely in the person suffering from mental, metabolic, and musculoskeletal complaints (Bausell et al., 2001). Individuals diagnosed as HIV-positive in the US often turn to some form of CAM in addition to conventional medicine for their treatment (Jernewall, Zea, Reisen, & Poppen, 2005).

Individuals who believe in mind/body medicine realize that state of mind or consciousness affects their health (Chopra, 1989). Simply put by Deepak Chopra (1989), if you are happy, you have happy cells and if you are sad you have sad cells. Newman's theory relates to this concept with her principle that persons can be defined by their patterns of consciousness which include relating to the environment, thinking, feeling, and the processing of information intertwined with the physiological systems (Newman, 1994).

Individuals who choose to use CAM often do so because they are dissatisfied with conventional medicine; they feel it has been ineffective and produced adverse effects (Astin, 1998).

“Each of us at some time in our lives is brought to a point when the ‘old rules’ do not work anymore, when what we have considered progress does not work anymore. We have done everything ‘right’ but things still do not work. We come to a point when the old rules do not work and the task of life, the crux of life, is to learn new rules” (Newman 1999, p.99).

Learning new rules or gaining health literacy requires motivation.

One of the key determinants of the consumer's participation in gaining knowledge on a particular topic, issue, or product is the level of motivation or interest in the specific

topic, issue or product (Dutta-Bergman, 2003). When a person develops an illness or disease they are encouraged to find the remedy or cure. Newman (1999) believes disease may be a manifestation of a pattern which is unfolding into a higher level of consciousness. Dutta-Bergman (2003, p 92) stated “health-active, health responsible consumers are more highly motivated in health-related issues, do not hesitate to disagree with their health advisors, and frequently choose to explore alternative and holistic therapies.”

Pagan and Pauly (2005) noted recent increases of CAM use is partially related to the desire for individual empowerment. Dutta-Bergman (2003) found self-efficacy is strongly correlated with health-oriented lifestyle decisions such as food consumption, dietary behavior, and other health outcomes. Individuals who have a high level of self-efficacy are more likely to take charge of their health and seek out additional health information (Dutta-Bergman, 2003). This demonstration of accountability for one’s health can be related to Newman’s belief that gaining insight into one’s pattern of life can be the energetic shift to transcend an individual to higher consciousness (Newman, 1999).

Summary

Complementary and alternative medicine use is on the rise but exploration of health literacy is still in its infancy. Identification of this dichotomy will hopefully spawn greater interest in creating a health literate America and eventually provide literature regarding health literacy about CAM.

The consequences of a lack of health literacy as well as the benefits of health literacy were reviewed. This information emphasized the importance of education starting at the primary level. It highlighted that not only will illiteracy affect an individual's socioeconomic status it will affect an individual's health status.

The review of literature about CAM outlined that there are some commonalities with its use and prevalence. It also revealed that it is quite variable as to which individual uses it and why and excludes no particular person. Care providers should be alert to this information so they assess each patient regarding potential CAM use or the desire to use CAM. This should be an opportunity for the care provider to participate in improving the health literacy of the patient.

CHAPTER 3

METHODOLOGY

This chapter includes a description of the design, sample selection, instrument, data collection, and data analysis procedures used in this study to explore health literacy about complementary and alternative medicine. A description of the procedures used to protect the rights of study participants is also provided.

Study Design

This study employed a descriptive cross-sectional design. A mail survey was used to explore participants' utilization of CAM, their knowledge about CAM and how they access information regarding health care. Demographic and sociodemographic information was collected. This design enabled the researcher to explore health literacy about CAM in this population and investigate associations between particular variables and health literacy about CAM. The survey questions are based on concepts from the theoretical framework and the literature review.

Population and Sample

The target population for this study consisted of Flathead County residents 18 years and older. Flathead County has a population of 82,027 residents and 77.8% of those residents are 18 years and older (US Census Bureau, 2005). The method of selection was

random sampling from the phone book for Flathead County. The phone book consists of 336 pages of business and residential listings and a name was picked from every fifth page by randomly pointing on the page without looking at the page. A person other than the investigator participated in this study by doing the random pointing on the phonebook page. If a nonresidential listing was selected, such as a business, government office, etc., another listing was randomly selected from the same phone book page. A total of 400 potential participants were selected for the sample and received mail surveys. This sample size was chosen with the expectation of a 25% response rate and what seemed reasonable given time and budget limitations.

Instrument and Data Collection Procedures

A survey questionnaire was used for the mail surveys (See Appendix A). The investigator adapted the instrument for use in this study from the data collection tool used in the Health Care Choices Project (Shreffler-Grant, Weinart, Nichols, & Ide., 2005) and from a professional project by Laura Glover (2003) titled, “Complementary and Alternative Medicine Use in Children with Chronic Health Conditions”. Additionally, an online CAM quiz was used to formulate questions #34-43 (www.healthforums.com).

There were a total of 58 questions and the questions varied as to format, but were designed to elicit the most useful information to address the research questions. For example, one question asked the participant to specify and list the CAM therapies they have tried or currently used. The survey was organized into the following categories: demographics (15 questions); general health (3 questions); health care (8 questions); CAM (13 questions); and health literacy about CAM (19 questions). There were

specifically 10 questions (#34-43) in the knowledge about CAM section that were scored on a 0-10 scale for purposes of classifying participants as health literate or health illiterate about CAM. A classification of Below Average was given for 0-3 correct responses, a classification of Average was given for 4-7 correct responses, and a classification of Above Average was given for 8-10 correct responses. The surveys were mailed in November 2006. Recipients were given one month to return completed surveys.

Human Subjects Protection

When humans are used as study participants it is essential to guarantee the rights of those humans are protected (Polit & Beck, 2004). The Institutional Review Board of Montana State University-Bozeman approved this study. The study proposal was submitted to Institutional Review Board on November 1, 2006 and approval to proceed with the study was received on November 13, 2006.

To ensure the rights of the study participants were protected, a cover letter was sent with the survey which included: the study goals, the type of data to be collected, who was sponsoring the study, how the participant was chosen, the potential benefits/risks associated with participation, confidentiality pledge of privacy, and contact information (See Appendix B). Each participant was given the investigator's and the committee chair's (Jean Shreffler-Grant) phone numbers and was encouraged to contact each or both if they had any questions regarding the study. Consent to participate was assumed if the participant completed and returned the survey.

The benefit to the participant was the opportunity to contribute to the knowledge of health literacy about CAM, a topic about which little is known. These data will provide health care providers of conventional and complementary and alternative medicine with insight regarding what educational interventions are needed to promote informed patients and prevent potential poor health care outcomes. The risks for participation in this study include inconvenience of lost time to the participant and possible concerns over sharing personal information. Again, a pledge of privacy was given. Participants were offered a copy of the results if so desired.

Data Analysis

As surveys were returned by mail to the investigator, the data were cleaned, checked, coded, and entered into the SPSS 15 statistical software program for analysis. Descriptive statistics, frequencies, and cross tab tables were produced to identify possible data entry errors. When implausible entries were discovered, the data were checked against the original surveys and corrected as necessary.

Several questions in the survey tool were short answer, and thus yielded qualitative data. These data were coded according to content area and incorporated into the SPSS format. Variables created from these qualitative responses were then summarized using descriptive statistics.

The data produced from descriptive statistics summarized the survey results. To address research question #1, what resources have residents of Flathead County used to get health information, the responses to survey questions #24-33 were

examined and summarized. To address research question #2, what is the level of health literacy about CAM in residents of Flathead County, responses to survey questions # 34-43 were examined and summarized. Based on the number of correct responses to questions #34-43, participants were assigned a “health literacy about CAM” score of Below Average, Average, or Above Average. To address research question #3, is there a relationship between the level of health literacy about CAM and selected factors such as age, gender, marital status, and use of CAM among adults residing in Flathead County, Montana, chi square statistics were used to examine and identify significant associations.

CHAPTER 4

RESULTS

This study explored the health literacy about CAM among adult residents in the Flathead County of Montana. Participants were contacted by mail and were asked to complete a survey that included questions related to allopathic medicine use, CAM use, resources used to obtain health information, and sociodemographic information. The participants also completed a ten item quiz to assess health literacy levels about CAM. The data were entered into SPSS version 15 for analysis. The data were summarized utilizing descriptive statistics; a “health literacy about CAM” score was computed, and relationships between the scores and selected sociodemographic variables were examined using Chi Square statistics. This chapter contains a summary of the results and addresses the research questions.

Sample

A total of 92 residents of Flathead County participated in this study. There were 400 residents contacted by mail in order to acquire the sample. There was a 33.3% response rate. This rate was calculated by totaling the number of returned surveys completed (92) and blank (15) and dividing that number by total number of participants who received the survey (79 surveys were returned due to wrong address, change of address, no mail receptacle, or deceased, therefore 321 was the denominator in the equation). The participants either lived within or outside of one of the county’s towns

ranging in population from 143 (Elmo) to 14,223 (Kalispell). The majority of the participants resided in Kalispell (47.2%, n=42) (See Table 1). The average time participants lived in Montana was 33 years with the minimum being one year and the maximum being 72 years.

Of the 92 participants, 36.3% (n=33) were male and 63.7% (n=58) were female and one participant did not answer the question about gender. The age range of the participants was 21 to 95 years of age, with a mean age of 55 years old. The most prevalent age group was 40-59 (n=50) at 54.9% and the next largest group of participants was the 60-79 age range at 26.4% (n=24). All but two of the participants described themselves as Caucasian (97.8%, n=88). One participant was of Mexican American ethnicity and another was mixed Caucasian/African American race. The bulk of the participants were married (69.2%, n=63) and 15.4% (n=14) were divorced/separated.

The participants were well educated with 35.6% (n=32) holding a bachelors degree and 20% (n=18) holding a graduate degree or higher. The largest group of participants (55.3%, n=47) made \$40,000 or more a year in income and only 3.5% (n=3) made less than \$8,000 year. More than half of the participants who were employed (59.3%, n=54) worked full time (70.4%, n=38). Private insurance was chosen by almost half of the participants as to how they would pay most of their primary care bill (49.5%, n=45) and self pay was chosen by more than three-quarters of the respondents as to how they would pay their CAM bill (78.5%, n=62) (See Table 2).

Of the 92 participants, 83.5% (n=76) reported they had a primary care provider (PCP) and 16.5% (n=15) reported they did not. A doctor was the most frequently seen

PCP at 80.5% (n=70) and a nurse practitioner was the next most frequently seen (6.9%, n=6). A majority of the respondents (73.6%, n=67) reported that they did not have significant health problems and 25.3% (n=23) reported having significant health problems. The three most common types of health problems reported were cardiovascular at 27.7% (n=15), musculoskeletal pain (including fibromyalgia) at 24.1% (n=13), and endocrine problems (including obesity) at 20.3% (n=11).

Table 1. Sociodemographics

	N= number of people	Percentage %
Gender		
Male	33	36.3%
Female	58	63.7%
Age		
20-39	12	13.2%
40-59	50	54.9%
60-79	24	26.4%
80 and older	5	5.5%
Race/Ethnicity		
Caucasian/White	88	97.8%
White/AA*, MA *	1 each	1.1% each
Location of Residency		
Columbia Falls	6	6.7%
Whitefish	17	19.1%
Kalispell	42	47.2%
Big Fork	8	9%
Polson	9	10.1%
Kila, Lakeside	2 each	2.2% each
Coram, Somer, Elmo	1 each	1.1% each
Education		
Less than High School	2	2.2%
H.S. Diploma/GED	24	26.7%
Certificate/Apprentice	5	5.6%
Associate Degree	9	10%
Bachelors Degree	32	35.6%
Graduate Degree or higher	18	20%
Income		
Less than 8,000	3	3.5%
\$8,000-\$19,000	9	10.6%
\$20,000-\$29,000	5	5.9%
\$30,000-\$39,000	8	9.4%
\$40,000 or more	47	55.3%
Declined to Answer	13	15.3%

Note: not all questions were answered by participants; *AA=African American; MA= Mexican American

Table 2. Health Care

	N = number of people	Percentage %
Most of PCP* Bill Paid		
Self Pay	27	29.7%
Medicare	14	15.4%
Medicaid	3	3.3%
Veterans, IHS*, etc.	2	2.2%
Private Insurance	45	49.5%
Most of CAM Bill Paid		
Self Pay	62	78.5%
Medicare	5	6.3%
Medicaid	0	0
Veterans, IHS, etc.	1	1.3%
Private Insurance	11	13.9%
Significant Health Problems		
Cardiovascular	15	27.7%
Musculoskeletal	13	24.1%
Neurological	6	11.1%
Mental Health	4	7.4%
Respiratory	5	9.2%
Endocrine	11	20.3%
General Health Status		
Poor	0	0
Fair	5	5.5%
Good	22	24.2%
Very Good	34	37.4%
Excellent	30	33%
HCP* see the most		
Doctor	70	80.5%
Nurse Practitioner	6	6.9%
Physician Assistant	1	1.1%
Clinic Staff/Provider in Same Practice	2	2.3%
Other (acupuncturist, health food store, chiropractor, naturopathic doctor)	8	9%

Note: not all questions answered by participants, *IHS=Indian Health Services; PCP=Primary Care Provider; HCP=Health Care Provider

CAM Utilization

Almost half of the participants utilized CAM providers (48.4%, n=44) and 51.6% (n=47) did not use CAM. The majority of respondents who used CAM providers, used them for both health maintenance and health problems at 49.1% (n=27). Chiropractic, massage, and acupuncture were the top three CAM modalities used; see Table 3 for the

types of CAM therapies used and the frequency with which they were utilized.

Musculoskeletal pain was the number one reported health problem for which a CAM provider was used, specifically back pain.

More than half the participants utilized self-directed CAM at 65.5% (n=57). None of the participants stated they used self-directed CAM for health problems alone; 50.9% (n=28) used it for health maintenance only and 49.1% (n=27) used it for both health maintenance and health problems. The top three self directed CAM practices were vitamin use, herbals, and yoga. Again, musculoskeletal pain was the most frequently reported health problem for which respondents used self directed CAM, second was colds/flu symptoms, and third was stress (See Table 4). The majority of participants informed their primary care providers they used CAM including self-directed CAM (78.3%, n=47).

Table 3. Kinds of CAM Providers Used, Frequency of Use, And Health Problems For Which They Were Used

	N= number of people	Percentage %
<u>Kinds of CAM</u>		
Chiropractor, Massage	33	33%
Massage	33	33%
Acupuncturist	10	10%
Naturopath	8	8%
Biofeedback	6	6%
Reflexologist	3	3%
Herbalist	3	3%
Colonic Hydrotherapist, Homeopathic, Rolfer Kinesiologist	1 each	1% each
<u>Frequency of CAM use</u>		
>1x but less than 10 times	39	43.3%
Once a month	13	14.4%
>10x but less than 40	9	10%
Once	8	8.8%
Once a year	7	7.7%
Three times a week	4	4.4%
Once a week, twice a week, every 3 months, when needed	2 each	2.2% each
Everyday	1	1.1%

Table 3. continued

<u>Health Problems</u>		
Musculoskeletal Pain	46*	63.9%
Women's health/hormones	4	5.5%
Headaches, Thyroid Dysfunction, cardiovascular, Colds/flu	3 each	4.2% each
Constipation	2	2.8%
Seizures, smoking cessation, skin problems, fatigue/low energy level, cancer	1 each	1.4% each

Note: respondents could provide more than one answer;* 29 out of 46 respondents specifically listed back pain

Table 4. Kinds of Self Directed CAM , Frequency of Use, and Health Problems For Which They Were Used

	N = number of people	Percentage %
<u>Self Directed CAM</u>		
Vitamin Therapy	42	38.8%
Herbal Therapy	29	26.9%
Yoga	13	12%
Home Remedies	9	8.3%
Meditation	4	3.7%
Exercises	3	2.7%
Oral chelation	2	1.8%
Particular food diet, magnets, swing master, colon cleanse, bioscan, tai chi, food grade hydrogen peroxide	1 each	0.9% each
<u>Frequency of Self Directed</u>		
Every day	71	65.1%
Once a week	13	11.9%
When needed	10	9.2%
Three times a week	7	6.4%
Once a month, twice a month, once a year	2 each	1.8% each
Twice a week, >1x but less than 10	1 each	0.9% each
<u>Health Problems</u>		
Musculoskeletal pain	14	28.6%
Colds/flu symptoms	10	20.4%
Stress	4	8.2%
Cardiovascular	3	6.1%
Headaches, vasomotor symptoms, skin problems, hematological, thyroid dysfunction, gastrointestinal	2 each	4.1% each
Seizures, sleep disturbance, prostate problems, cancer, allergies, kidney problems	1 each	2% each

Note: respondents could provide more than one answer

Resources Used to Get Health Information

The first research question in this study was what resources do residents of Flathead County use to get their health information. Survey question 24, question 26, and questions 28-31 address this research question by asking the participant to either write down their informational resource or circle a choice of resources given.

Question 24 of the questionnaire addressed this topic by asking the participant how they found out about their CAM provider or the self-directed practice they used. Friends and multiple reading materials were the answers most frequently given. For CAM providers, 51.7% (n=30) chose a friend as their resource, and for self-directed CAM, 50.8% (n=30) listed multiple reading materials as their resource.

Question 26 asked participants to list the type of CAM educational opportunity they had participated in the last 12 months and for what type of CAM. Of the 92 participants, 69.6% (n=64) of the respondents had not participated in any CAM education. Of the 29.3% (n=27) who did participate in CAM education, over one-third had educated themselves by reading a book on the CAM modality (37%, n=17). See Table 5 below.

Table 5. Types of CAM Educational Opportunities in the Last 12 Months

	N = number of people	Percentage %
Book on CAM therapy	17	37%
CAM seminar/workshop	9	20%
Reading materials/no specifics	6	13.3%
Internet reading on CAM	5	11%
Pamphlet on CAM therapy	4	8%
Magazine Article	2	4%
Radio/TV	1	2%
Videotape(s) on CAM	1	2%

Note: not all questions answered by participants

Question 28 asked if anyone had tried CAM or any self directed practices because someone else suggested it. In the study, 50.6% (n=41) replied no and 49.4% (n=40) replied yes. The two most frequent responses were friends at 67.7% (n=32) and family members at 33.3% (n=17).

Question 29 asked if the person who suggested the CAM therapy had researched it prior to suggesting it and if so how. The most frequent response was through personal experience at 44.2% (n=19) (See Table 6).

Table 6. How CAM was Researched

	N = Number of people	Percentage %
Personal Experience	19	44.2%
Book	5	11.6%
Internet	4	9.3%
Friends	4	9.3%
CAM provider	3	6.9%
Multiple Sources	2	4.6%
Family member	2	4.6%
Workshop/Seminar	2	4.6%
Health food store	1	2.3%
Magazine article	1	2.3%

Note: not all questions answered by participants

Questions 30 and 31 contained choices to circle for how information was obtained by the participant regarding information about health problems and information about CAM. A health care provider was chosen most frequently at 28.7% (n=66) with the internet next at 17.4% (n=40) for information sources for health problems. Most of the participants noted they had access to the internet (85.7%, n=72). Respondents obtained information about CAM most frequently from a book/pamphlet/professional journal (20.2%, n=32) and next most commonly from a health care provider (17%, n=27) (See Tables 7 and 8).

Table 7. Information Sources About Health Problems

	N= Number of people	Percentage %
<u>Health Problem Resources</u>		
Health Care Provider	66	28.7%
Internet	40	17.4%
Book/pamphlet/professional journal	38	16.5%
Magazine	27	11.7%
TV/radio/newspaper	19	8.3%
Friend	18	7.8%
Family Member	15	6.5%
At work/work in health care setting	2	0.9%
Naturopath, Co-worker, Another CAM provider, Significant other, Health food store	1 each	0.4% each

Note: respondents could provide more than one answer

Table 8. Information Sources About CAM

	N= Number of people	Percentage %
<u>CAM Resources</u>		
Book/pamphlet/professional journal	32	20.2%
Health Care Provider	27	17%
Internet	23	14.5%
Magazine	23	14.5%
Friend	21	13.3%
Family Member	17	10.7%
TV/radio/newspaper	11	6.9%
CAM provider	2	1.3%
Significant other/partner, Health food store	1 each	0.6% each

Note: respondents could provide more than one answer

Level of Health Literacy about CAM

The second research question in this study was what is the level of health literacy about CAM in adults residing in the Flathead County of Montana. In order to assess the health literacy level about CAM, the questionnaire included a ten item quiz. This tool was created by the researcher and validity and reliability have not been established. Each quiz question was a true or false statement made about a particular CAM therapy, see

questions #34-43 in the survey in Appendix A. The quiz was graded and participants who scored a 0-3 correct answers were categorized as Below Average, participants who scored 4-7 correct were categorized as Average, and participants who scored 8-10 correct were categorized as Above Average. If a participant skipped or left a question blank in the quiz it was considered incorrect. Two questions not answered by 37 participants each were regarding reiki and chelation therapy. See Table 9 for the distribution of Health Literacy Levels about CAM.

Table 9. Health Literacy Levels about CAM for Flathead County Adult Residents

	N= number of people	Percentage %
Below Average	9	9.8%
Average	49	53.3%
Above Average	34	37%

Note: Below Average=0-3 answers correct. Average=4-7 answers correct. Above Average=8-10 answers correct.

In addition to the quiz, participants were asked to identify if they knew of any side effects or adverse effects to the CAM therapies they utilized, and only 7 out of the 92 participants responded to that question. Furthermore, among those who responded to this question, the most common response was “none”. The few participants who did respond gave generic responses such as, “I know taking too much is bad for you.” Only one respondent gave specific examples of adverse reactions or side effects such as herbal estrogen can increase your risk for breast cancer and some herbal medications may increase your bleeding time.

Relationship between Health Literacy Level about CAM
and Sociodemographics

The third research question in this study was is there a relationship between the level of health literacy about CAM and selected factors such as age, gender, marital status, and use of CAM among adults residing in Flathead County, Montana. In order to identify if there was a relationship between health literacy about CAM and selected sociodemographics, chi-square tests were used. Specifically, the relationships between the health literacy level and age, gender, marital status and use of CAM (including self-directed) among the participants was evaluated in separate chi-square procedures. None of the relationships examined were found to be statistically significant. As can be seen in Table 10, none of the p values were less than or equal to 0.05, but in terms of closeness of achieving statistical significance, self-directed CAM use was closest (p value .125) and companion status was farthest away (p value .861).

Table 10. Relationship among Health Literacy Level and Selected Sociodemographics

	Pearson Chi Square	df	p value
Age	9.272	6	.159
Gender	4.003	2	.135
Companion Status	3.961	8	.861
CAM Provider use	2.975	2	.226
Self Direct CAM use	4.161	2	.125

CHAPTER 5

DISCUSSION

Introduction

The purpose of this study was to explore the health literacy about CAM among adult residents of Flathead County, Montana. The research was designed to answer the following three questions 1) What resources do residents of Flathead County use to get their health information? 2) What is the level of health literacy about CAM in adults residing in the Flathead County of Montana? 3) Is there a relationship between the level of health literacy about CAM and selected factors such as age, gender, marital status, and use of CAM among adults residing in Flathead County, Montana? The findings of this study indicate that Flathead County residents get their health information from multiple sources including their primary care provider, friends, family members, the internet, and multiple reading materials. The data also revealed that greater than half of the Flathead County residents were rated as Average for their health literacy level according to this study's health literacy about CAM quiz. Lastly, the results of this study did not identify a relationship between age, gender, marital status, and use of CAM with regards to the level of CAM health literacy of the participant.

Margaret Newman's Health as an Expanding Consciousness was utilized as the conceptual framework for this study. This framework helped guide this study by enabling the researcher to recognize that disease or just the need to be more conscious of the person-environment interaction will encourage a person to seek out CAM. Much of

the premise behind CAM modalities is to explore, harvest, and maintain that inner self energy, possibly using it for fighting disease or health maintenance. Newman believes the individual is a pattern of energy attempting to maintain a harmonious union between self and the environment along the continuum of a non-diseased state to a diseased state.

This chapter includes a discussion of the answers to this study's research questions and how these findings compare to existing data in the literature review. As identified earlier in Chapter 2, currently there is no valid and reliable tool to assess health literacy about CAM. Therefore, a comparison of health literacy levels about CAM among adult residents of Flathead County with other communities cannot be made at this time. The limitations of this study and the implications of the findings for healthcare providers and for future nursing research and practice are also discussed.

Evaluation of Results

Demographic and Sociodemographic Measures

The demographic data collected regarding gender, age, and race is to some extent similar to the overall characteristics of the Flathead County population. According to the 2005 American Community Survey, 49.3% of Flathead County residents are male and 50.7% are female (U.S. Census Bureau, 2005). The gender distribution of the sample population was 35.9% male and 63.7% female. Adults 18 years and older (77.8%) and adults 65 years and over (12.5%) reveal the age characteristics of Flathead County according to the 2005 Survey. In this study, 67.7% of the participants were in the age category of 18-59 years of age and 31.9% were in the age category of 60 years and older. The Caucasian race makes up 95.8% of the Flathead County population, with another

1.1% reflecting the two or more races category and 1.4% the Hispanic or Latino (of any race) category (U.S. Census Bureau, 2005). The study yielded almost exactly the same race distribution with 97.8% Caucasian, 1.1% mixed Caucasian/African American, and 1.1% Mexican American.

Other demographic characteristics similar to the 2005 American Community Survey results included income, education level, and marital status. The median household income is \$39,942 and the median family income is \$44,882 for Flathead County according to the 2005 Survey (U.S. Census Bureau, 2005). This study found that 51.1% of participants had an income level of \$40,000 or more. Regarding education for ages 25 and over, the 2005 Survey found 33.1% had attained a High School diploma or equivalency, 15.5% had a Bachelors degree, and 7.1% had a Master's degree or higher (U.S. Census Bureau, 2005). The education of participants in this study deviated from the census results with 26.7% having a High School Diploma/GED, 34.6% had a Bachelor's Degree, and 20% had achieved a Graduate degree or higher. The 2005 Survey (U.S. Census Bureau, 2005) also reported 59.5% of males and 57.8% of females were married in Flathead County and the study found 68.5% of the participants were married.

Sociodemographic Characteristics of CAM Users

Previous research has found the highest prevalence of CAM use among the middle-aged, 45-65 years old, white, female, educated beyond high school, and those who have a socioeconomic status considered middle income (Al-Windi, 2004; Eisenberg et al., 1993 and 1998; Astin, 1998; Cauffield, 2000; Bausell et al., 2000, Gryzwacz et al., 2005). While this study did not evaluate relationships between sociodemographics and

CAM users, it should be noted the majority of the participants of this study were female (63.7%), aged 40-59 (54.9%), white (97.8%), held a bachelors degree (35.6%), and had an income of \$40,000 or more (55.3%) (See Table 1).

Other notable associations between the study findings and the existing literature were the reasons for using CAM providers and self-directed CAM. Chronic pain was found in the literature as a chief cause for utilizing CAM and the study revealed musculoskeletal pain as the most commonly cited reason for utilizing CAM providers and self-directed CAM (Refer to Tables 2 and 3). Moreover, the study results found that self-directed CAM was not utilized for a health problem alone as compared to CAM provider use. It was used either for health maintenance alone or both health maintenance and a health problem. This type of self-directed CAM user could be described as the “health conscious consumer” discussed by Dutta-Bergman (2003). Health conscious consumers are active participants in their health care who seek out and engage in healthy lifestyle behaviors. Self-directed CAM implies using a CAM modality on your own and the participants in this study did so with health maintenance in mind.

Resources Used to Obtain Health Information

Nichols, Sullivan, Ide, Shreffler-Grant, & Weinert, (2005) found that physicians and nurse practitioners were the primary resources patients used to obtain health information but they often supplemented this information with other materials such as books and pamphlets. One of the largest studies evaluating how people get their health information was conducted by the Agency for Healthcare Research and Quality (AHRQ). This agency conducted this study twice, once in 1996 and again in 2000. Both surveys

found that the public relies on recommendations of friends, family, and health professionals they know to gather health information and make health choices (www.ahrq.gov/qual/kffhigh00.htm). The majority of participants in the study reported here chose their health care provider as their resource for information about health, but when it came to obtaining information about CAM, a book/pamphlet/professional journal was chosen first with many other resources closely following.

The 2000 AHRQ survey also found people were wary of health website information, but it noted that 28% said they would go online in the future to get this type of information and 38% said they had “some “ trust in health websites about prescription drug information (www.ahrq.gov/qual/kffhigh00.htm). The current study found the internet was chosen second as a resource for obtaining health information and third as a resource for obtaining CAM information.

The National Assessment of Adult Literacy (NAAL) reported on health information resources as well and correlated that to health literacy levels in their 2003 report, “The Health Literacy of America’s Adults”. The assessment found that adults with Below Basic or Basic health literacy were less likely than adults with higher health literacy to obtain health information from written resources such as newspapers, magazines, books, or the internet. Those with lower health literacy scores used radio and TV to get most of their health information (www.nces.ed.gov/NAAL). This relationship was not evaluated in this study. The current study grouped newspaper with TV and radio as a choice to circle for information sources used about health problems and information

sources about CAM, but the findings of the NAAL report should be noted for future research concerning strategies about consumer health education.

Health Literacy about CAM among adults of Flathead County

Based on the result of the health literacy about CAM quiz developed for this study, more than half of the participants were classified as Average and almost forty percent were classified as Above Average according to the grading criteria. These results suggest that the individuals who participated in this study had a previous interest in CAM, used CAM, and therefore had some knowledge regarding the different modalities.

As discussed in the previous chapter, the two questions skipped by a large portion of the participants were about reiki and chelation. These two therapies are not as common as massage, chiropractic, or acupuncture. Just as is conventional medicine, CAM is very diverse with a myriad of treatments for different ailments. It is challenging to be well informed about all types of CAM and yet an individual may have a detrimental health care outcome if not properly informed. Again, this supports the need for health literacy about CAM.

As reported in the previous chapter, almost two thirds of the participants in this study had Average or Below Average health literacy levels about CAM. As a comparison, the health literacy scores reported in the 2003 National Assessment of Adult Literacy (NAAL) study is reviewed. The NAAL study, which utilized a four point scale of Below Basic to Proficient, found 53% of adults (age 16 and older) had Intermediate health literacy, 22% had Basic, and 14% had Below Basic. Dr. Rima Rudd, at the Harvard School of Public Health, had concerns that an Intermediate health literacy level

is far from good as health instructions are difficult to understand because of the medical jargon. She pointed out that most adults in the Below Basic category would not be able to read the dosage chart on a package of over-the-counter pediatric cold medicine and determine the amount needed to give a child (www.iha4health.org). This can be applied to the results of this study, where even though 53.3% scored Average, this knowledge level may not prevent a poor health outcome resulting from illiteracy about CAM. As noted in the literature review, Williams et al. (1998) found health literacy was a stronger predictor of health status than socio-economic status, age, or ethnic background.

Relationship Between Sociodemographic factors and Health Literacy Levels

There were no significant relationships found between health literacy levels about CAM and selected sociodemographic variables as reported in Chapter 4. There are no published studies to compare the association between health literacy about CAM and sociodemographic data but again, the 2003 NAAL health literacy report found differences between gender, age, and education regarding health literacy levels but it did not find there were any significant relationships (www.nces.ed.gov/NAAL). For example, women scored six points higher on their health literacy score than men, participants aged 65 and older had the lowest scores, and individuals with an education of less than high school scored most often in the Below Basic range. The NAAL report suggested that future studies will allow for identifying trends in the data (www.nces.ed.gov/NAAL).

Limitations

There were limitations to this research study, three of which are mentioned here. First, this study only focused on adult residents of Flathead County, Montana which may limit the ability to generalize the results to adults living in other geographic areas of similar size and to children or adolescents. Second, there were a limited number of participants, which may have hindered the ability to identify significant associations between the selected factors and health literacy levels. Third, Flathead County may have a greater or lesser supply of CAM providers than a county of similar population which may have resulted in an over- or under-estimate of CAM use than is usual in rural areas.

Implications

The results of this study suggest there are CAM users in Flathead County, Montana, their resources for health information are variable, and their health literacy level is Average. There are several implications for nursing research and practice identified as a result of the findings of this study.

Nursing Research Implications

There is a lack of literature regarding CAM health literacy indicating additional research is needed on this topic. It has only been within the last ten years that health literacy levels have been assessed and acknowledged. Nursing research will need to focus on evaluating CAM health literacy. In consideration of the rising use of CAM and the

desire of health care providers to prevent poor health outcomes, focusing on researching CAM health literacy is critical.

There is not a valid and reliable tool to measure health literacy levels about CAM. In order for continued exploration of CAM health literacy levels, it will be necessary to create a tool to accurately assess an individual's knowledge of CAM. Use of this tool will allow the identification of any pertinent relationships found between CAM health literacy levels and selected sociodemographic factors. Identification of significant relationships will assist investigators to tailor tools used to study CAM health literacy and educational intervention strategies for different populations.

The variability of resources used for obtaining health information and CAM information also has significance for research. Future nursing research will need to continue to identify the resources patients use for obtaining information about health problems and about CAM as well as determining if there are differences in sources of information between the two. This will help health care providers tailor their educational strategies for either conventional medicine or CAM.

Nursing Practice Implications

While this study focused on the health literacy about CAM of health care consumers, knowledge about the health literacy about CAM amongst providers is equally lacking. Primary care practitioners, such as nurse practitioners are viewed as more holistic providers and as such have expanded responsibilities. Nurse practitioners should be aware of their title, the responsibility it bestows and of the possible assumptions that patients make about their knowledge level of all forms of medicine. Nurse practitioners

need to assess their own knowledge base about CAM and determine where they can obtain evidence based practice information about CAM.

The second implication for nursing practice is that the nurse practitioner needs to evaluate his/her own feelings about CAM use and recognize their presentation of information to patients based on that bias. It is important for the nurse practitioner to present CAM education in an unbiased format and inform patients of the risks and benefits of their CAM health care choices just as they would for conventional medicine. In addition, the nurse practitioner must recognize the effect of their response to patient-gathered information on CAM; maintaining a trusting relationship with the patient is essential for guiding a patient towards positive healthcare outcomes.

The third nursing practice implication is the need to utilize the knowledge already available about health literacy levels so that educational pamphlets, posters, and other materials about CAM are tailored to the patient population of that particular healthcare setting. Also, directing patients to reputable resources on CAM whether printed material, workshops/seminars, or websites for information is important.

The nursing research and practice implications should raise awareness that there is work to be done in educating advanced practice nurses and appropriately educating patients in order to provide holistic, quality care.

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APPENDICES

APPENDIX A

CAM UTILIZATION AND HEALTH LITERACY ABOUT CAM MAIL SURVEY

EXPLORATION OF KNOWLEDGE ABOUT COMPLEMENTARY AND ALTERNATIVE MEDICINE (CAM)

Thank you for participating! Answering the following questions will help me gather the necessary information to complete this study.

THE FOLLOWING QUESTIONS ARE ABOUT YOUR HEALTH AND HEALTH CARE

1) Do you have any significant health problems? **(circle one)** 0 NO 1 YES

2) If you answered YES, what are your health problems: **(list here)**

- a) _____
- b) _____
- c) _____
- d) _____

3) On a scale of “1” to “5” with “1” being POOR and “5” being EXCELLENT, how is your health in general? **(circle one)**

1 _____ 2 _____ 3 _____ 4 _____ 5 _____
POOR FAIR GOOD VERY GOOD EXCELLENT

4) Do you have a healthcare provider who takes care of most of your health care needs? **(circle one)**

0 NO 1 YES

5) Is the health care provider you see most frequently **(circle one)**

- a) Physician (Doctor)
- b) Nurse Practitioner
- c) Physician’s Assistant
- d) Clinic Staff or Provider Group in Same Practice
- e) Other: (Specify) _____

6) In the last year, how many times have been to see your regular health care provider? **(list # of visits)**

_____ number of visits

7) How far do you travel one-way to see your health care provider?
(list # of miles)

_____Number of miles

8) Using a scale of “1” to “5” with “1” being EXTREMELY DIFFICULT and “5” being “EASY”, how easy is it for you to go see your health care provider (this includes getting a ride, distance, road conditions, etc.) (circle one)

1 _____ 2 _____ 3 _____ 4 _____ 5
EXTREMELY VERY DIFFICULT DIFFICULT FAIRLY EASY EASY
DIFFICULT

9) Using a scale of “1” to “5” with “1” being POOR and “5” being EXCELLENT, how would you rate your care from your health care provider? (circle one)

1 _____ 2 _____ 3 _____ 4 _____ 5
POOR FAIR GOOD VERY GOOD EXCELLENT

10) Now in terms of emergencies, such as serious cut or a bad fall, how many miles do you need to go for emergency medical care and how long does it take to travel? (list # of miles and travel time in minutes/hours)

_____ NUMBER OF MILES (ONE-WAY)
_____ APPROXIMATE TRAVEL TIME (Standard road conditions; one-way)

11) Where would you go for emergency care? (circle one)

- a) Hospital
- b) Provider’s office
- c) Clinic
- d) Other: (Specify)_____

**THE FOLLOWING QUESTIONS ARE ABOUT
COMPLEMENTARY AND ALTERNATIVE CARE (CAM)**

12) Have you seen a CAM provider in the past year? (Includes chiropractor, acupuncturists, massage therapists, herbalists, biofeedback or other)
(circle one)

0 NO 1 YES

13) What kinds of complementary providers have you seen in the past? **(list here)**

- a) _____
- b) _____
- c) _____
- d) _____

14) If you listed CAM providers in Q#13, how many times did you or do you see that provider? **(for example, list once, once a year, twice a week etc...)**

- CAM provider (a) _____
- CAM provider (b) _____
- CAM provider (c) _____
- CAM provider (d) _____

15) Do you see CAM providers for health maintenance, health problems or both?
(circle one)

0 Health Maintenance 1 Health Problems 2 Both

16) If you see CAM providers for health problems, **please list the problems.**

- a) _____
- b) _____
- c) _____
- d) _____

17) Do you use any self-directed CAM practices (for example, meditation, vitamin therapy, wearing copper bands, yoga, herbal therapy, home remedies)?
(circle one)

0 NO 1 YES

18) If you answered YES to Q#17, what kinds of self-directed CAM practices do you use? **(list here)**

- a) _____
- b) _____
- c) _____
- d) _____

19) If you listed any self-directed practices in Q#18, list how often you use that practice (for example, meditation – daily or yoga – once a week, herbal remedy- once) **(list time frequency here)**

- For self-directed practice: (a) _____
(b) _____
(c) _____
(d) _____

20) If you do use self directed practices, do you use them for health maintenance, a health problem(s) or both? **(circle one)**

0 Health Maintenance 1 Medical Problem(s) 2 Both

21) If you do use self directed (CAM) practices for health problem(s), **please list the problem(s)**

- a) _____
- b) _____
- c) _____
- d) _____

22) If you use any type of CAM including self-directed practices, is your regular health care provider aware you are doing so? **(circle one)**

0 NO 1 YES

23) If you chose “No” why did you choose not to share this information? **(list reason(s) here)**

24) For each CAM provider you use and each self-directed practice, how did you find out about this practice? (**list practice and how you found out about it**)

Practice	How I found out
CAM providers _____ /	_____
_____ /	_____
_____ /	_____
Self-Directed _____ /	_____
_____ /	_____
_____ /	_____
_____ /	_____

**THE FOLLOWING QUESTIONS ARE ABOUT YOUR KNOWLEDGE ABOUT
COMPLEMENTARY AND ALTERNATIVE MEDICINE**

25) In the past 12 months have you taken classes, seminars, workshops or participated in any educational events relating to CAM (including reading books, pamphlets, searching on internet)? (**circle one**)

0 NO 1 YES

26) If you answered yes to Q#25, what type of educational opportunity did you participate in and for what type of CAM therapy (for example, yoga workshop, book on herbs, etc.) (**Please list**)

- a) _____
- b) _____
- c) _____
- d) _____

27) Did you use a CAM provider or try any self-directed practices because a partner/significant other, family member, friend, coworker or neighbor suggested it? (**circle one**)

0 NO 1 YES

28) If you answered “Yes” to Q#27, what CAM provider or self-directed practices did they suggest and who suggested it (label person as “friend” etc.)
(please list)

- a) _____
- b) _____
- c) _____
- d) _____

29) Relating to the question #28, did the person who suggested you try the CAM therapy research it (for example, get information on it from book, pamphlet, newspaper/magazine article, internet, friend, CAM provider themselves, personal experience, etc...) prior to their use or recommending it and if so, do you know how?

Answer from a)	How information was obtained?
_____	_____
Answer from b)	_____
_____	_____
Answer from c)	_____
_____	_____
Answer from d)	_____
_____	_____

30) How do you normally obtain your information about health problems? (**circle all that apply**)

- a) from your health care provider
- b) from another person besides your care provider (Specify who: _____)
- c) from the TV/radio/newspaper
- d) from a magazine
- e) from the internet
- f) from a book or informational pamphlet/professional journal

31) How do you obtain information about CAM? (**circle all that apply**)

- a) from your health care provider
- b) from another person besides your care provider (Specify who: _____)
- c) from the TV/radio/newspaper
- d) from a magazine
- e) from the internet
- f) from a book/informational pamphlet/professional journal

32) If you listed you use any CAM providers and/or self directed practices, are you aware of any side effects/adverse effects to the treatment method(s) you use?
(please list CAM therapy/self directed practice and adverse effect if any)

- a) _____
- b) _____
- c) _____
- d) _____
- e) _____
- f) _____
- g) _____

33) Has your regular primary care provider ever discussed complementary and alternative medicine with you? (circle one)

0 NO 1 YES

34) The herbal medicines and supplements sold over the counter are regulated by the Food and Drug Administration (FDA)
(circle one)

0 True 1 False

35) Biofeedback trains a person to voluntarily control bodily functions, such as blood pressure, muscle tension or heart rate (circle one)

0 True 1 False

36) After a massage you should drink lots of water to help your system detoxify (circle one)

0 True 1 False

37) A chiropractor manipulates your arms and legs (circle one)

0 True 1 False

38) Herbal medications do not react with prescription medications because they are natural (circle one)

0 True 1 False

39) If you are getting a massage, the massage therapist does not need to know all of your medical problems **(circle one)**

0 True 1 False

40) Reiki is an ancient Tibetan-Japanese treatment where the practitioner holds his hands either gently on or just above the patient's body in an effort to induce healing. **(circle one)**

0 True 1 False

41) Aromatherapy is the practice of using scents of essential natural oils to make people smell nice. **(circle one)**

0 True 1 False

42) Acupuncture practitioners place hair-thin needles into meridians in the body to prevent or treat illness. **(circle one)**

0 True 1 False

43) Chelation therapy removes toxins from the body via the bowels just like colonics therapy. **(circle one)**

0 True 1 False

AND NOW I NEED TO KNOW A LITTLE ABOUT YOU

44) What was your age on your last birthday? _____

45) What is your gender? **(circle one)**

male or female

46) What is your race? **(circle one)**

- a) Caucasian/White
- b) African American
- c) Native American Indian
- d) Asian
- e) Other (Specify)_____

47) Is your ethnicity Hispanic/Latino? **(circle one)**

0 NO 1 YES

48) What town do you live in? _____

49) How long have you lived in Montana? _____mths/years

50) Are you (circle one)

- a) Single
- b) Married
- c) Widowed
- d) Separated/Divorced
- e) Common Law
- f) Living Together

51) Are you employed? **(circle one)**

0 NO 1 YES

52) If you answered YES to Q#51 do you work part-time or full time? **(circle one)**

53) If employed, what do you do for work? _____

54) What is your highest education level completed? (circle one)

- a) Less than High School
- b) High School diploma/GED
- c) Certificate/Apprentice program
- d) Associate Degree
- e) Bachelors Degree
- f) Graduate Degree or higher

55) Counting all sources of income, including wages, interest, government payments, gifts, etc, what is an estimate of your TOTAL FAMILY income during the last year, before taxes? **(circle one)**

- a) Less than 8,000
- b) \$8,000 - \$19,000
- c) \$20,000 - \$29,000
- d) \$30,000 - \$39,000
- e) 40,000 or More
- f) Declined to answer

56) If you went to see your health care provider how would most of the bill be paid?
(circle one)

- a) Self-pay
- b) Medicare
- c) Medicaid
- d) Other government (Veterans, Indian Health, etc.)
- e) Private insurance
- f) Other:_____

57) If you went to see your complementary health care provider how would most of the bill be paid? (circle one)

- a) Self-pay
- b) Medicare
- c) Medicaid
- d) Other government (Veterans, Indian Health, etc.)
- e) Private insurance
- f) Other:_____

58) Do you have internet access? (circle one)

0 NO 1 YES

APPENDIX B

COVER LETTER

Dear Flathead County Resident,

I am writing you to ask you to participate in a research study. The purpose of the study is to explore knowledge about complementary and alternative medicine (CAM) such as herbs, chiropractic, massage, etc. Your name was randomly selected from the telephone directory for Flathead County.

I am a Nurse Practitioner student at the Montana State University and this study is part of the research required for my masters degree. CAM is of interest to me because I realize there are many alternatives available to the individual for health maintenance and those with medical problems, but I also want people to make safe and informed choices. I plan to practice as a Nurse Practitioner in Flathead County when I graduate and want to incorporate into my practice educating my patients regarding all their health choices available.

Enclosed is an **Exploration of Knowledge about CAM survey** that should be completed by a person 18 years or older in your household who can best complete the survey. The survey asks general questions about your health, your health care experiences and experiences with CAM.

Your participation is entirely voluntary. Your responses will remain **strictly confidential**, the results will be reported in group form, and no one will see your responses except me and my thesis committee chair, Jean Shreffler-Grant, Ph.D., RN. You do not have to participate, you are free to stop at any time, and you are free not to answer any questions you do not wish to answer. The potential benefit to you is knowing that you have helped improve our knowledge about what people know about CAM and what can we do to increase their knowledge level.

If you decide to participate, please complete the survey and return it in the enclosed envelope **within one week**. If you have any questions about this study, you may contact Jean Shreffler-Grant or myself, using the address or telephone number listed below. If you decide not to participate, and do not wish to be contacted further, you may return the blank survey or call Dr. Grant or myself. Thank you very much for your help with this project.

Kind Regards,

Jennifer O'Neill
1201 North Bank Court
Columbia Falls, MT 59912
(406) 471-2029

Jean Shreffler-Grant, Ph.D., RN
Montana State University
College of Nursing, Missoula Campus
Missoula, MT 59812
(406) 243-2540