

THE NURSE PRACTITIONER'S USE OF PRINTED HEALTH EDUCATION
MATERIALS: A PROCESS OF SELECTION AND EVALUATION

by

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of

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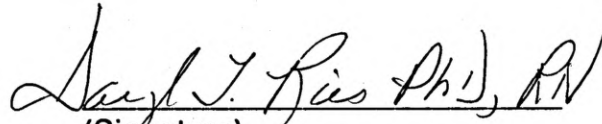
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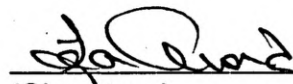
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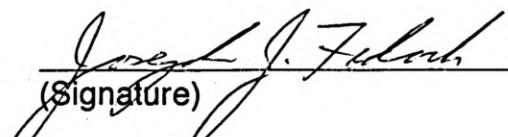
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ABSTRACT

Client education is an integral part of every nurse practitioner-client encounter. Given adequate information, skills, direction and support, the client will be better able to take responsibility for independent health care. Used as part of the education plan, printed materials are an economical and effective medium to stimulate discussion and impart information that contributes to self-care. Orem's Self-Care Framework served as the guiding framework for understanding the importance of education in health care.

Selecting accurate and appropriate health education materials from the overabundance available is a dilemma faced by both the nurse practitioner and the client. The need exists for a method to evaluate these materials so the most appropriate ones can be selected for use. This project was undertaken to provide the nurse practitioner with such a process. The goal was to begin development of a resource manual which will be part of a collection of resources for the nurse practitioner to use for client education. Because menopause is a common health issue for which the nurse practitioner may provide health information, materials related to menopause were selected in this process.

An extensive literature review revealed the menopausal issues that would be addressed in client education. The review also revealed characteristics of both the learning process and content that would need to be considered in selection of education materials.

An evaluation tool was identified and applied to three pieces of printed materials by a panel of three expert nurse practitioners and the author. The panel also evaluated the tool for usefulness. The process of using an expert panel for materials selection and evaluation was addressed by the author. Results of the scores from the evaluation tool allowed identification of strengths and weaknesses of each piece, improving the nurse practitioner's ability to more appropriately select them in practice. All three pieces were judged to be of adequate quality for inclusion in the resource manual. The expert nurse panel judged the evaluation tool to be useful and valid. Several weaknesses of the tool were identified, and recommendations for revisions that would make it easier to use were suggested. The revised tool would need to be tested for validity and reliability. The use of an expert panel for material selection and evaluation on a larger scale was judged inefficient and impractical for consistent use. The process of resource selection described in this project has applicability within the nurse practitioner's role in all settings.

CHAPTER 1

PROBLEM STATEMENT

Massive amounts of health information are being generated in this era of "knowledge explosion". Abundant, printed education materials are available for both the health care provider and the client. Printed education materials are economical and effective media available to respond to the need for client education in times of health care cost containment (Bernier, 1993). However, the large selection of books, brochures, educational programs and newsletters in print makes it difficult for the health care provider and the client to choose appropriate and accurate educational materials.

Quality, printed education materials must contain accurate information that is presented in a manner that will be appealing, useful and acceptable to the client being served. Evaluating and selecting appropriate printed educational materials is the first step in making available an important adjunct for client education. An evaluation tool assists the nurse practitioner in the selection process.

One example of the clientele in primary care for whom the nurse practitioner may provide education is menopausal women. Many women do not know what to expect during menopause but need to have adequate knowledge and understanding of the significance of this major life event to maintain a healthy body (Millonig, 1996). Adequate knowledge is the basis for an informed decision making process for these women. Printed materials may

be very effectively used as part of client education as the nurse practitioner manages the health care of women during menopause.

The purpose of this project was to begin development of a resource manual for the nurse practitioner to use for menopause related health education. For the purpose of this paper, the entire perimenopausal period is the context for which menopause was applied. The outcome of this project was to identify a selection of materials that could be used by the family nurse practitioner for client education. The appropriateness of an evaluation tool for use by the nurse practitioner in choosing printed education materials was tested. A process for printed material selection and evaluation was developed and evaluated.

Background and Significance

The Meaning of Menopause

Menopause has long been recognized as a unique time in a woman's life. Before the late 1930s, menopause had frequently been viewed as a time of physical disruption, depression, disease, and the beginning of old age (Hellerstein, Hume & Offen, 1982). With the development of synthetic estrogen in 1938, menopause began to be characterized as a deficiency state with defined symptoms. Hormone replacement was the prescribed treatment (Fishbein, 1992).

Women today may view menopause as a natural transition related to aging, a set of expected symptoms (Padonu et al., 1996), a threat to attractiveness, health, and femininity (Woods, 1994), an opportunity for personal growth, a freedom from potential pregnancy, or an illness requiring treatment.

The meaning, significance, perception, and expression of the menopause experience also varies cross-culturally (Padonu et al., 1996).

Menopause occurs at midlife for most women, adding to the impact of age-related physical changes, and psychological and social role changes. Health related behaviors may be affected by the meanings women attribute to the changes of this phase of life (Woods, 1994). These perceptions will impact the health and well being of women and must be considered in treatment and education interventions.

Description of Menopause

Derived from the Greek word *mene*, meaning month, and *pause*, referring to cessation of the monthly cycle, menopause can be rigidly referred to as the time of the last menstrual bleed (Cook, 1993). It is characterized by increased levels of follicle-stimulating hormone (FSH) and cessation of menstruation for a one year period, allowing diagnosis only in retrospect.

Menopause is a phenomenon with biologic, health, and cultural dimensions (Padonu et al., 1996). For women who survive to midlife, menopause is a universal experience. It is a transition from a reproductive to a nonreproductive state, a developmental stage in a woman's life, and a normal physiological event. There are, however, many implications for the menopausal woman related to her health and well-being.

The sequence of events progressing to menopause can begin for a woman in her 20's or 30's when ovarian estrogen production begins to taper off. This time preceding, and the year following permanent cessation of menses is

called the perimenopause. This paper, and most education materials, are referring to this entire time period when discussing menopause.

More important than the cessation of menstruation is the decrease in circulating estrogen concentration which results from the loss of functioning ovarian follicles. These hormonal shifts cause a woman to experience a variety of physical symptoms, ranging from minor discomforts to conditions that interfere with lifestyle and well-being (Cook, 1993). Many body tissues and organs are affected by the lower level of circulating estrogen. For example, increased morbidity and mortality from coronary artery disease and osteoporosis, and debilitation due to urinary incontinence are associated with menopausal hormone changes.

Although menopause is an inevitable part of a woman's life, unique health care considerations related to this time need to be addressed. Women experience a wide variety and intensity of symptoms. Some symptoms are easily managed with self-care strategies, naturopathic remedies, folk remedies, behavioral changes, or dietary adjustments. Other symptoms require pharmaceutical treatment and other preventive modalities. Hormone replacement therapy is the most commonly prescribed treatment for symptoms of menopause, and for reducing susceptibility to the aforementioned organ changes that can cause morbidity and mortality. Its use, however, remains controversial. Long-term consequences are unknown. Neither a standard protocol for administration of hormone replacement therapy nor one ideal regimen is recognized at this time (Scharbo-Dehaan, 1996).

Self care activities are a cornerstone of women's health care. The health care provider who values self-care will assist women by teaching them how to take responsibility for their own care, and by providing pertinent

information to help women explore their options and choices (McElmurry & Huddleston, 1991).

Theoretical Framework

Health care education for menopausal women can be planned with the understanding that given adequate information, skills, direction and support, a woman will be able to better care for herself during this transition phase. Knowledge promotes growth and enhances coping abilities. The transition phase of menopause allows opportunity for health promotion and prevention related to all aspects of a woman's life.

Orem's Self-Care Framework

Dorothea Orem, nurse theorist, provided a framework to help with understanding of self-care and the role of the nurse in self-care. Orem (1995) described the art of nursing practice as a mode of assistance given to a client. The assistance involves either providing care for a person, helping a person to be independent, or helping a person to learn self-care.

From a nursing point of view, human beings were viewed as needing continuous self-maintenance and self-regulation through the actions of self-care. Self-care requires the management of one's self in an environment which may be stable or changing. Self-care practice includes activities that individuals initiate and perform on their own behalf in maintaining life, health, and well-being. The goal of self-care was to help a client meet one's own needs (Orem, 1995).

Orem delineated ten components which influence a person's ability to perform self-care. Among those were components which may directly impact client education such as an ability to maintain attention, to reason, to make decisions about self-care, to acquire technical knowledge, and motivation, communication and interpersonal skills. Self-care was believed to be learned through interpersonal relations and communication.

A self-care deficit was present when an imbalance existed between a person's ability to produce self-care and the demand or the need for care at that point in time. Self-care was limited by a lack of knowledge, a lack of self-care skills, and inadequate self-care habits. Nurses compensated for a client's limitations for self-care by acting for or doing for that client, guiding and directing, providing physical or psychological support, providing and maintaining an environment that supports personal development, and teaching. Orem further described teaching as helping a person who needs instruction to develop knowledge or skills (Orem, 1995).

Nurse Practitioner Role

The significance of menopause for the nurse practitioner can be viewed from the perspective that a woman may live nearly one third of her life after menopause. Currently about 13 million women in the United States are perimenopausal, and that number is expected to rise to near 19 million by the year 2000 (Li, Lanuza, Gulanick, Penckofer & Holm, 1996). Three and a half million women will reach age 50 each year for the next decade (Wilton & Noonan, 1991). The life expectancy for women has increased significantly since the turn of the century. Now, nearly 90% of American women will live 30

years post-menopause. As the Baby Boomers enter the perimenopause period, women 40-60 years of age will become the fastest growing segment of the population, increasing the demand for mid-life health care.

Women's health has been redefined as encompassing the entire life span, not just child-bearing or menopause issues. Women's health care includes health promotion, maintenance, and restoration. Expert health care must be grounded in an awareness of women's everyday lives, including an awareness of the diversity of women. Expert women's health care embodies a variety of services delivered by a range of health care providers including nurse practitioners, and is accessible to all women. Health care across the lifespan includes services for menopausal-related transitions and symptoms (American Academy of Nursing Expert Panel on Culturally Competent Nursing Care, 1992).

Nurse practitioners will become providers for women's health in greater numbers in the near future (Ferda, 1994; Fishbein, 1992). The focus of nurses is the relationship of human beings to the environment, and to their experience and response to events or situations related to health and illness (American Academy of Nursing Expert Panel on Women's Health, 1997). Understanding women in such a holistic manner allows nurses to contribute appropriate health education, promotion, and prevention interventions to facilitate behavior changes for healthier life-styles and to improve women's abilities to care for themselves.

Accurate, appropriate, culturally sensitive, personalized and useful information related to menopause and midlife health is necessary to help women make choices that will positively impact their health. The holistic approach to health care provided by the nurse practitioner extends the

perspective of menopause beyond that of a hormone deficiency and includes education and support for all issues of midlife women. Lasting changes in self-care can be motivated by empathetic responses of nurses to physical and emotional concerns of menopause (Cook, 1993).

Education Issues

An increased interest in preventive health care by women of menopausal age is apparent by the spate of popular books currently on the market. Women desire health information. They want to know what they can do to improve the quality of their lives as they age (Wilton & Noonan, 1991). The importance of health education is acknowledged by Healthy People 2000 objectives for improvement of the nation's health. This document acknowledges the importance of health education by setting many objectives in which education is clearly the vehicle of transmission (Fitzpatrick, Stevenson & Polis, 1994). Nurses will be instrumental in providing this essential health promotion and disease prevention information (Wilton & Noonan, 1991).

A woman should be able to make an informed selection of what she needs from a wide variety of health care services and providers. The lack of knowledge about health and illness once rendered women powerless to negotiate or question even at a basic level. Now that such negotiations and involvement are being encouraged, women have more confidence to question and discover for themselves what may be the best decisions to maintain or improve their health (Webb, 1994). Control over one's body is a basic right that extends into menopause. Lack of access to useful information about the

experience of menopause compromises the control that a woman has over her body (McElmurry & Huddleston, 1991).

Nurses are relying more and more on printed education materials as part of the health education they provide. When making the decision to use printed education materials, the nurse practitioner must consider the strengths and shortcomings of this form of education. The reading ability of the client needs to be considered (Estey, Kemp, Allison & Lamb, 1993), as well as the ability of the client to comprehend what is read (Estey et al., 1993; Owens, Johnson, Frost, Porter & O'Hare, 1993). Learning outcomes will be influenced by characteristics of the printed material such as readability score, attractiveness, accuracy of content, clarity, structure, organization and format. Other characteristics which may influence learning outcomes include cultural sensitivity and appropriateness of the material for the target population, as well as acceptability, persuasiveness, ownership, usefulness, and the stated learning objectives (Bernier & Yasko, 1991; Estey et al., 1993; Gibson, Ruby & Craig, 1991). These characteristics can be evaluated to assist the nurse practitioner with selection of the most appropriate printed materials to use for health education.

Summary

The nurse practitioner is faced with the task of choosing appropriate education materials from large quantities of information as the knowledge base related to all health issues continues to grow. Volumes of information will continue to be available to the nurse practitioner and to the client through a

variety of media. Both the client and the provider will need to make choices regarding what information is accurate, acceptable, and useful.

Nurse practitioners will increasingly become the providers of health care for women. An emphasis on preventive, person-centered, holistic, wellness care services will occur as health care moves away from the biomedical model of "sickness care". Nurses have long been dedicated to holistic care and wellness promotion and will be primary care providers for aging women in the cost-conscious health care delivery system of the twenty-first century (Ferda, 1994). Increased awareness of the positive impact a woman can have on her own health care has resulted in changes within the health care delivery system, and the increased use of nurse practitioners to meet women's health needs (Fishbein, 1992).

The practice of the nurse practitioner may include menopausal women. A need exists for selection and evaluation of printed materials for use with these clients. The purpose of this project was to begin development of a resource manual for health education related to menopause. A process was developed for the nurse practitioner to use in selection and evaluation of printed education materials. The appropriateness of the Health Promotion Project: Materials Evaluation Questionnaire (Gibson et al., 1991) as an evaluation tool for assessing printed materials was critiqued by applying the tool to a selection of materials related to menopause. Materials chosen, and the assessment tool itself were evaluated by an expert panel of nurse practitioners. Results of their critique helped guide the nurse practitioner in selection of quality, useful, appropriate materials which would be part of a resource manual. The manual will be part of a more comprehensive collection of client education materials.

CHAPTER 2

LITERATURE REVIEW

Background and Significance

Historical View

Historically in the United States, women have feared menopause due to the negativity attached to it. Menopause conjured up images of physical disruption and psychologic upheaval for mature women (Cook, 1993; Fishbein, 1992; Hellerstein et al., 1982; Smith-Rosenberg, 1974; Wagner, Kuhn, Petry & Talbert, 1995). Nineteenth century physicians considered menopause as the beginning of a period of depression, of heightened disease incidence, and of early death. Menopause was used as an all-purpose explanation for the increased incidence of disease in the older female, and all of the ills were directly or indirectly considered diseases of the uterus and ovaries. Doctors warned that a woman must treat menopause as the beginning of old age, alter her lifestyle, and retire from the world (Hellerstein et al., 1982; Smith-Rosenberg, 1974).

Prior to the twentieth century, menopause was conceptualized as a physiologic event that could cause disease under certain conditions. These conditions were usually related to social issues which were considered violations by a woman of the physiological and social laws dictated by her

ovarian system. Such violations included a woman being too educated, being sexually indulgent, attempting birth control or abortion, living a lifestyle considered too fashionable, or devoting insufficient attention to the care of her children and husband (Fishbein, 1992; Smith-Rosenberg, 1974).

Physicians considered menopausal depression a result of a woman's perception of no longer being young and attractive (Hellerstein et al., 1982; Smith-Rosenberg, 1974). In a society that values youth and does not respect the aged, menopause might lower one's status in society and diminish self esteem (Fishbein, 1992; Harper, 1994; Wagner et al., 1995). Tradition has valued women primarily for their childbearing ability, leading to beliefs that menopause is unhealthy and requires women to seek medical care and attention (Bernhard & Sheppard, 1993).

There is evidence that some women viewed menopause as a release from the bondage of menstruation and pregnancy, freedom from exposure to the risks and pain of childbearing, and freedom from the physical and emotional demands of childbirth and child rearing. Menopause allowed women to develop their spiritual nature to its fullest (Smith-Rosenberg, 1974).

With the development of synthetic estrogen, menopause began to be described as an estrogen deficient state. Menopause was characterized as a disease with defined symptomatology and estrogen replacement therapy was prescribed as treatment. Technological advances have contributed to the increased life expectancy realized during the last two decades, including treatments for menopause (Fishbein, 1992).

Changing social trends which impact women's health, and thus women's health nursing, are becoming apparent in the literature. Women are increasingly being included in the decision-making roles of government. The

demographics of race and age in the United States are in transition, moving to greater ethnic, racial, and cultural diversity. The population is aging, with projected record numbers of women in the 45-64 year age group by the turn of the century. Health care reform will move health services away from the biomedical model of "sickness care" to holistic person-centered wellness care. More females are becoming health care providers and the utilization of nurse practitioners is increasing (Ferda, 1994; Harper, 1994; Millonig, 1996).

The Meaning of Menopause

Meanings attributed to menopause and aging are a function of the way a woman was socialized to view this phase of life, the value her culture places on youth versus aging, and attitudes of her network of relationships as well as the social support provided. Meanings may also be affected by whether her occupation depends on physical appearance or vigor, and the totality of her earlier experiences. These meanings influence the course of action women take in dealing with symptoms and how they view themselves as women. Personal and social experiences of midlife have health effects that are as important as the biological changes of menopause (Bell, 1995; Harper, 1994; Woods, 1994).

Today women are rejecting the image of menopause as a time of emotional imbalance, depression, and the beginning of the end. Instead, they are beginning to view menopause as a natural stage of life and are creating an image of individual growth, vitality, new opportunities, new roles, and aging with dignity (Cook, 1993; Fishbein, 1992; Wagner et al., 1995; Woods, 1994).

Description of Menopause

Menopause can be described by the physiological hormonal changes that occur and the symptoms that result from the hormonal changes. The following section reviews the literature findings related to the hormonal changes, symptomatology, and treatment. Hormone replacement therapy (HRT) is reviewed in detail due to the frequency of hormone use for menopausal symptoms and the controversies which surround such therapy.

Changing hormone levels. Hormonal levels of menopausal women are variable and unpredictable. As the number of ovarian follicles gradually decreases during perimenopause, secretion of estrogen decreases, and levels fluctuate from day to day. A breakdown of the negative feedback system that controls ovulation and menstruation occurs. Decreased estrogen and sequential progesterone production causes neuroendocrine stimulation, leading to increased secretion of follicle stimulating hormone (FSH) by the pituitary gland (Gleason, 1994; Hammond, 1997; Harper, 1994; Li et al., 1996; Maddox, 1992; Martin, 1995). Androgen levels are reduced and estrogen-to-androgen ratios change. The ovaries eventually lose their ability to respond to this hyperactive state, leading to permanent anovulation known as menopause (Hammond, 1997; Harper, 1994, Martin, 1995).

The perimenopausal period begins in most women by about 45 years of age, but may be as early as the late 30's or as late as the middle 50's. It lasts from 1 to 10 years, with the average being 4 years (Harper, 1994; Li et al., 1996; Maddox, 1992; Martin, 1995). Menopause, or the cessation of menstruation, is the end point in this life phase.

Symptomatology and treatment. The literature consistently identified several signs and symptoms experienced by women at menopause. Treatment modalities varied in the literature from pharmaceutical therapy to homeopathic remedies and lifestyle management.

The first sign of menopause is a change in menstrual bleeding. Menstrual cycles become irregular and unpredictable. Uterine bleeding may become irregular, prolonged, heavy or intermenstrual. These irregular, unpredictable periods may affect a woman's lifestyle. It is unwise for the woman or the nurse practitioner to presume such bleeding is just "menopausal change" as this can also be a sign of significant problems such as cancer (Hammond, 1997; Harper, 1994; Li et al., 1996; Maddox, 1992).

Vasomotor symptoms are among the most commonly described symptoms related to menopause. Hot flashes / flushes have been described as a strong sensation of warmth, skin irritation, and perspiration spreading over the face, scalp and anterior thorax that last from a few seconds to minutes and occur frequently with varying intensity. Hot flushes often increase in frequency and severity in hot and humid weather, in confined spaces, or with ingestion of alcohol, spicy foods, and caffeine. Other symptoms associated with vasomotor symptoms may include cold sweats, chills, insomnia, fatigue, nervousness, and depression. Factors such as stress, the length of perimenopause and history of premenstrual tension may influence the occurrence of vasomotor symptoms (Hammond, 1997; Harper, 1994; Li et al., 1996; Maddox, 1992; Martin, 1995).

Problems associated with hot flushes include sleep disturbances and disruption of lifestyle and function. A woman may be able to adapt by modifying diet and behaviors, reducing room temperatures and wearing light, layered clothing. Estrogen therapy has been shown to be useful in treating vasomotor

symptoms, as have beta blockers and antiadrenergic agents. Vitamin E, vitamin B complex, and homeopathic remedies such as ginseng tea, don quai, over-the-counter progesterone creams, and bee pollen also have been reported to decrease vasomotor symptoms, as have biofeedback and other relaxation techniques (Gleason, 1994; Hammond, 1997; Harper, 1994; Li et al., 1996; Martin, 1995; Scharbo-Dehaan, 1994).

Urogenital tissue atrophy results from the reduction of endogenous estrogen after menopause. Atrophy of the vulva, shortening and narrowing of the vagina, and thinning and loss of elasticity of the vaginal walls with resultant decrease in lubricating secretion may enhance the likelihood of coital trauma, pain and infection, and result in itching and burning of the vulva. Urinary urgency, frequency, and dysuria may occur. Complaints such as vaginal dryness leading to dyspareunia may affect sexual function and lead to a decline in sexual enjoyment and interest. Women who remain sexually active maintain better overall vaginal health with less vaginal atrophy. Estrogen replacement therapy, even at low doses, is effective in alleviating some of these symptoms of urogenital atrophy. Alternative treatment modalities reported for urogenital symptoms include sitz baths, vinegar douches, plant-derived estriol cream, and lubricants (Gleason, 1994; Hammond, 1997; Harper, 1994; Li et al., 1996; Martin, 1995; Scharbo-Dehaan, 1994).

Information regarding the normal age-related changes in sexual function during midlife is needed by a woman and her partner. Modifications in sexual behaviors such as prolonged foreplay, use of over-the-counter water-soluble lubricants, more gentle stimulation of sensitive genital tissue, change in position, and frequent communication between partners will promote healthy sexual function. Kegel exercises should be taught and encouraged to promote

perineal muscle tone, relieve hemorrhoids, and prevent urinary stress incontinence (Hammond, 1997; Harper, 1994; Li et al., 1996).

Sexuality in women is more than a reproductive function. It involves the expression of personality, interrelatedness, and a capacity for pleasure, intimacy, and love. The expression of sexuality in the perimenopausal and postmenopausal years may be complicated by physical and psychosocial factors. Conversely, this may be a period of sexual renewal (Harper, 1994; Li et al., 1996). A woman's response to the biologic changes associated with aging will have an influence on her sexual function during and after menopause (Harper, 1994) as will a woman's sexual relationships before menopause (Li et al., 1996).

Sexual health is affected by chronic illnesses which are more prevalent during midlife such as musculoskeletal problems, cardiac and pulmonary disease, diabetes, and hypertension. Symptoms and treatments for these conditions may interfere with sexual function. The need for sexuality and sensuality in midlife years remains. The nurse practitioner can assist partners achieve sexual pleasure and satisfaction by addressing these issues (Harper, 1994; Li et al., 1996).

The most frequently reported psychosomatic symptom during menopause is depression. Although numerous studies have not found a significant relationship between depression and menopausal status, Hammond, Li, and Maddox discussed some studies that have linked menopause with changes in mood, memory and sexual function. Administration of estrogen and androgen may be beneficial in treatment of these conditions that occur menopausally, especially in the improvement of long term memory, and possibly

in decreasing the risk or severity of Alzheimer's disease (Hammond, 1997; Li et al., 1996; Maddox, 1992).

Osteoporosis is a significant concern in this country, affecting more than 20 million women. It is implicated in most of the 250,000 hip fractures, 650,000 vertebral fractures, and 200,000 wrist fractures that occur annually. Bone density rapidly decreases in many women when they are estrogen deficient, regardless of age or cause. Other factors contributing to osteoporosis are Caucasian race, amenorrhea with hypoestrogenism, reduced calcium intake, cigarette smoking, excessive alcohol intake, inadequate exercise, small stature, thinness, use of glucocorticoids, heparin and anticonvulsant drugs, endocrine disorders, chronic disease and gastrectomy (Hammond, 1997; Harper, 1994, Nussbaum, 1995).

Estrogen, with added calcium and vitamin D, is an effective treatment for prevention of osteoporosis. Calcium supplementation alone is not noted to be more beneficial than HRT but may act to increase the effectiveness of estrogen in relation to bone density. Exercise and calcium supplementation above 1500 milligrams a day, fluoride and calcitonin-salmon (Calcimar, salmonine), or bisphosphonates such as etidronate (Didronel) and alendronate (Fosamax) may help stabilize osteoporotic bone (Hammond, 1997; Harper, 1994; Maddox, 1992; Martin, 1995).

Cardiovascular disease is the leading cause of death among women. The risk of cardiovascular disease for a woman begins to increase in the fourth decade, with the risk becoming essentially the same as for men by age 70. Forty six percent of deaths in women are related to cardiovascular disease. Management of obesity, control of plasma lipid levels, hypertension and diabetes mellitus, cessation of cigarette smoking, a physically active lifestyle,

and estrogen replacement improve a woman's coronary status. Hormone therapy appears to have a direct effect on the coronary artery wall, enhancing coronary artery vasodilation and slowing rates of lipid deposition, making it an effective protective treatment. Estrogen tends to elevate levels of high density lipoproteins (HDLs) and decrease levels of low density lipoproteins (LDLs) in menopausal women, decreasing cardiovascular risk (Hammond, 1997; Maddox, 1992; Scharbo-Dehaan, 1996).

Other body system changes are seen during menopause. Shifts in estradiol production may cause skin changes such as hyperpigmentation (senile lentigo), hypopigmentation (vitiligo), decreased sebaceous and sweat gland activity, and atrophy of the epidermal skin layer. Symptoms that result may be decreased tolerance of temperature and humidity changes, and decreased skin resilience and pliability (Harper, 1994). The breast, a target tissue for estrogen stimulation, responds to estradiol deprivation of menopause with gradual reduction in adipose tissue and lobule size (Harper, 1994; Maddox, 1992).

The shift from estrogen to androgen dominance may cause hirsutism. Coarse hair may appear on the lips, chin, chest, abdomen, and back. Atrophy of the buccal mucosa, similar to that of the vaginal mucosa may occur, leading to dry mouth, bad taste, decreased saliva and sensation, and increased dental caries (Harper, 1994).

Nonpharmacologic therapies such as nutrition counseling, exercise programs, sexual counseling, and educational/support groups are useful in assisting women with menopausal related experiences. Menopausal women benefit from preventive measures aimed at age-related diseases including osteoporosis and cardiovascular disease, and at psychosocial issues such as

alcohol and drug abuse, loneliness, depression, stress-induced illness, cigarette smoking, violence and victimization (Harper, 1994; Martin, 1995; Scharbo-Dehaan, 1994).

Nutrition is a vital component of health and well-being. As caloric requirements decrease with aging, dietary intake needs to be adjusted to maintain optimal weight. Saturated fats, nitrates, sodium, caffeine, excess sugar, alcohol and fat aggravate menopausal symptoms.

Food is the best source of nutrients. Although research evidence of benefit has not been consistent regarding the use of supplements, vitamins and minerals have been reported to be helpful in health maintenance. Vitamin E in doses ranging from 100 units to 2000 units has been recommended for treatment of hot flashes, but serious side effects associated with toxicity can occur. The B-complex vitamins may be absorbed less effectively as people age, so supplementation has been frequently recommended to maintain adequate availability. Vitamin C is required for the synthesis of serotonin, epinephrine, collagen, and bone tissue, and supplements of 1 gram per day may be helpful. Zinc has been found to improve vaginal secretion and lubrication in women. As mentioned earlier, calcium plays an important role in bone health, especially when used with estrogen replacement, as do fluoride and vitamin D (Harper, 1994; Scharbo-Dehaan, 1994). Essential oils like gamma-linolenic acid and linoleic acid, which are found in flaxseed oil and evening primrose oil, and other dietary hormone sources such as sweet potatoes and soybean oil may ease hot flashes, mood swings, and other menopausal symptoms (Gleason, 1994).

Exercise prevents bone loss, burns calories, improves muscle tone, and has positive cardiovascular effects. Daily 30-minute exercise is recommended (Gleason, 1994; Harper, 1994; Maddox, 1992; Scharbo-Dehaan, 1994).

Nurses should assess mid-life women's health, symptoms, and health management practices, including self-care practices. A woman may not automatically need treatment for menopausal symptoms, and should be supported for her appropriate self-care practices (Bernhard & Sheppard, 1993). Health care practitioners must properly balance the acceptance of menopause as a normal physiologic life cycle event and the use of interventions which provide benefit for prevention of the chronic diseases that are common in older women.

Hormone replacement therapy. HRT is the most commonly prescribed, yet controversial treatment for perimenopausal symptoms. Debate over hormone therapy focuses on whether it should be used for short-term symptom management, thereby reducing the risk associated with long-term use, or whether it should also be used to prevent diseases such as osteoporosis and cardiovascular disease, even in women who are not symptomatic or at high risk for those diseases (Maddox, 1992; Martin, 1995; Scharbo-Dehaan, 1996).

The nurse practitioner must be knowledgeable about the benefits, risks, and unknowns of hormone replacement drugs. Benefits consistently reported in the literature included treatment of hot flashes and urogenital atrophy, treatment and prevention of osteoporosis, and reduction of cardiovascular risk (Hammond, 1997; Maddox, 1992; Scharbo-Dehaan, 1996). Evidence was less conclusive for the use of estrogen as a therapeutic agent for irritability, depression, and emotional lability, as well as for sexuality changes. The same could be said for the correlation between estrogen and prevention of some skin

changes of aging, colon cancer, and the more recent link with Alzheimer's disease (Scharbo-Dehaan, 1994).

Bilateral oophorectomy causes an immediate cessation of endogenous estrogen production. A significant risk factor exists for accelerated development of cardiovascular disease and osteoporosis after surgical removal of the ovaries. Vasomotor symptoms were reported to be more frequent and more severe in this group of women. Consideration of treatment with hormone replacement was of high priority in women with surgical menopause (Martin, 1995).

Absolute contraindications to use of HRT included undiagnosed vaginal bleeding, known or suspected pregnancy, active thrombosis or thrombophlebitis, endometrial adenocarcinoma, breast cancer, other estrogen dependent tumors, and active liver disease. Relative contraindications were a history of breast cancer, uterine leiomyoma, endometriosis, hypertriglyceridemia, gall bladder disease, migraine headache, and history of thrombosis or thrombophlebitis (Hammond, 1997; Maddox, 1992; Martin, 1995; Scharbo-Dehaan, 1996).

Unopposed estrogen use in a woman with a uterus was reported to increase the risk for endometrial cancer, thus unopposed estrogen therapy is no longer recommended in these women. Progestin should be added to the regimen to prevent endometrial hyperplasia. Another identified risk factor related to HRT was the risk of breast cancer. Studies have been inconsistent in findings related to the relationship between use of estrogen and use of estrogen and progestin in breast cancer risk. These differences are therefore, difficult to reconcile, both for the patient and the nurse practitioner (Hammond, 1997; Scharbo-Dehaan, 1994). Other risks may be an increase in gallbladder

disease, adult onset asthma, and thromboembolic disorders. Long-term effects of progestin use were unknown (Maddox, 1992; Scharbo-Dehaan, 1994).

Currently more than 25 estrogen products in various forms have been approved for treatment of menopausal symptoms. Estrogens can be administered orally; transdermally in the form of patches, gels, and vaginal creams; or with use of subcutaneously implanted pellets or with inserted vaginal rings. Progestinal agents used for HRT were available in four formulations. Androgens may also be added for women who have deficient androgen levels, although long-term effects were not known (Scharbo-Dehaan, 1994).

No one official standard protocol was recognized for administration of HRT. Therapy must be individualized to provide the lowest dose of estrogen that effectively ameliorates hot flashes and symptoms of urogenital atrophy, reduces cardiovascular risk factors, and retards bone loss. It must be given in a regimen that meets the desires and needs of the woman. Education regarding cost, side effects, and expected bleeding patterns would assist the woman in choosing the best regimen and drug for her needs (Maddox, 1992; Scharbo-Dehaan, 1996).

A common regimen included cyclic administration of estrogen for 25 days, and addition of progestin for 9-14 days starting midcycle. Both drugs were stopped for five to six days resulting in withdrawal bleeding. Another regimen was continuous administration of estrogen, with progestin added for 12 to 14 days. Both estrogen and progestin can be taken continuously, or estrogen can be taken continuously and progestin added every three months for 14 days (Maddox, 1992; Scharbo-Dehaan, 1996).

Documentation of the existence of menopause is essential prior to initiation of hormone replacement therapy. Menopause can be determined by the absence of menses for 12 months, a follicle stimulating hormone (FSH) level greater than 30 to 50 mIU/ml, or an estradiol level less than 50 picograms/ml (Scharbo-Dehaan, 1994). A complete history and physical examination should include height, weight, blood pressure, thyroid function tests, complete blood count, fasting lipid profile, and blood glucose. Special attention must be directed toward a history related to contraindications. Risk factor assessment for osteoporosis and cardiovascular disease and a Pap smear should be done (Scharbo-Dehaan, 1996).

Adverse effects of hormone replacement therapy may include gastrointestinal upset, breast tenderness, weight gain, fluid retention, exacerbation of endometriosis and fibroids, irritability, anxiety, depression, and hypertension. Dosage adjustment, use of a diuretic, and prostaglandin-inhibiting analgesics may provide some relief from side effects (Gleason, 1994; Maddox, 1992; Scharbo-Dehaan, 1994).

Self-Care

The literature revealed an evolution in the self-care concept as the consumerist ethic movement developed. Many health consumers, dissatisfied with modern health care and experiencing increased limitations in personal and social resources, are taking more responsibility for their own care. Self-care is aimed at giving individuals more tools to manage their health and direct their use of the health care system. Care formerly provided by the health professional is increasingly becoming the responsibility of the patient and family

(McElmurry & Huddleston, 1991; Redman, 1993). Orem's early descriptions of self-care included following the medical directives of the physician (McElmurry & Huddleston, 1991). Later definitions stressed self-care as actions directed toward one's self or the environment in order to regulate one's functioning (Orem, 1995). Self-care is a responsibility shared by the woman and the nurse practitioner and is not limited to the diagnosis and treatment of a health problem. It involves seeking both traditional and non-traditional care, activities undertaken without professional assistance, symptom management and self-control (McElmurry & Huddelston, 1991; Padonu et al., 1996). Self-care corrects the imbalance of treatment and dependence in the provider-patient relationship, allowing patient independence (Redman, 1993).

Self-care, as a learned behavior, includes a cognitive dimension. Persons who engage in self-care know themselves, their functional states and the care they need (McElmurry & Huddleston, 1991; Orem, 1995; Redman, 1993). Educational support is necessary in self-care for promotion of self-reliance, responsibility, and initiative. A woman needs education to know the limits of self-care, and to be able to make an informed selection of what is needed from a wide variety of health services and providers. Education and self-care foster independence and increase the control a woman has over her body (McElmurry & Huddleston, 1991; Redman, 1993).

Self-care is limited by restriction of knowing. Restriction of knowing occurs when functioning changes in a way that is new and not understood. A lack of correlation between past and present experiences occurs and familiar self-care requirements and skills are no longer appropriate. Women must have available the knowledge necessary to distinguish what will improve or promote health and be able to set goals to achieve those results. Nurses assist patients

to develop self-care abilities (Hampson & Hibbard, 1996; Harper, 1994; Orem, 1995; Redman, 1993; Webb, 1994; Wilton & Noonan, 1991).

Nurse Practitioner Role

A prominent role of the nurse practitioner is client education and health promotion (Brown & Waybrant, 1988; Redman, 1993). Redman (1993) summarizes nursing models put forth by Peplau, Henderson, Neuman, Orem, and Watson which all address patient education. Many state nurse practice acts make explicit the inclusion of patient education in nursing practice (Redman, 1993).

The Standards of Advanced Practice Registered Nursing, as defined by the American Nurse's Association, include health promotion, health maintenance, and health education as a standard of care. "The advanced practice registered nurse employs complex strategies, interventions, and teaching to promote, maintain, and improve health, and prevent injury" (American Nurses Association, 1996, pp. 13). One category of the advanced practice registered nurse is the nurse practitioner. The nurse practitioner role emphasizes health promotion, self-care education, health maintenance, and a holistic approach to health care. This approach includes teaching, counseling, and disease prevention (Brown & Waybrant, 1988; Redman, 1993; Wilmoth, 1996).

The National Organization of Nurse Practitioner Faculties (NONPF) has defined domains for the advanced nursing practice (National Organization of Nurse Practitioner Faculties, 1995). Competencies of the teaching-coaching function include assessment of the need for teaching, determination of the

client's readiness and motivation for learning, and creation of an environment in which effective learning can take place. The nurse practitioner would routinely elicit information from the client related to interpretation of health conditions, perceived barriers, supports and modifiers to learning, and characteristics of learning style and cultural influences. The nurse practitioner would use the above information to assist the client in learning specific information or skills necessary to care for his/her health conditions. The client's behaviors and specific outcomes would be monitored, and the client supported and encouraged throughout the teaching process.

Health education enables women to acquire relevant knowledge based on sound research. By teaching, nurses take what is fearful and foreign to a client and make it familiar and thus less frightening. Nurses offer information about other ways of coping, new possibilities related to the health situation and even new ways of being for a woman (Benner, 1984; Webb, 1994).

Education Issues

Educating a woman about normal and abnormal changes of menopause is a vital role of the nurse practitioner. Knowledge equips a woman to be an active participant in her care and allows her to make informed decisions about therapeutic and preventive modalities from a wide variety of health services and providers. Knowledge provides the building blocks for sound health care planning, and increases the control a woman has over her body (Harper, 1994; Millonig, 1996; McElmurry & Huddleston, 1991; Redman, 1993; Webb, 1994).

The primary objective of health education is to have a client who is knowledgeable and informed. In fact, an informed client was mandated by the

Patient's Bill of Rights. Health care providers have an ethical responsibility to use information and teaching methods their clients will understand (Wilson, 1996). The Joint Commission on Accreditation of Healthcare Organizations included standards for client and family education which required provision of education that could increase the ability of the client to benefit from health care interventions (Bernier, 1993).

Menopausal women are becoming increasingly interested in preventative health care. They want to know what they can do now to improve the quality of their lives as they age. Women are increasingly incorporating health-promoting behaviors into their lives (Cook, 1992; Hampson & Hibbard, 1996; Li et al., 1996; Millonig, 1996; Webb, 1994; Wilton & Noonan, 1991). This expanded knowledge is made available through magazines, books, the media, and more recently the computer and the Internet (Cook, 1993; Hampson & Hibbard, 1996).

The changing economic climate of health care delivery has limited provider-client time and decreased money for education and resources. Nurses are relying more and more on literature to supplement client education (Bernier, 1993; Owens et al., 1993; Webb, 1994). Although models, television, audio or video tapes, and computer programs are also used for health education, printed materials have several advantages. Printed materials are less costly to produce and update, and provide the advantage of being portable, reusable, and allowing more flexibility for appropriate time and place for reading and thinking about content (Bernier & Yasko, 1991). Communication effectiveness will be increased with the use of clear messages; concise and unambiguous language; appropriate, up-to-date, focused information with stated objectives; and use of the appropriate medium for the message (Bernier, 1993; Webb, 1994). The

nursing diagnosis, Knowledge Deficit, constitutes one-third of all nursing diagnoses made in this country. Printed materials have the potential to significantly contribute to the outcome of increased knowledge for clients and their families (Bernier & Yasko, 1991).

Readability and Comprehension

When making the decision to use written teaching aids, the nurse practitioner must consider the fact that 17-21 million Americans cannot read above the 6th grade level (Estey et al., 1993; Owens et al., 1993). Reading is a complex activity that involves interaction between reader and reading-material variables. Reader variables may include the effects of illness, motivation, physical and mental energy, visual acuity, length of formal education, and the ability to read in the language in which the information is written. Written material variables include legibility, novelty, humor, emotional appeal, organization and flow of content, visual appeal, and relevance and personalization to the reader (Estey et al., 1993; Owens et al., 1993; Sumner, 1991).

One tool that would help the nurse practitioner choose appropriate printed materials is the readability score. Readability is a score assigned to a piece of written information that expresses the school grade level at which a person with the same level of formal education will presumably be able to read. Several formulas, some on computer programs, have been developed for this purpose (Bernier, 1993; Bernier & Yasko, 1991; Estey et al., 1993; Mailloux, Johnson, Fisher & Pettibone, 1995; McLaughlin, 1969; Rice & Valdivia, 1991; Sumner, 1991).

Readability scores do not indicate clear or effective writing, however, and do not prove anyone can read the text. When different formulas are used to measure readability, considerable variation in grade equivalent scores may result. Limitations to readability formulas which must be recognized include variables that influence the difficulty of a selection such as legibility, learnability of text, and the relationship among words and sentences. Other limitations may be the level of abstraction required by the reader, motivation of the reader, and the usability of the information. It is important, therefore, to note which formula was used when readability levels are assigned to a text. Readability formulas should be a quick guide, rather than the only instrument used to determine readability (Mailloux et al., 1995).

Educational level, or the grade level completed, may not necessarily correlate with actual reading ability. Reading ability may be, in fact, well below the grade level last attended (Davis, Crouch, Wills, Miller & Abdehou, 1990; Estey et al., 1993). Illiterate clients seldom voluntarily admit to reading difficulties and even try to conceal their illiteracy (Davis et al., 1990).

Another consideration when using printed materials is that comprehension is not guaranteed by reading ability. Comprehension refers to the ability to understand words or concepts, and is the most important skill needed in health care and health education (Davis et al., 1990; Estey et al., 1993; Owens et al., 1993).

The health history of a client should include some information about reading ability. Besides asking about formal education, inquiring about how often and what a client reads for pleasure might provide insight into reading ability. Tools for assessing reading ability and comprehension can be administered (Estey et al., 1993). Use of other educational aids such as video

tapes, models, illustrations, and computer-assisted programs, as well as personalized reinforcement will enhance teaching (Owens et al., 1993; Bernier, 1993; Rice & Valdivia, 1991; Webb, 1994). Printed materials should be used as a part of a larger education program and not as the educational program in and of itself. Materials must be mutually complementary with the rest of the education program. (Rice & Valdivia, 1991).

All educational materials should be available in the language spoken by the client (Owens et al., 1993). However, materials must coincide with resources available (Rice & Valdivia, 1991). If the readability level of educational materials, and the reading level of the client was established, the most appropriate education materials could be used (Davis et al., 1990; Estey et al., 1993).

SMOG Grading Formula of Readability. The readability formula used for this project to predict the reading difficulty of a text was the SMOG Grading Formula (McLaughlin, 1969). The SMOG Grading Formula was developed as an easy-to-use tool in predicting the grade-level difficulty of a text within 1.5 grades in 68% of the passages tested. It uses the number of multisyllable words in a selection of 30 sentences from throughout the text to estimate the difficulty of the text. The SMOG Grading Formula is discussed in detail in Chapter 3. This formula was chosen because it is quick and easy to apply. As opposed to other formulas, the SMOG Grading Formula was designed to predict which students will show 100% comprehension of a text (Sumner, 1991). Other formulas may provide a higher score because they are designed for less than 100% comprehension.

Cultural Competence

The nurse practitioner should make every effort to incorporate the traditional cultural beliefs of the various minority groups and of the individual into planned treatment protocols (American Academy of Nursing Expert Panel on Culturally Competent Nursing Care, 1992; Lipson, 1996; Price & Cordell, 1994; Spector, 1995).

Cultural diversity is the reality of this decade, and will continue into the twenty first century (Anderson, 1990; American Academy of Nursing Expert Panel on Culturally Competent Nursing Care, 1992; Buchwald, et al., 1994; Lipson, 1996; Price & Cordell, 1994; Spector, 1995). A profound shift in the demographics of the United States is occurring due to population growth, immigration, changes in racial regional distributions, and economic conditions.

Planning and implementing culturally competent care takes into consideration the nursing focus on human beings as they relate to their environment and as they experience and respond to events or situations related to health and illness (American Academy of Nursing Expert Panel on Culturally Competent Nursing Care, 1992). One standard of care for Advanced Practice Registered Nurses required health promotion, maintenance and teaching methods to be appropriate for the client's learning needs, readiness and ability to learn, developmental level, and culture (American Nurses Association, 1996). Culturally competent care is sensitive to issues related to culture, race, gender, religious beliefs, socioeconomic status, view of health and illness, ability and disability, and sexual orientation. It is provided by nurses who use cross cultural nursing theory models and research principles in identifying and evaluating the care provided. Culturally competent care is provided within the cultural context of the woman (American Academy of Nursing Expert Panel on Culturally

Competent Nursing Care, 1992; Buchwald et al., 1994; Lipson, 1996; Price & Cordell, 1994; Spector, 1995).

Orem contended that self care practices employed by an individual must be understood by the nurses within the cultural context of the social group and within the total care system of social group members (Orem, 1995). The health care provider must establish the woman's cultural background, identify adaptations made for living in the American culture, recognize and respect each woman's health care beliefs, and confirm preferences (Anderson, 1990; Price & Cordell, 1994).

Culturally competent care implementation includes situational and cultural specificity; attention to cultural norms, values and communication / time patterns; and empowerment of the cultural group or individual to design relevant solutions to health care needs. Health care providers who are sensitive to their own beliefs, values and communication style; have a working knowledge of the culture; and who modify teaching content in consideration of the client's cultural and personal preferences will have more influence on health behaviors of their clients (American Academy of Nursing Expert Panel on Culturally Competent Nursing Care, 1992; Anderson, 1990; Lipson, 1996; Price & Cordell, 1994).

Selection and Evaluation of Printed Education Materials

The best evaluation of printed education materials is its effect on client behavior (Sumner, 1991). Several articles were found in the literature that discussed characteristics of printed materials which may modify barriers to

learning and behavior change (Bernier, 1993; Bernier & Yasko, 1991; Estey et al., 1993; Gibson et al., 1991; Rice & Valdivia, 1991). Tools to assist the nurse practitioner in development and evaluation of these materials have been developed. Common characteristics evaluated by the tools included attractiveness, accuracy of content, clarity, structure, organization and format, readability, cultural sensitivity and appropriateness for the target population, acceptability, persuasiveness, ownership, usefulness, and learning objectivity (Bernier & Yasko, 1991; Estey et al., 1993; Gibson et al., 1991; Rice & Valdivia, 1991).

The Health Promotion Project: Materials

Evaluation Questionnaire

Development of the Tool. The Health Promotion Project: Materials Evaluation Questionnaire (MEQ) was chosen as the evaluation tool for this project (Gibson et al., 1991). The complete adapted MEQ is included in Appendix A. The MEQ was originally designed by health educators as part of a study which identified the need for evaluation of printed education materials. The investigators were studying methods for introduction of preventive medicine techniques into family practice. As the continuing education needs of medical residents completing their training in Family Practice were addressed, the dilemma of an overabundance of education materials, few of which had been appropriately evaluated, was recognized. The American Academy of Family Physicians Foundation (AAFP/F) library staff became involved to assist in development of a mechanism for evaluating patient education materials and to place favorably reviewed materials in a database that would be available to

family physicians. The AAFP/P wanted to determine if there was agreement between clients and health professionals regarding such characteristics as usefulness, accuracy, and physical appeal of a given piece of printed education material.

The patient educator in each medical residency program chosen to participate in the study located as many printed materials as possible on three health promotion topics and five disease-related topics. Through a Delphi-like process, materials were reviewed and evaluated by seven professionals and seven clients at each of the three medical residency programs.

Tool Description. Two evaluation forms were designed by the health educators, one to be completed by health professionals, and the other by clients. Description of the form for the health professional follows.

Thirty questions on the MEQ asked for evaluation of six major dimensions of printed materials: Purpose, appearance, content, usefulness, overall impression, and most appropriate location for placement. Scoring for the evaluation involved use of a 5 point Likert scale. Evaluators were asked in the first section to state their impression of the main purpose of the material. They were then asked to indicate the extent of their disagreement or agreement with the purpose of the materials related to reinforcement of information, provision of new information, and stimulation of behavior change.

The second section asked the evaluator to rate the appearance of the material including such things as attraction of attention, overall appearance, quality of illustration, and typeface. The scoring related to perceived level of appeal.

The third parameter rated content, from very poor to very good on issues such as scientific accuracy, adequacy of the scope for objectives, organization and flow of ideas, and bias. The extent to which the evaluator disagreed or agreed with statements about usefulness was ascertained in the fourth section. Questions included issues such as usefulness for the intended audience, understandability, and requirement for further explanation.

The evaluator was asked to state overall impression of the material by rating the level of agreement or disagreement with a recommendation that the piece be used by health care providers in their practice. Also requested was a perception of the level of agreement or disagreement that the piece met its stated objectives.

A recommendation for the best location for placement of the material in the health care provider's practice was sought in the sixth section. Demographic information was requested about number of years of practice, professional title, gender, and age of the evaluator. Additional comments were solicited related to each of the six major dimensions evaluated.

Scoring. Mean scores were calculated for each of the six major dimensions and a total mean was calculated for each piece of material. The evaluation scores were then used to identify patient education materials to be included in a database. A mean total score of 3.5 or higher was considered a favorable review. Any piece of material with content inaccuracy or showing bias was eliminated from the evaluation process and the database. The mean total score of materials evaluated by the health professionals was 3.91 (no range

was reported in the publication describing the development and evaluation of the MEQ).

Reliability. Internal consistency of the questionnaire was determined by calculation of a Cronbach's alpha. The health educators who developed the questionnaire reported a reliability coefficient of 0.94 for the questionnaire to be used by the professional evaluator.

Pearson product-moment correlations were calculated on usefulness, understandability, and physical appeal to ascertain whether the health professionals accurately predicted the patient impact of an education piece. Only usefulness showed a statistically significant correlation between the patient and professional evaluations ($r=0.38$, $p < .05$).

Additionally, differences between evaluation by medical residents and practicing family practitioners were explored to determine the most appropriate reviewers for future work. No statistically significant differences were found, implying both groups were consistent in their evaluations.

Regarding comparisons of total tool mean scores of the professionals and clients, while health professionals were somewhat more critical, score differences of both groups were not statistically significant. Clients' mean score was 3.99 and the professionals was 3.91. Thus, moderate consistency was demonstrated. No tests of validity were demonstrated in the publication on the MEQ tool development.

Summary

Menopausal women are one population of clients the nurse practitioner may serve. These women will present with varied values, attitudes, cultural backgrounds, education levels, and self-care needs. They will have a variety of symptoms, health risks, and concerns. An integral part of the care provided to menopausal women is health education. Education is needed to allow women to be active participants in their health care and to allow them to make informed decisions regarding self-care.

Printed education materials are one cost-effective adjunct to health teaching which can be tailored to the individual client's needs. The abundance of these materials available today makes appropriate selection difficult. A process for selection and evaluation would assist the nurse practitioner to most effectively use printed materials in caring for clients.

This project applied the Health Promotion Project: Materials Evaluation Questionnaire (MEQ) described above to a selection of education materials related to menopause. The MEQ was evaluated for its usefulness as a tool for selection of printed materials. Results of the evaluation guided the development of a resource manual which will be part of a collection of resources for the nurse practitioner to use for client education. The following chapter will describe the process of material selection and evaluation used in this project.

CHAPTER 3

METHODS

Selecting appropriate, accurate health education materials from the overabundance available is a dilemma faced by both the nurse practitioner and the client. The need exists for a method to evaluate these materials so that the most appropriate ones can be selected for use.

This project applied the Health Promotion Project: Materials Evaluation Questionnaire (MEQ) (Gibson et al., 1991) to a selection of printed health education materials related to menopause. One goal of the project was to identify materials which were accurate and useful for client education. Another goal was to test the usefulness of this tool in evaluation of such materials. The process involved the use of a panel of expert nurse practitioners to assist with evaluation of materials and evaluation of the MEQ. As a result of this project a complete resource collection, including a manual of printed materials, will be developed.

Expert Nurses

The process of manual development involved critique by an expert panel of three nurse practitioners and the author regarding both the quality of the materials selected for the resource manual and the usefulness of the evaluation tool itself. Expert nurses were described by Benner (1984) as those who do not

need to rely on analytic principles such as rules, guidelines and maxims to understanding a situation and act appropriately. The background and experiences of the expert nurses allows an intuitive grasp of each situation. Their experience is more than longevity; it is the ability to clearly understand and apply theory and preconceived notions through their experiences. A deep understanding of the total situation guides the expert nurse's actions (Benner,1984).

The nurse practitioners chosen to evaluate the materials for this project were recognized as experts by their clients and colleagues. Table 1 summarizes the nurse panel's qualifications. Individual identities of the nurse practitioner experts were not revealed. All three experts have a baccalaureate degree in nursing. Two have a master's degree in nursing. The three experts were certified as nurse practitioners in the state of Montana. Experience as a nurse practitioner ranged from 5 to 15 years, and experience in women's health care ranged from 8 to 20 years. All three experts had experience as faculty in nursing education programs and/or as preceptors for nurse practitioner students. Each had over 20 years of client education experience in work as a registered nurse.

The author of this project, who also evaluated the materials, had a baccalaureate degree in nursing, and was a master's candidate as a family nurse practitioner. The author had minimal experience in women's health care. Teaching experiences included health education classes in public schools and client education related to 22 years of working as a registered nurse in medical/surgical nursing.

Table 1. Summary of nurse panel qualifications.

	Expert Nurse 1	Expert Nurse 2	Expert Nurse 3	Author
<u>Undergraduate education</u>	BSN	BSN	BSN	BSN
<u>Graduate degree</u>	Primary Health care	No	MSN	MN student
<u>Nurse Practitioner Certification</u>	Yes	Yes	Yes	No
<u>Years experience as Nurse Practitioner</u>	15	8	5	NA
<u>Years experience in women's health</u>	14	8	20	1
<u>Experience in education</u>	Faculty BSN, MN programs, Preceptor NP students	Preceptor NP students	Faculty BSN, AD programs, Preceptor NP students	Public schools

Process of Resource Selection and Evaluation

Needs Assessment and Problem Identification

Development of a resource manual was guided by the steps in the nursing process; needs assessment, diagnosis (specific problem identification), goal setting (determination of manual content), intervention (application of an evaluation tool and readability score to selected materials), and evaluation of the process. The first step, a needs assessment to identify health concerns, topics, and resource requirements of the target population, was an outcome of

the author's experience. A single need or topic, menopause, was isolated, and education goals were developed for the purpose of the learning intervention. For this project, learning needs related to menopause were found in the literature and in this author's clinical experience (Bell, 1995; Cook, 1993; Fishbein, 1992; Harper, 1994; Wagner et al., 1995; Woods, 1994).

Manual Content

Determination of manual content was guided by the literature review which revealed specific issues, needs, definitions, diagnostic procedures, treatment modalities, and implications to be addressed in client education (Gleason, 1994; Hammond, 1997; Harper, 1994; Li et al., 1996; Maddox, 1992; Scharbo-Dehaan, 1994). When completed, the resource manual would include general information about menopause such as definitions of terms, common symptoms, significance and health concerns, and an overview of the common course of events related to menopause.

More specific information related to symptoms and treatment modalities would address vasomotor symptoms, urogenital atrophy, osteoporosis, cardiovascular disease, and other symptoms related to changes in hormone levels that occur at menopause. Information about treatment modalities would include such issues as nutrition, exercise, medications, hormone replacement therapy, and alternative treatments. Hormone replacement therapy was a subject that warranted specific attention due to the frequency of hormone use at menopause and the related controversy of hormone replacement therapy (HRT).

Psychosocial issues such as sexuality, family violence, femininity, the meanings women attribute to menopause and aging, changing social roles, and depression are important to the total health and well-being of women. Inclusion of education related to these issues demonstrated acknowledgement of the woman as a whole, and of information that would contribute to adequate self-care.

Materials included in the complete resource manual will be available from information written by voluntary health agencies, pharmaceutical companies, professional associations, government agencies, companies which publish consumer/client education literature, research articles from professional journals, and books from the popular literature. For this project three pieces of information were selected for analysis based on their varying content, source and purpose.

The review of literature identified existing tools designed to evaluate printed materials (Bernier & Yasko, 1991; Gibson et al., 1991; Rice & Valdivia, 1991; Sumner, 1991). The MEQ described in Chapter 2 was chosen. Through the process of application of the evaluation tool to the selected materials, the author gained objective guidelines for appropriate selection of quality, useful materials for the completed resource manual.

Application of The Evaluation Tool and Readability Score

Description of the MEQ. The MEQ was chosen as the evaluation tool for this project because it was specifically designed to evaluate existing materials. Other tools found in the literature focused more on the development of education materials or on characteristics of the learner (Bernier & Yasko, 1991;

Estey et al., 1993; Rice & Valdivia, 1991). The MEQ was short, easy to understand and use, and produced a score which could be used to compare various pieces of material. The MEQ included two evaluation questionnaires; one for use by the health professional, and one for use by clients. The health professional questionnaire was used for this project because the goal was to gain input from expert nurse practitioners about the usefulness of the tool in evaluation of printed materials.

The author of the original tool, P. A. Gibson, granted permission to use the MEQ. Because this project focused on the nurse practitioner, permission was also obtained to modify the MEQ to include the nurse practitioner as a choice for health professional status (see Appendix B for letter of permission to use and adapt the MEQ). The tool was retyped to meet format needs. The adapted MEQ is included in Appendix A.

The literature suggested numerous characteristics of quality printed education materials (Bernier & Yasko, 1991; Estey et al., 1993; Owens et al., 1993; Sumner, 1991; Webb, 1994). The MEQ grouped several of those qualities into six dimensions. Purpose, appearance, content, usefulness, overall quality, and suggested location for placement of materials in the practice were evaluated. Evaluators were asked to respond to 28 questions regarding these six major dimensions using a 5 point Likert scale. An additional question required a yes or no answer regarding bias. One other question asked for suggestions of possible locations for placement of the materials in the practice. The MEQ is described in detail in Chapter 2.

The main purpose of each piece was evaluated related to reinforcement of information, provision of new information, and stimulation of behavior change. Evaluation of the appearance of the material included such properties

as attraction of attention, overall appearance, quality of illustration, and typeface. Content was rated from very poor to very good on issues such as scientific accuracy, scope for objectives, organization and flow of ideas, and bias. A rating of perceived usefulness and an overall impression of the material was appraised. The perception of the best location for placement of the material in the physician's or nurse practitioner's practice was requested. The questionnaire also asked for additional comments from the evaluators related to each dimension. Demographic information included professional status, number of years of professional experience, gender and age.

The MEQ tool demonstrated strong internal consistency in the original development stage. The original publication reported reliability coefficient by Cronbach's alpha of 0.94. Validity was not demonstrated in the publication of the development of the MEQ. No further literature was found from which to derive validity or reliability scores.

Scoring the MEQ. The mean score for each of the six major dimensions (dimension mean) was calculated by adding the scores for each question in that section, and dividing by the number of questions answered. The mean score for each piece of material (total mean) was obtained in a like manner. As in the original use of the MEQ, any piece of material which received a mean score of less than 3.5 related to scientific accuracy (question 12) or bias (question 19), or was perceived to have bias which interfered with the intent of the piece (question 20) was automatically eliminated from consideration for the resource manual. A total mean score of 3.5 or higher was considered a favorable review

in the original study. A total mean score of 3.5 or higher was also used as a favorable rating for this project.

Readability Scoring. A readability score was not part of the MEQ, but was included in the description of materials chosen for the database in the original study. A readability score was assigned to each of the three pieces of material in this project using the SMOG Grading Formula (McLaughlin, 1969). The SMOG Grading Formula was developed as an easy-to-use tool in predicting the grade-level difficulty of a text. It used the number of multisyllable words in a selection of 30 sentences from throughout the text to estimate the difficulty of the text. The relationship between the difficulty experienced by people reading a given text and a measure of the linguistic characteristics of that text was scored. The SMOG Grading Formula was chosen because it was quick and easy to apply. As opposed to other formulas, the SMOG Grading Formula was designed to predict which readers would show 100% comprehension of a text (Sumner, 1991). Other formulas may provide a higher score because they are designed for less than 100% comprehension.

SMOG Grading was calculated in the following manner:

1. Count ten consecutive sentences near the beginning, ten near the middle, and ten near the end of the text to be assessed. A sentence is considered any string of words ending with a period, question mark or exclamation point.
2. In the 30 selected sentences, count every word of three or more syllables, including repeated words.
3. Find the square root of the nearest perfect square of the number of polysyllabic words counted.

4. Add 3 to the approximate square root. This gave the SMOG Grade, which was the reading grade that one must have reached to understand the text fully.

McLaughlin (1969) contended that the standard error of the predictions using the SMOG Grading was 1.5 grades. This formula would predict the grade of the text correctly within one and one half grades in 68% of the passages tested.

Description of Selected Printed Education Materials

The expert nurses and the author were each provided with the same three pieces of printed education materials. They were asked to use the MEQ to evaluate each piece.

One selection as an example of general information was Menopause: Your Guide to Feeling Good in a New Stage of Life (Menopause). It had a readability score of grade 8 using the SMOG Grading formula (Krames Communications, 1996). Table 2 summarizes the three selected pieces. This 16 page client education pamphlet was published by a commercial provider of client education materials. It was developed with consultation from a family practice physician, an obstetrics / gynecology physician, and a registered dietitian.

Content area included a definition of menopause, basic female reproductive anatomy and physiology, signs and symptoms commonly associated with menopause, health risks, some suggested treatment modalities including lifestyle modifications, and a discussion of hormone replacement therapy. Culturally sensitive color illustrations were included on each page.

A second selection, a chapter from Dr. Susan Love's Hormone Book titled "Decisions: What Should I Do?" (Decisions) had a readability score of grade 12 using the SMOG Grading Formula (Love & Lindsey, 1997) . It was chosen as an example of material from the popular literature which dealt with the controversial subject of hormone replacement therapy (see Table 2).

The selected chapter was 25 pages long. The chapter focused on decision-making related to the use of hormones for both symptom management and disease prevention. Appropriate self-care depends on adequate decision-making skills. The author discussed values and biases of both the doctor and the woman related to health care and hormone use. Included were two questionnaires. The first one was designed to assist the woman in making decisions regarding the use of hormones in symptom management. It allowed the woman to rate severity of symptoms, and personal values related to taking medications, using alternative therapies, and perception of menopause.

The second questionnaire was designed to assist decision-making regarding use of hormones to prevent osteoporosis and cardiovascular disease, and to assess risk related to menopausal hormone use. Several charts and graphs illustrated the comparison of risk and benefit, and compared various approaches to prevention of cardiovascular disease, osteoporosis, and overall mortality. Lifestyle modifications and the use of supplements were discussed as alternative approaches to both symptom management and disease prevention.

A final piece of material was a Patient Information Handout developed by the American Academy of Family Physicians (AAFP). Osteoporosis in Women: Keeping Your Bones Healthy and Strong (Osteoporosis) was selected due to

its focus on one of the chronic health problems associated with menopause (American Academy of Family Physicians, 1997).

Permission was granted to reproduce this handout for nonprofit educational purposes. Patient Information Handouts from the AAFP can be found in the Family Physician journal or downloaded from the AAFP World Wide Web site. This handout had a readability grade of 11 using the SMOG Grading formula (see Table 2).

Table 2. Summary of selected pieces of printed education materials.

	<u>Title of Selected Pieces</u>		
	<u>Menopause</u>	<u>Decisions</u>	<u>Osteoporosis</u>
<u>Purpose</u>	General menopausal symptoms, treatments	Decisions related to HRT	HRT & osteoporosis prevention
<u>Source</u>	Commercial client education materials	Popular literature	Internet Web page
<u>Description</u>	Pamphlet Color illustrations Bold headings	Book chapter Tables, figures, questionnaires	Reproducible patient information handout, Bold headings
<u>Length</u>	16 pages	25 pages	2 pages
<u>SMOG Readability score</u>	8	12	11

Information included a definition of osteoporosis and discussion of symptoms and risk. The use of hormone replacement therapy for treatment and

prevention, and the need for adequate intake of dietary calcium and vitamin D were discussed in this handout.

Additionally, open-ended comments were requested regarding the target audience each piece of material would best fit. The reason for evaluation of printed materials was to assist in selection of appropriate materials for the target population served by the nurse practitioner.

Data Analysis

Demographic information related to nurse experts was summarized. This included professional status, years of practice, gender and age (see Table 1).

Evaluation of Education Materials

Any piece of the selected material which received a mean score of less than 3.5 on question 12 related to scientific accuracy, or on question 19 related to bias was automatically eliminated from consideration as a useful and appropriate client education resource. Any piece which received more than one "yes" answer to question 20 related to interference of bias in the intent of the piece was also automatically eliminated from consideration.

Means scores were calculated for individual questions 1-26, excluding question 20. Questions 1-26 included the dimensions of purpose, appearance, content, usefulness, and overall impression.

Questions 27-29 assessed the nurses' perceptions of the most appropriate location for placement of the piece in the nurse practitioner's office. These questions were compared for extent of agreement, but a mean score was

not appropriate for the dimension of placement. Qualitative information from the open-ended questions following the placement dimension was searched for patterns and agreement of opinion.

A mean score was calculated for the five major dimensions of purpose, appearance, content, usefulness, and overall impression. The mean scores for each of these dimensions provided objective information about strengths and weaknesses of each piece. Qualitative information from the open-ended questions was searched for patterns, and also contributed knowledge about strengths and weaknesses of each piece.

A total mean score was calculated for each piece which included the scores for questions 1-26 with the exception of question 20. A total mean of 3.5 or greater indicated a favorable review from the experts on the quality of the piece. Additional qualitative comments from the open-ended questions were searched for patterns. This information contributed to the judgment of the quality and usefulness of each piece.

A decision related to the appropriateness, usefulness and quality of a piece of information was based on a) the absence of judgment by the experts of content inaccuracy as evidenced by a mean score of 3.5 or higher on question 12; b) the absence of bias that interfered with the intent of the materials as evidenced by a score of 3.5 or higher on question 19 and fewer than two "yes" answers for question 20; c) a total mean score of 3.5 or higher, and; d) a match between the recommended target audience and the nurse practitioner's client.

Evaluation of the MEQ

Each nurse was asked to rate the usefulness of the MEQ for evaluation of each piece of material using a 5 point Likert scale (see Comments in Appendix A). A mean was calculated for each piece of material. A mean of 3.5 or greater indicated that the nurses judged the MEQ to be a useful tool for that piece of material. Each nurse was also asked to consider the MEQ globally, and rate the MEQ for usefulness in printed material evaluation, again using a 5 point Likert scale. A mean was calculated for the global scores. A mean of 3.5 or greater indicated that the nurses judged the MEQ as useful for evaluation of printed education materials (see Appendix A for the questionnaires used for these evaluations).

Face validity was rated, using a 5 point Likert scale (see Opinion of MEQ in Appendix A). Each nurse was asked for degree of agreement with a statement that the MEQ seemed to measure the quality of printed education materials. A mean was calculated, with a score of 3.5 or higher indicating a favorable judgment that the MEQ measured the quality of such materials. Qualitative data obtained from open-ended questions related to the MEQ tool were searched for patterns and agreement of opinion.

A decision to use the MEQ for material selection for a resource manual was based on a) judgment by the nurse panel that the MEQ was useful as evidenced by a mean score of 3.5 or higher on the questions related to usefulness of the MEQ; b) a judgment of face validity by the nurse panel as evidenced by a mean score of 3.5 or higher on questions related to face validity; c) lack of subjective comments from open-ended questions indicating an unfavorable impression, and; d) lack of inconsistencies indicating confusion, diverse interpretation or misunderstanding of questions.

Evaluation of the Use of an Expert Panel

The process developed to evaluate the usefulness of selected materials for client education included the use of a panel of three expert nurse practitioners. The experts were charged with evaluating the selection of materials for usefulness and quality by applying the MEQ. They also evaluated the MEQ itself for face validity and usefulness.

In judging whether the use of an expert panel was efficient, useful and practical, both technical issues and subjective analysis of level of agreement were considered. Technical issues included the ease of contacting the nurse practitioners and their willingness and ability to participate; the time and expense required to assemble and distribute the materials and the MEQ; the time and effort required to evaluate the materials using the MEQ; whether the evaluations were returned in a timely fashion; and time required to analyze the data. Subjective judgment was made related to analysis of the level of agreement among the expert panel members and the author, and the implications for practical application of the process.

Statement on Protection of Human Subjects

This project involved development of a process for the evaluation of printed education materials for the nurse practitioner. It was not a research project and did not involve research subjects. A panel of nurse experts was employed to judge the process. Thus, Human Subjects Review was not deemed necessary by the project committee and the chairperson of the College of Nursing Human Subjects Review Committee.

Summary

A process of printed education material evaluation was developed for the nurse practitioner to use when selecting materials for health education. Menopause was chosen as an example of a common health issue for which the nurse practitioner would provide health education. The process involved application of the Health Promotion Project: Materials Evaluation Questionnaire (MEQ) to three different pieces of printed education material. Each piece was selected for its variability in focus and source.

An expert panel of three nurse practitioners and the author used the MEQ to judge the following six dimensions of each piece of material: Purpose, appearance, content, usefulness, overall quality, and suggested location for placement in the health care practice. A 5 point Likert scale was used to obtain scores for 26 questions about five of the six major dimensions. Questions related to the sixth dimension of location for placement were searched for patterns of agreement. Means for each question, for five of the six major dimensions, and for each piece of material were calculated. Additional qualitative information requested was searched for patterns of agreement. The mean scores, along with the answers to the open-ended questions guided the nurse practitioner in selection of printed education materials.

The expert nurses and the author also judged the face validity and usefulness of the MEQ for printed material selection. Results of these questions influenced the author's recommendations about the MEQ usefulness in selection and evaluation of other printed health education materials.

A decision was made as to the usefulness, efficiency and practicality of involving a panel of expert nurse practitioners in selection and evaluation of

printed education materials. Subjective opinion related to the technical aspects of use of a panel, and analysis of the level of agreement among the panel and the author was considered in the decision.

CHAPTER 4

PROJECT OUTCOMES

Client education is an important part of every nurse-client contact. A resource manual will be part of a collection of resource materials to assist the nurse practitioner with client education. An informed client is better able to be an active participant in health care. Education is necessary in self-care for promoting self-reliance, responsibility and initiative. Printed materials are an economical and effective medium for imparting information. Selection of materials for the manual is a difficult task due to the abundance of materials available.

Menopause was identified as one health issue for which the nurse practitioner may provide health care and education. This project applied an evaluation tool to a selection of three pieces of printed education materials related to menopause. The quality and appropriateness of the pieces was judged for inclusion in a resource manual.

Three expert nurse practitioners and the author of this project applied the evaluation tool to the pieces. Outcomes of the evaluation identified materials which were useful and appropriate for inclusion in the manual. The evaluation tool itself was judged for usefulness in evaluation of materials. The process of employing nurse practitioners to assist with evaluation and selection of materials was judged. Results of the project are discussed in this chapter.

MEQ Outcomes

The pieces of material evaluated for this project were described in detail in Chapter 3, and summarized in Table 2. A brief description of each piece is provided in this section, and the results of the nurse panel's evaluation is discussed.

Menopause

Menopause: Your Guide to Feeling Good in a New Stage of Life

(Menopause) was a 16 page pamphlet published by a commercial provider of education materials. It included a definition of menopause, basic female reproductive anatomy and physiology, signs and symptoms commonly associated with menopause, health risks, some suggested treatment modalities including lifestyle modifications, and a discussion of hormone replacement therapy. Culturally sensitive color illustrations were included on each page (Krames Communications, 1996). The SMOG Grading formula readability score for this piece was grade 8. Table 3 provides raw scores and question means for this piece. Dimension means are provided in Table 4.

Accuracy and bias. Scientific accuracy, had a mean score of 4, which is above the cut-off score of 3.5 at which the piece would be eliminated from the selection process. One nurse rated accuracy as a 3, but did not offer explanation as to this rating.

Table 3. Table of raw scores and question means: Menopause

Question Number	Expert Nurse 1	Expert Nurse 2	Expert Nurse 3	Author	Question Mean
<u>Purpose</u>					
1	5	4	2	4	3.8
2	5	5	5	4	4.8
3	4	5	4	4	4.3
<u>Appearance</u>					
4					
5	4	4	3	5	4.0
6	4	4	4	5	4.3
7	4	5	4	5	4.5
8	5	5	5	5	5.0
9	5	4	5	4	4.5
10	5	4	5	5	4.8
<u>Content</u>					
11	4	3	5	4	4.0
12	4	3	5	4	4.0
13	5	4	5	4	4.5
14	5	4	5	5	4.8
15	5	4	5	5	4.8
16	3	4	NA	5	4.0
17	3	NA	5	5	4.3
18	4	4	5	5	5.4
19	4	5	5	5	4.8
20	No	--	No	NA	
<u>Usefulness</u>					
21	4	5	5	4	4.5
22	4	5	5	4	4.5
23	4	5	4	4	4.3
24	4	5	3	4	4.0
<u>Overall</u>					
25	5	4	5	4	4.5
26	4	4	5	4	4.3
<u>Placement</u>					
27	4	4	5	4	**
28	4	4	5	5	**
29	2	4	2	2	**

Note. Dashes indicate missing data.

**Means not appropriate.

Table 4. Table of means: Menopause

	Expert Nurse 1	Expert Nurse 2	Expert Nurse 3	Author	Dimension Mean
<u>Purpose</u>	4.7	4.7	3.7	4.0	4.3
<u>Appearance</u>	4.4	4.3	4.1	4.9	4.4
<u>Content</u>	4.1	3.9	5.0	4.7	4.4
<u>Usefulness</u>	4.0	5.0	4.3	4.0	4.3
<u>Overall</u>	4.5	4.0	5.0	4.0	4.4
<u>Total mean</u>	4.3	4.3	4.5	4.5	4.4

Question 19 relating to bias was rated with a mean score of 4.8, well above the 3.5 cut-off score for elimination due to bias. Two nurses answered question 20 about the interference of bias with the intent of the item as a "no", while one marked "not applicable" and one did not answer the question. A lack of a "yes" answer indicated a perception that bias was not a weakness for this piece.

Purpose. The purpose dimension indicated the level of agreement on 3 statements. Mean scores for this dimension ranged from 3.7 to 4.7 with a dimension mean of 4.3. One outlier was one score of 2 indicating disagreement with the statement that the purpose was to reinforce information. The 4 nurses generally agreed on the purpose. The two nurses who provided comment

agreed that the purpose was to provide information related to menopausal symptoms.

Appearance. The appearance dimension was rated through 7 questions. The mean score for this dimension was 4.4 (range 4.1 to 4.9). The nurses consistently rated this piece as having high appeal related to appearance. One outlier rated attraction of attention at first glance and ability to hold attention as average appeal, but that nurse commented later that the cover was “not that intriguing”, but once inside the pamphlet the perception of the appeal was higher. Another nurse commented on the “great use of diagrams, pictures, boxed information and color”.

Content. The content dimension included 9 questions asking for a rating from very poor to very good. The mean score of this dimension was 4.4 (range 3.9 to 5). Question 16, “needed background given to enable understanding”, was marked as not applicable by one nurse. This same nurse either marked this question as not applicable or did not answer it on all three pieces evaluated. The range for question 16 by the other 3 nurses on this piece was from 3 to 5, indicating a lack of consensus and leading this author to question whether the wording of the question was confusing or unclear. Question 17, “summaries given when needed”, was marked not applicable by one nurse. The range for the other 3 nurses was from 3 to 5, indicating a lack of consistent agreement on this question. The mean score of 4.4 for the content dimension indicated a favorable rating despite inconsistencies in the above mentioned questions.

One nurse commented, "good information for women, outlining expected normal changes with encouragement to choose a healthy lifestyle". Another indicated past experience as a review panel member for the company which developed this pamphlet, and believed exceptional effort was made to include an ethnic representation.

Usefulness. The mean score for the usefulness dimension was 4.3 (range 4 to 5). Scores indicated consistent agreement that this pamphlet was useful, believable, understandable, and required little explanation.

Overall impression. Overall impression of this pamphlet was measured by 2 questions; a recommendation that physicians and nurse practitioners use this material with patients, and that this material met its objectives. The mean score for this dimension was 4.4 (range 4 to 5), indicating strong agreement between the nurses. One nurse stated that "many women want much more in-depth information, and resources should be offered". The mean score indicated a favorable perception of this pamphlet overall by the nurses.

Location for placement. The last dimension sought agreement on 3 question related to the best location for placement of this pamphlet in the nurse practitioner's practice. The nurses consistently agreed that the waiting room and exam room would be appropriate places for the piece (range 4 to 5), and that storage for occasional use would not be appropriate (mean 2.5 and range 2 to 4). Comments addressed a concern for cost in widespread distribution of

education materials, and that this information also would be appropriate for the male partners of women clients.

Total mean. The total mean score for the pamphlet was 4.3 (range 4.3 to 4.5). Consistent favorable agreement among the nurses indicated that this was a high quality piece of material.

Additional comments were requested related to the target audience for which this piece would be best suited. Nurses comments included statements indicating this pamphlet would be most appropriate for women with a higher level of education and motivation who desire information and are experiencing perimenopausal symptoms. The readability score for this pamphlet was grade 8. The length of the pamphlet may be a deterrent to women who were less motivated.

Usefulness of MEQ. The nurse evaluators were asked to rate the usefulness of the MEQ in evaluation of this piece of material (Appendix A). The mean score of 4.5 (range 4 to 5) indicated high agreement that the MEQ was useful for evaluation of this pamphlet. Table 5 provides raw scores and means for the judgment of usefulness of the MEQ for the 3 select pieces of material for this project.

Decisions

The chapter from Dr. Susan Love's Hormone Book entitled "Decisions: What Should I Do"? (Decisions) was from the popular literature (Love & Lindsey, 1997). Its focus was a discussion of decision-making related to the use

of hormones for both symptom management and disease prevention. The readability score of this piece was grade 12. The selected chapter was 25 pages long. The author discussed values and biases of both doctors and women related to health care and hormone use. Included were two questionnaires, one designed to assist the woman in making decisions regarding the use of hormones in symptom management. The other was designed to assist decision-making regarding use of hormones to prevent osteoporosis and cardiovascular disease, and to assess risk related to menopausal hormone use.

Table 5. Scores for usefulness of the MEQ in printed material evaluation.

	Title			
	<u>Menopause</u>	<u>Decisions</u>	<u>Osteoporosis</u>	<u>Globally</u>
<u>Raw score</u>				
Expert Nurse 1	5	5	4	5
Expert Nurse 2	5	5	5	5
Expert Nurse 3	4	5	5	5
Author	4	5	4	5
<u>Mean Score</u>	4.5	5	4.5	5

Several charts and graphs illustrated the comparison of risk and benefit, and compared various approaches to prevention of cardiovascular disease, osteoporosis, and overall mortality. Lifestyle modifications and the use of supplements were discussed as alternative approaches to both symptom

management and disease prevention. Table 6 provides raw scores and question means for this piece, and Table 7 provides dimension means.

Accuracy and bias. Scientific accuracy had a mean score of 4 (range 4 to 5) indicating a perception of accuracy. Two nurses believed there was not fair presentation due to sexism and bias as evidenced by scores of 2 and 3 on question 19. The mean score for this question, however, was 3.5. One nurse believed the bias interfered with the intent of the item by answering "yes" to question 20, and offering the following comment.

For me personally, I felt bias against the health care profession. If I dare suggest hormones, I might as well call the mortuary as I'm feeding women poison. I feel sorry for the woman who chooses hormones. You can tell that Dr. Love, no matter how she tries to be somewhat objective, would be looking down her nose.

Inconsistency is evidenced by another's comment, "Dr. Love is definitely biased against HRT and I like the fact that she admits it readily." Careful consideration needs to be taken of the bias that was noted by the nurses if this book chapter was to be used for client education, especially in light of the perception by one nurse that the bias interferes with the intent.

Purpose. The purpose dimension mean score was 3.9 (range 2.3 to 4.7). One nurse rated this dimension lower than the other 3 nurses, skewing the mean. Two nurses stated the purpose of this piece was to assist women with decision-making related to HRT.

Table 6. Table of raw scores and question means: Decisions

Question Number	Expert Nurse 1	Expert Nurse 2	Expert Nurse 3	Author	Question Mean
<u>Purpose</u>					
1	4	4	1	3	3.0
2	5	5	4	5	4.8
3	4	5	3	5	4.3
<u>Appearance</u>					
4	3	5	1	4	3.3
5	4	5	2	4	3.8
6	3	2	1	2	2.0
7	3	2	NA	3	2.7
8	1	NA	NA	NA	1.0
9	2	3	3	2	2.5
10	4	4	2	4	3.5
<u>Content</u>					
11	5	4	5	4	4.5
12	5	4	4	3	4.3
13	5	3	4	5	4.3
14	5	4	5	4	4.5
15	5	4	5	4	4.5
16	4	5	--	5	4.7
17	4	4	2	5	4.3
18	4	4	3	2	4.3
19	5	4	3	2	3.5
20	No	--	Yes	No	
<u>Usefulness</u>					
21	4	4	5	4	4.3
22	5	4	4	4	4.3
23	4	4	3	3	3.5
24	4	4	2	3	3.3
<u>Overall</u>					
25	4	4	3	3	3.5
26	5	4	4	5	4.5
<u>Placement</u>					
27	3	4	2	2	**
28	3	4	2	3	**
29	4	2	2	4	**

Note. Dashes indicate missing data.

**Means not appropriate.

Table 7. Table of means: Decisions

	Expert Nurse 1	Expert Nurse 2	Expert Nurse 3	Author	Dimension Mean
<u>Purpose</u>	4.3	4.7	2.3	4.3	3.9
<u>Appearance</u>	2.9	3.5	1.8	3.2	2.9
<u>Content</u>	4.7	4.0	3.9	3.8	4.1
<u>Usefulness</u>	4.3	4.0	3.5	3.5	3.8
<u>Overall</u>	4.5	4.0	3.5	4.0	4.0
<u>Total mean</u>	4.0	3.4	3.1	3.7	3.7

Appearance. The appearance dimension received a low rating with a mean of 2.9 (range 1.8 to 3.5). One nurse had planned to read the book, so was attracted to the piece. Another was attracted by the title. One nurse consistently rated this dimension lower than the other 3, skewing the mean. Three nurses marked the question related to use of color as not applicable because the book uses no color, whereas the fourth nurse rated it a 1 (low appeal), indicating a lack of consistent interpretation of this question, and skewing of the dimension mean.

Content. The content dimension mean was 4.1 (range 3.8 to 4.7). All questions in this section had a wide variance in scores, indicating a lack of consensus among all evaluators. Content questions related to accuracy and bias were discussed above. Comments for this dimension included approval of the questionnaires in this chapter, but one nurse noted the scoring for the

questionnaires "is somewhat confusing". Despite the concern about bias, the mean score of 4.1 indicated an above average rating of content.

Usefulness. The usefulness dimension mean was 3.8 (range 3.5 to 4.3). The one outlier was a rating of 2 (disagree) related to "requires little or no explanation" given by one nurse. One nurse commented that the figures may be complicated for a woman not familiar with the language of research. The nurses consistently agreed in rating this chapter as above average for usefulness.

Overall impression. The mean score for overall impression was 4 (range 3.5 to 4.5), indicating agreement among the nurses that the chapter was above average in quality. All commented that some women want, and should be offered, varied information. This chapter would offer another perspective, especially to more motivated women with a high reading level. One nurse suggested that she "would preface the suggestion with an overview of Dr. Love's perspective", and another suggested several other books and resources for information related to menopause.

Location for placement. There was not strong agreement about the appropriate location for placement of this book in the nurse practitioners office. All of the nurses offered comment on this dimension. One stated that many loaned books were not returned, making this a less attractive piece to use for client education. Others noted that this would be appropriate for a selection of women who were highly motivated, needed more information, were ambivalent

about HRT, and had higher reading levels, making it a resource best stored for occasional use. One nurse suggested this book should be required reading for health care professionals.

Total mean. The chapter did receive a total mean rating of 3.6 (range 3 to 4). Despite the nurse's concerns, a favorable rating indicated their perception that this was a quality piece of material that might be used selectively for client education. The readability score of grade 12 and the length may limit the clients for whom this would be appropriate.

Usefulness of MEQ. For this chapter, the nurses rated the MEQ as a useful evaluation tool, with all 4 nurses giving the tool a rating of 5 (see Table 5). The objective evaluation standards of the MEQ allowed the nurses to identify the weaknesses as well as the strengths of this chapter.

Osteoporosis

Osteoporosis in Women: Keeping Your Bones Healthy and Strong (Osteoporosis) was a patient education handout taken off the American Academy of Family Physicians (AAFP) World Wide Web site (American Academy of Family Physicians, 1997). It was chosen due to its focus on one of the chronic health problems associated with menopause. This non-colored handout had no illustration or tables, but had highlighted headings. The readability grade was 11. Content included a definition of osteoporosis, discussion of symptoms, risk, and the use of hormone replacement therapy for

treatment and prevention. Table 8 provides raw scores and question means for this piece. Table 9 provides dimension means.

Accuracy and bias. Scientific accuracy had a mean score of 4 (range 4 to 5), indicating acceptable accuracy. Question 19 related to bias had a mean of 4 (range 3 to 5), with one nurse failing to answer. The same nurse did not answer question 20 relating to the interference of bias with intent. The other 3 answered question 20 "no", indicating no consistent evidence of bias as a weakness.

Purpose. Scores for 2 of the 3 questions in the purpose dimension for this handout were widely dispersed. The dimension mean was 3.4 (range 2.7 to 4.3). One nurse strongly disagreed that this handout was designed to reinforce information, while the other 3 agreed. Answers related to the purpose of stimulating behavior change ranged from 1 to 5. These results indicated a lack of consensus among the nurses, and a lack of clarity of purpose in the design of the handout.

Appearance. The appearance dimension mean was 2.9 (range 2.4 to 3.8). The mean score was skewed due to the answers to several questions. This handout did not contain illustrations, thus 2 nurses answered the question related to quality of illustrations as not applicable, while the other 2 gave ratings of 1 and 2 (very low and low appeal). The handout was done in black and white. Three of the nurses answered not applicable to the question related to the use of color, while one rated that question as a 1 (very low appeal). The

question related to highlighting of major concepts had a mean of 3.5 with a widely dispersed range of 1 to 5. The wide range of answers indicated that some discrepancies exist in the interpretation of the questions that make them less objective for the evaluation of this type of printed material. More thorough instructions for answering the questionnaire may also improve the consistency of this dimension. Comments were similar, addressing the lack of eye-catching appeal despite containing well organized, easy to follow information. "I think a magazine article would be more tempting to read", one nurse stated.

Content. The content dimension mean was 3.8 (range 3.4 to 4.5). Outliers included a rating of 2 (poor) for providing adequate scope for objectives, and for summaries given when needed. One nurse commented on the lack of important information such as the benefits of weight-bearing exercise and new drugs on the market for prevention for osteoporosis. The content rating was within the favorable range.

Usefulness. The usefulness dimension mean was 3.9 (range 3.3 to 5). All four questions related to usefulness had a range of 3 to 5 indicating a lack of consistency in perception by the nurses. One nurse commented, "The risk factor information may be helpful for women. Adequate calcium is also important. But I think the omission of any mention of exercise would prevent me from using this for my patients."

Table 8. Table of raw scores and question means: Osteoporosis

Question Number	Expert Nurse 1	Expert Nurse 2	Expert Nurse 3	Author	Question Mean
<u>Purpose</u>					
1	4	4	1	4	3.3
2	4	4	5	4	4.3
3	1	5	2	3	2.8
<u>Appearance</u>					
4	1	2	3	3	2.3
5	3	3	4	4	3.5
6	2	2	3	3	2.5
7	2	NA	1	NA	1.5
8	1	NA	NA	NA	1.0
9	4	3	4	4	3.8
10	4	4	1	5	3.5
<u>Content</u>					
11	4	3	5	4	4.0
12	4	3	5	4	4.0
13	4	2	5	4	3.8
14	5	4	5	4	4.5
15	4	4	5	4	4.3
16	4	4	NA	4	4.0
17	3	4	2	4	3.3
18	2	3	4	2	2.8
19	4	--	5	3	4.0
20	No	--	No	No	
<u>Usefulness</u>					
21	3	3	5	4	3.8
22	4	3	5	4	4.0
23	4	3	5	4	4.0
24	4	4	5	3	4.0
<u>Overall</u>					
25	3	2	5	4	3.5
26	3	3	5	4	3.8
<u>Placement</u>					
27	3	2	5	2	**
28	2	2	5	4	**
29	3	4	1	2	**

Note. Dashes indicate missing data.

**Means not appropriate.

Table 9. Table of means: Osteoporosis

	Expert Nurse 1	Expert Nurse 2	Expert Nurse 3	Author	Dimension Mean
<u>Purpose</u>	3.0	4.3	2.7	3.7	3.4
<u>Appearance</u>	2.4	2.8	2.7	3.8	2.9
<u>Content</u>	3.8	3.3	5.0	3.8	3.8
<u>Usefulness</u>	3.8	3.3	5.0	3.8	3.9
<u>Overall</u>	3.0	2.5	5.0	4.0	3.6
<u>Total mean</u>	3.2	3.3	3.9	3.7	3.5

Overall impression. This handout received a widely dispersed mean score of 3.6 (range 2.5 to 5) for the dimension of overall impression. The nurse who noted the omission of weight-bearing exercise as an important weakness rated this section the lowest (mean of 2.5) and contributed to a skewed mean. One nurse state she would use this because a client "could easily read it in the office, grasp concepts, and ask questions".

Location for placement. Answers related to the location for placement in the nurse practitioner's office were also widely dispersed for all 3 questions. A lack of consensus among the nurses regarding the best location for placement of this handout was demonstrated.

Total mean. The total mean for this handout was 3.5 (range 3.2 to 3.9) despite its low rating for appearance. Two of the nurses had diverse views of

this handout. One stated, "I appreciate this type of material the best. Even if it isn't flashy, it gets the job done, it flows well, can be reviewed in a short amount of time, and is not too detail oriented or overwhelming with information." The other noted the omissions mentioned above and did not believe this handout would be useful. Another nurse indicated that this handout was not appropriate for comprehensive coverage of osteoporosis, but that it could be useful as a part of the education process, despite its lack of color, illustrations, or eye-appeal.

The nurses agreed the target audience best suited for this handout would be women with risk factors for osteoporosis for whom estrogen may be considered. One nurse felt that a woman who was well educated and highly motivated would be the best target audience, consistent with the readability score of grade 11.

Usefulness of MEQ. All 4 nurses rated the MEQ as useful for evaluation of this piece of material. The mean score was 4.5 with a range of 4 to 5 (see Table 5).

Use of an Expert Panel

Judging the efficiency, usefulness and practicality of the use of an expert panel of nurse practitioners to select materials for a resource manual involved consideration of several technical matters. The three nurse practitioners who agreed to participate in this project were easily identified from the author's previous experience and from recommendations of faculty and other nurse practitioners. The nurse practitioners were contacted by phone and advised of

the goals of the project and of the expected time required. All three willingly agreed to participate, and expressed interest in the project and in assisting nurse practitioner students with their projects and learning experiences. Instructions for evaluation using the MEQ, and the material were mailed to the nurses (see Appendix C).

Assembling and distributing three pieces of materials was not a costly or time consuming process. However, use of this process for numerous pieces of material which would be included as resources for client education, not only for the subject of menopause, but for the many other client education needs, would be unreasonably time consuming and costly.

All three nurse practitioners returned the completed evaluations in a timely manner. The time spent on the evaluations and burden of the commitment to participate was not assessed. The practicality of relying on several nurses for evaluating materials on a regular or more involved basis needs to be assessed to judge the practicality of this process for material selection for client education resources.

Organization and analysis of the raw data took the author approximately 8 hours. Spending that much time on data collection and analysis may be an impracticable and inefficient use of the nurse practitioner's time.

Subjective judgment of the efficiency, usefulness and practicality of a nurse practitioner panel to select education materials was made by analysis of the level of agreement among the panel members and the author. As discussed above, many questions had widely dispersed scores, as did many dimension means.

No one nurse consistently scored questions higher or lower than the others in the evaluation of Menopause. Despite the widely dispersed scores

and means for many individual questions, the total mean score for this piece was 4.4 with a narrow range of 4.3 to 4.5, indicating agreement on the quality. The author's scores for this article were closely correlated to the expert nurses, indicating similar judgment of the various dimensions and overall quality.

For the article, Decisions, Expert Nurse 3 scored four of the five major dimensions consistently lower than the other evaluators. Subjective comments offered by the panel explained some of the rationale behind their scores for this article. The individuality of the nurses was apparent in their evaluation. The author's scores were in the middle of the range for all evaluators.

Expert Nurse 2 was consistently lower in scoring of the article, Osteoporosis. Subjective comments offered by this nurse explained the rationale behind these lower scores. Despite a lower score for three of the five dimensions by Expert Nurse 2 (content, usefulness, overall impression), the total mean score of 3.3 was higher than that of Expert Nurse 1 (3.2) for this piece. The total mean score for the piece was 3.5 (range 3.2 to 3.9). The author's scores were in the middle of the range for all dimensions and total mean.

Consistency was apparent in the panel's scoring of the usefulness of the MEQ for evaluation of each individual piece of material, as well as for usefulness of the MEQ globally (see Table 5). Agreement with the statement that the MEQ seemed to measure the quality of printed education materials received a mean score of 4.5 (range 4 to 5), indicating strong face validity. Use of the expert panel to judge the tool provided objective criteria for making a decision regarding the appropriateness of the MEQ. Consistent agreement on the usefulness of the MEQ for evaluation of printed education materials provided sound rationale for its appropriate application in practice.

Conclusions

Decisions Related to Selected Pieces

A decision related to the appropriateness, usefulness and quality of a piece of printed material was based on the absence of content inaccuracy or bias, a mean score of 3.5 or higher, and a match between the recommended target audience and the nurse practitioner's client. The decision points were discussed in more detail in Chapter 3. Decision point outcomes are provided in Table 10.

Menopause: Your Guide to Feeling Good in a New Stage of Life, a commercially produced client education pamphlet, was judged by the panel of nurses to be of high quality and useful. Strengths of this pamphlet included the judgment that it was scientifically accurate and without bias. The panel rated it favorably for appearance, with good use of diagrams, pictures, boxed information and color. Illustrations demonstrated diverse ethnic representation. It was rated high for usefulness. A reading level of grade 8 may make it more appropriate for clients with lower reading abilities (see Table 10)

A weakness of this piece, as evidenced by a response of 1 or 2 (low scores) included the perception by one nurse that the purpose of the material did not include reinforcing information. Subjectively, weaknesses noted were cost, the need for more in-depth information for some clients, and the length of the pamphlet as a deterrent for less motivated clients.

Because of the favorable judgment by the expert panel and the lack of characteristics that disqualify it from consideration, the author considered this to be a high quality education resource, and included it in the resource manual.

Attention will be given to those areas considered weaknesses when this piece is used.

Table 10. Decision point outcomes.

	Title		
	<u>Menopause</u>	<u>Decisions</u>	<u>Osteoporosis</u>
<u>Scientifically accurate*</u>			
Mean Score	4	4	4
<u>Interfering bias**</u>			
No	4	3	4
Yes	0	1	0
<u>Dimension means</u>			
Purpose	4.3	3.9	3.4
Appearance	4.4	2.9	2.9
Content	4.4	4.1	3.8
Usefulness	4.3	3.8	3.8
Overall	4.4	4.0	3.6
<u>Total mean</u>	4.4	3.7	3.5
<u>Note.</u> * question 12 on MEQ.			
** question 20 on MEQ.			

The chapter, "Decisions, What Should I Do?", from Dr. Susan Love's Hormone Book received a total mean score of 3.7 (see Table 10). The nurses demonstrated divergence in judging this chapter. Strengths, as judged by scores above 3.5, and subjective comments included scientific accuracy, offering an in-depth discussion, and questionnaires to assist women in decision making related to hormone replacement.

Weakness were identified by responses of 1 or 2 (low scores) and subjective comments. This chapter received 14 scores of 1 or 2, and the dimension of appearance was rated with a mean of 2.9. Bias created the most concern. The nurses identified bias related to health care professionals and the use of hormones. One solution to this weakness would be to discuss the bias and the perspective of Dr. Love before presenting the material. Appearance was rated as a weakness due to the lack of color and illustrations, and a small typeface.

Questions included in the dimension of appearance seemed to create some confusion among the evaluators, which may have skewed the scores. The scoring for the questionnaires included in the chapter was confusing. The length of the chapter and the grade 12 readability score made this most useful for clients with higher levels of education and motivation. Another weakness identified was the cost of loaning books which may not be returned.

Because of the favorable total mean score and the author's agreement with the expert panel that this piece provided a divergent view of hormone replacement therapy that would be appropriate for select clients, this piece was included in the resource collection. Acknowledgement of the bias and follow-up discussion with the client would minimize the weaknesses identified by the panel, and allow it's strengths to improve the decision-making and self-care skills of the client. Providing follow-up time for clarification of client questions that may arise would also minimize identified weaknesses.

Osteoporosis in Women: Keeping Your Bones Healthy and Strong, a 2 page client education handout, was taken off the AAFP World Wide Web site. The nurse panel scored the handout with a mean score of 3.5 (see Table 10). Scores were widely dispersed for many of the questions. Strengths identified

by the panel as evidenced by scores above 3.5 and subjective comments included scientific accuracy and lack of bias. The handout was short and had well defined headings and bullets to attract attention, making it easy to read. One nurse believed it would be most useful to initiate discussion related to osteoporosis in the office.

Weakness were identified by responses of 1 or 2 (low scores) and subjective comments. Fifteen questions were scored 1 or 2, with eight of those in the appearance dimension. As discussed earlier, a possible diverse interpretation of the questions by the evaluators may have contributed to the widely dispersed and lower scores for this section. The purpose of the handout was not clearly apparent to the nurses, and the lack of color or illustrations were considered weaknesses. One nurse felt this handout lacked comprehensive coverage of the subject, especially with the omission of mention of weight bearing exercise and pharmaceutical therapy other than hormones. The readability grade of 11 made it less useful for women with lower levels of education.

Because of the favorable total mean score and the lack of characteristics which indicated it should be eliminated, the author included this article in the resource manual as a tool to initiate discussion. As with all client education, written materials are only one adjunct, and should be used with many other forms of education, especially face-to-face discussion. Teaching is more than offering information, it is connecting with the client in a way that will allow the client to make informed decisions for self-care. Osteoporosis risks and prevention strategies are reflected in behavior and self-care activities, making information and education the foundation for addressing this issue. Other resources related to osteoporosis will also be sought.

Decisions Related to Usefulness of the MEQ

The Health Promotion Project: Materials Evaluation Questionnaire (MEQ) was consistently judged to be useful for evaluation of printed materials. The nurses judged the MEQ as useful in evaluating each piece of material, and also judged it useful globally. Face validity was scored 4.5 (range 4 to 5), confirming that the MEQ seemed to measure the quality of printed education materials.

Weaknesses of the MEQ were identified through analysis of the scores. Widely dispersed scores for the questions in the purpose dimension indicated a lack of consensus regarding this characteristic. The nurse practitioner must be able to clearly define the purpose of each piece of education material to effectively use it in the education plan. The nurses responded by disagreeing or agreeing with questions on the MEQ which offered suggestions of the intended purpose of each piece. Responses of 1 or 2 (low scores, indicating disagreement) in this dimension would contribute to a skewed lower total mean score for the piece. The total mean score was used as a gauge of quality. Disagreement with the questions, (responses of 1 or 2) however, may not indicate the perception of decreased quality of the piece.

Questions in the appearance dimension related to quality of illustrations, use of color and typeface were given widely dispersed scores by the evaluators, indicating a lack of consistent interpretation of the questions. One confusion was whether to answer "not applicable" or a low rating of 1 or 2 when color or illustrations were not used. A lack of subjective comments on these aspects did not allow analysis of the rationale for the answers, for example: Did the lack of the use of color or illustrations appreciably decrease the appeal of the piece?

Question 16 in the content dimension was marked "not applicable" by one evaluator, leading to the possibility that it was a confusing question. In

stating “needed background given to enable understanding”, the question arises as to whether this is interpreted as “this piece needed to have more background given to enable clients to understand” or “ the necessary background that would enable the client to understand was provided”. Further instructions may solve this confusion.

The recommended location for placement dimension did not seem to contribute to a score of quality. A lack of consensus regarding the best placement of each piece of material showed the individuality of each practice setting and practitioner.

Overall, the MEQ was rated by the panel to be a useful tool. It was easy to use, and assessed characteristics of quality that were identified in the literature. The panel's consistently high rating for the MEQ validated the usefulness of the tool, and provided confidence that the MEQ could be used by the nurse practitioner in selection of client education materials.

Decisions Related to Use of An Expert Panel

The expert panel of nurse practitioners who participated in the project were easily identified, contacted without difficulty, and willing to assist. They were not asked about their perception of the burden of time and effort to evaluate the materials and the MEQ. No statement can be made about how practical the nurses thought it would be to use a panel for selection of resources.

The nurse practitioner will develop an extensive collection of resources related to many health issues. The cost of mailing the three pieces was not high, but cost could become an issue if many pieces were to be mailed. The

organization and analysis of the data was time consuming, and would not be practical for larger volumes of data.

Divergent opinions were evident in many of the scores and comments. When faced with divergent opinions, the nurse practitioner would need to choose those most congruent with the philosophy and purpose of that practice. Divergent opinions help to broaden one's perspective, so seeking opinions would be helpful, but also could be confusing and unnecessary for selecting most resources.

The most practical and applicable outcome of the employment of the expert panel was validation that the MEQ was useful and appropriate for material evaluation. Use of the MEQ allowed the nurse practitioner to objectively select high quality, useful, appropriate materials for client education.

Limitations

One limitation of this project was that of the small selection of three pieces of material that were evaluated. There are many more issues not addressed by these pieces, and many more sources for information. A menopause resource manual of printed materials would contain only part of the resources that might be included in a collection of materials for education. Videos, computer assisted learning software, books, newsletters, and other support systems would be added to the resource collection.

The small number in the expert panel provided limited data on the select pieces as well as the usefulness of the MEQ. No data was gathered regarding the expert panel's perception of the process used in this project. Their view of

the time burden, expense and usefulness would provide a fuller evaluation of the process of using a panel for material selection.

The original publication describing the MEQ did not demonstrate validity of the MEQ and no subsequent literature was found on the use of the tool or its validity. Only face validity was demonstrated by the nurse evaluators in this project.

Implications for Practice

The nurse practitioner could apply Orem's Self-care framework in planning health education. Given adequate information, skills, direction and support, the client would be better able to take responsibility for independent health care. The self-care framework provides the nurse practitioner with a plan for providing the client with pertinent information to assist in exploration of options and choices. An informed client would be better equipped with coping abilities and decision-making skills and better able to appropriately use the health care system.

Results of the nurse panel's judgment of quality and usefulness of the selected pieces of printed education material indicate that all 3 pieces were appropriate for inclusion in the resource manual. Strengths and weakness were identified, which would assist the nurse practitioner in the most appropriate use of each piece. Education is a personal interaction between the nurse and the client that is unique for each situation. Opinions of individuals on a panel may not fit the needs, personality or practice of a specific nurse practitioner.

As scientific, health, and medical knowledge increases, the risks,

therapeutics and standards of care for menopausal health will change, making the selected pieces of material obsolete. New health information is being released daily. Frequent review and revision of any health information is necessary.

The MEQ was a valid and useful tool to use in material selection. It was easy to use. Important characteristics of printed materials that were identified in the literature were evaluated with the tool. Strengths and weaknesses of each piece of material were easily identified by use of the tool. Weaknesses of the tool itself were identified and addressed by this author. The addition of a readability score would allow the nurse practitioner to better match the material to the client.

Revision of the MEQ would make the tool easier to use and more objective. Because any piece of material that is scientifically inaccurate or contains bias which interferes with the intent of the item would not be considered as a resource for client education, the two questions which deal with those issue should be listed first. This would allow for immediate deletion of unacceptable materials before time is spent on other parts of the evaluation.

The questions which evaluate the purpose dimension using the Likert scale should be eliminated and replaced with a single question asking for the nurse to identify the purpose of the piece. The use of color illustration or the style and size of typeface may not adversely impact the quality of the piece. In this case, the evaluator should use a "not applicable" response. However, if the evaluator does believe that those characteristics impact the quality, the Likert scale scores would contribute to the total mean score which provides a rating of quality of the piece.

Question 16 related to needed background should be reworded and clarified. The placement dimension should be condensed into a subjective comment of the best placement to allow for individualization within each practice situation. The best placement in practice does not affect the quality of a piece of material.

The process of employing a panel of expert nurse practitioners for selection of resource materials on a larger scale would not be useful, efficient nor practical. However, the use of an expert panel may be used occasionally for select materials or situations.

One outcome of the process of using a nurse panel was validation of the MEQ. The best judge of materials will be the nurse who will be using the materials. The MEQ provides adequate guidance for judging quality of printed materials.

Recommendations

Listed below are several recommendations, questions and needs that might be further explored.

1. The MEQ should be revised as suggested above and tested for validity.
2. Outcomes of this project which indicated the MEQ was a useful, appropriate tool for the nurse practitioner to utilize for selection of printed materials for client education should be communicated through journal articles or nurse practitioner education events.
3. Other topics within the practice area of the nurse practitioner that would benefit from a resource collection should be identified.
4. Existing materials should be evaluated for readability score.

5. Materials should be evaluated for cultural sensitivity. The need for development of materials that are sensitive to the culture of clients in the nurse practitioner's practice should be studied. In central Montana those would include the Hutterite and Native American populations.
6. A tool should be developed to evaluate quality of other forms of resources such as video tapes and computer-assisted learning programs.
7. The appropriateness and usefulness of application of the Orem Self-Care Framework to client health education in the nurse practitioner practice should be studied.

Summary

The purpose of this project was to begin development of a resource manual for client education. Education is an important part of every nurse-client contact. Printed materials are an economical and effective medium for providing information. The abundance of materials available for the nurse practitioner and the client make the selection of materials difficult.

A process of printed education material evaluation was developed for the nurse practitioner to use when selecting materials for health education. Menopause was chosen as an example of a common health issue for which the nurse practitioner will provide health education. The process involved application of the Health Promotion Project: Materials Evaluation Questionnaire (MEQ) to three different pieces of printed education materials related to menopause. Each piece was selected for its variable focus and source.

An expert panel of three nurse practitioners and the author used the MEQ to judge each piece. One outcome of this project was a consensus that the selected pieces were of adequate quality and usefulness to be included in the resource manual.

The expert nurses and the author also judged the face validity and usefulness of the MEQ for printed material selection. The MEQ was judged to be an appropriate and useful tool to assist the nurse practitioner in selection of education materials.

The use of an expert panel of nurse practitioners for material selection on a large scale may not be practical or feasible. However, the opinion of other nurse practitioners may be helpful in evaluation of select pieces.

REFERENCES CITED

REFERENCES CITED

American Academy of Family Physicians. (1997). Osteoporosis in women: Keeping your bones healthy and strong. [On-line]. Available: home.AAFP.ORG/patientinfo/osteopor.html

American Academy of Nursing Expert Panel on Culturally Competent Nursing Care (1992). American Academy of Nursing Expert Panel Report: Culturally competent health care. Nursing Outlook, 40, 277-283.

American Academy of Nursing Expert Panel on Women's Health (1997). Women's health and women's health care: Recommendations of the 1996 AAN Expert Panel on women's health. Nursing Outlook, 45, 7-15.

American Nurses Association. (1996). Scope and standards of advanced practice registered nursing. Washington, DC: American Nurses Publishing.

Anderson, J. M. (1990). Health care across cultures. Nursing Outlook, 38, 136-139.

Bell, M. L. (1995). Attitudes toward menopause among Mexican American women. Health Care for Women International, 16, 425-435.

Benner, P. (1984). From novice to expert: Excellence and power in clinical nursing practice. Menlo Park, CA: Addison-Wesley.

Bernhard, L. A. & Sheppard, L. (1993). Health, symptoms, self-care, and dyadic adjustment in menopausal women. Journal of Obstetric, Gynecologic, and Neonatal Nursing, 22, 456-461.

Bernier, M. J. (1993). Developing and evaluating printed education materials: A prescriptive model for quality. Orthopaedic Nursing, 12, 39-46.

Bernier, M. J. & Yasko, J. (1991). Designing and evaluating printed education materials: Model and instrument development. Patient Education and Counseling, 18, 253-263.

Brown, M. A. & Waybrant, K. M. (1988). Health promotion, education, counseling, and coordination in primary health care nursing. Public Health Nursing, 5, 16-23.

Buchwald, D., Caralis, P., Gany, F., Hardt, E. J., Johnson, T. M., Muecke, M. A. & Putsch, R. W. (1994). Caring for patients in a multicultural society. Patient Care, 1994, June, 105-123.

Cook, M. J. (1993). Perimenopause: An opportunity for health promotion. Journal of Obstetric, Gynecologic and Neonatal Nursing, 22, 223-228.

Davis, T. C., Crouch, M. A., Wills, G., Miller, S. & Abdehou, D. M. (1990). The gap between patient reading comprehension and the readability of patient education materials. The Journal of Family Practice, 31, 533-538.

Estey, A., Kemp, M., Allison, S. & Lamb, C. (1993). Evaluation of a patient information booklet. Journal of Nursing Staff Development, 9, 278-283.

Ferda, M. C. (1994). Childbearing, reproductive control, aging women, and health care: The projected ethical debates. Journal of Obstetric, Gynecologic and Neonatal Nursing, 23, 144-152.

Fishbein, E. G. (1992). Women at midlife: The transition to menopause. Nursing Clinics of North America, 27, 951-957.

Fitzpatrick, J., Stevenson, J. S. & Polis, N. S. (Eds.). (1994). Nursing research and its utilization: International state of the science. New York: Springer.

Gibson, P. A., Ruby, C. & Craig, M. D. (1991). A health/patient education database for family practice. Bulletin of the Medical Library Association, 79, 357-369.

Gleason, S. (1994). Menopause: It's not a disease. Natural approaches to a change of life. Good Medicine, Spring, 8-13.

Hammond, C. B. (1997). Management of menopause. American Family Physician, 55, 1667-1674.

Hampson, S. E. & Hibbard, J. H. (1996). Cross-talk about menopause: enhancing provider-patient interactions about the menopause and hormone therapy. Patient Education and Counseling, 27, 177-184.

Harper, D. C. (1994). Perimenopause and aging. In R. Lichtman & S. Papera (Eds.), Gynecology: Well-woman care (pp. 405-421). Norwalk, CT: Appleton & Lange.

Hellerstein, E., Hume, L. & Offen, K. (1982). The older woman. In Victorian women: A documentary account of women's lives in nineteenth-century England, France and the United States. (pp. 328-336). Stanford, CA: Stanford University Press.

Krames Communications. (1996). Menopause: Your guide to feeling good in a new stage of life [Brochure]. San Bruno, CA: Author.

Li, S., Lanuza, D., Gulanick, M., Penckofer, S. & Holm, K. (1996). Perimenopause: The transition into menopause. Health Care for Women International, 17, 293-306.

Lipson, J. G. (1996). Culturally competent nursing care. In J. G. Lipson, S. L. Dibble & P. A. Minarik (Eds.), Culture and nursing care: A pocket guide (pp. 1-10). San Francisco, CA: University of California, San Francisco Nursing Press.

Love, S. M. & Lindsey, K. (1997). Dr. Susan Love's hormone book. New York: Random House.

Maddox, M. A. (1992). Women at midlife: Hormone replacement therapy. Nursing Clinics of North America, 27, 959-969.

Mailloux, S. L., Johnson, M. E., Fisher, D. G. & Pettibone, T. J. (1995). How reliable is computerized assessment of readability? Computers in Nursing, 13, 221-225.

Martin, K. A. (1995). Menopause and estrogen replacement therapy. In K. J. Carlson & S. A. Eidenstat (Eds.), Primary care of women (pp. 251-256). St. Louis, MO: Mosby.

McElmurry, B. J. & Huddleston, D. S. (1991). Self-care and menopause: Critical review of research. Health Care for Women International, 12, 15-26.

McLaughlin, G. H. (1969). SMOG grading--a new readability formula. Journal of Reading, 1969, May, 639-646.

Millonig, V. L. (1996). Health promotion opportunities for the occupational health nurse. American Association of Occupational Health Nursing Journal, 44, 585-595.

National Organization of Nurse Practitioner Faculties (1995). Advanced nursing practice: Curriculum guidelines and program standards for nurse practitioner education. Washington, DC: Author.

Nussbaum, S. R. (1995). Screening for osteoporosis. In A. H. Goroll, L. A. Lawrence & A. G. Mulley (Eds.), Primary care medicine (pp. 730-731). Philadelphia: Lippincott.

Orem, D. E. (1995). Nursing: Concepts of practice. (5th ed.) St. Louis: Mosby.

Owens, P. M., Johnson, E. M., Frost, C. D., Porter, K. A. & O'Hare, E. (1993). Reading, readability, and patient education materials. Cardiovascular Nursing, 29, 9-13.

Padonu, G., Holmes-Rovner, M., Rothert, M., Schmitt, N., Kroll, J., Rovner, D., Talarczyk, G., Breer, L., Ransom, S., & Gladney, E. (1996). African-American women's perception of menopause. American Journal of Health Behavior, 20, 242-251.

Price, J. L. & Cordell, B. (1994). Cultural diversity and patient teaching. The Journal of Continuing Education in Nursing, 25, 163-166.

Redman, B. K. (1993). The process of patient education. (7th ed.) St. Louis: Mosby.

Rice, M. & Valdivia, L. (1991). A simple guide for design, use, and evaluation of educational materials. Health Education Quarterly, 18, 79-85.

Scharbo-Dehaan, M. (1994). Management strategies for hormonal replacement therapy. Nurse Practitioner: American Journal of Primary Health Care, 19, 47-57.

Scharbo-Dehaan, M. (1996). Hormone replacement therapy. Nurse Practitioner: American Journal of Primary Health Care, 21, 1-15.

Smith-Rosenberg, C. (1974). Puberty to menopause: The cycle of femininity in nineteenth-century America. In Clio's consciousness raised (pp. 23-37). New York: Harper and Row.

Spector, R. E. (1995). Cultural concepts of women's health and health-promoting behaviors. Journal of Obstetric, Gynecologic and Neonatal Nursing, 24, 241-245.

Sumner, W. (1991). An evaluation of readable preventive health messages. Family Medicine, 23, 463-466.

Wagner, P. J., Kuhn, S., Petry, L. J. & Talbert, F. S. (1995). Age differences in attitudes toward menopause and estrogen replacement therapy. Women and Health, 23, 1-16.

Webb, P. (Ed.). (1994). Health promotion and patient education: A professional's guide. London: Chapman & Hall.

Wilson, F. L. (1996). Patient education materials nurses use in community health. Western Journal of Nursing Research, 18, 195-205.

Wilmoth, M. C. (1996). The middle years: Women, sexuality, and the self. Journal of Obstetric, Gynecologic and Neonatal Nursing, 25, 615-621.

Wilton, J. & Noonan, M. D. (1991). A menopause center: Bridging the midlife gap. NAACOG's Clinical Issues, 2, 527-532.

Woods, N. F. (1994). There's more to it than menopause: Midlife women's health. In J. J. Fitzpatrick, J. S. Stevenson & N. S. Polis (Eds.), Nursing research and its utilization: International state of the science (pp. 29-51). New York: Springer.

APPENDICES

APPENDIX A
TOOLS

HEALTH PROMOTION PROJECT: MATERIALS EVALUATION QUESTIONNAIRE (MEQ)

Title: _____

Objective: In a few words, what do you think is the main purpose of this material? _____

It is designed to	Strongly <u>disagree</u>	<u>Disagree</u>		<u>Agree</u>	Strongly <u>agree</u>	
1. reinforce information.	1	2	3	4	5	NA
2. provide new information.	1	2	3	4	5	NA
3. stimulate behavior change.	1	2	3	4	5	NA

Appearance: Please rate the appearance of the material by answering each question below.

	<u>Very low appeal</u>	<u>Low appeal</u>		<u>High appeal</u>	<u>Very high appeal</u>	
4. At first glance it attracted my attention.	1	2	3	4	5	NA
5. It held my attention.	1	2	3	4	5	NA
6. Overall appearance.	1	2	3	4	5	NA
7. Quality of illustrations.	1	2	3	4	5	NA
8. Use of color.	1	2	3	4	5	NA
9. Typeface (large enough, attractiveness, etc.)	1	2	3	4	5	NA
10. Highlighting of major concepts.	1	2	3	4	5	NA

Comments _____

Content: Please rate the content of material.

	<u>Very poor</u>	<u>Poor</u>		<u>Good</u>	<u>Very good</u>	
11. Up-to-date.	1	2	3	4	5	NA
12. Scientifically accurate.	1	2	3	4	5	NA
13. Adequate scope for objective(s).	1	2	3	4	5	NA
14. Overall organization.	1	2	3	4	5	NA
15. Logical flow of ideas.	1	2	3	4	5	NA
16. Needed background given to enable understanding	1	2	3	4	5	NA
17. Summary(ies) given when needed.	1	2	3	4	5	NA
18. The management of fear content	1	2	3	4	5	NA
19. Fair presentation given (e.g., avoids sexism, ethnic bias, manufacturer bias, etc.)	1	2	3	4	5	NA
20. Does the bias interfere with the intent of the item?					Yes _____ (1) No _____ (2)	

Comments _____

Usefulness: Please respond to the statements below by circling the best response.

	<u>Strongly disagree</u>	<u>Disagree</u>		<u>Agree</u>	<u>Strongly agree</u>	
21. It is useful for its intended audience.	1	2	3	4	5	NA
22. It is believable.	1	2	3	4	5	NA
23. It is understandable.	1	2	3	4	5	NA
24. Requires little or no explanation.	1	2	3	4	5	NA

Comments _____

Overall: Please respond to the statements below.

	<u>Strongly disagree</u>	<u>Disagree</u>		<u>Agree</u>	<u>Strongly agree</u>	
25. Overall I would recommend that physicians and nurse practitioners use this material with patients.	1	2	3	4	5	NA
26. Overall this material meets its objectives.	1	2	3	4	5	NA

Remarks _____

Placement: Please circle all that apply.

	<u>Strongly disagree</u>	<u>Disagree</u>		<u>Agree</u>	<u>Strongly agree</u>	
27. Should be placed in the physician's or nurse practitioner's waiting room.	1	2	3	4	5	NA
28. Should be placed in the exam room.	1	2	3	4	5	NA
29. Should be stored for occasional use.	1	2	3	4	5	NA

30. Other suggested settings _____

Comments _____

Professional Status:

	<u>PGY 1</u>	<u>PGY2</u>	<u>PGY3</u>	<u>number of years</u>
a. Resident	__PGY 1	__PGY2	__PGY3	
b. Family physician faculty	__under 6	__6-15	__16-25	__26 or over
c. Family physician	__under 6	__6-15	__16-25	__26 or over
d. R.N.	__under 6	__6-15	__16-25	__26 or over
e. Other (Specify) _____	__under 6	__6-15	__16-25	__26 or over
f. Nurse practitioner	__under 6	__6-15	__16-25	__26 or over

Gender: __Male (1) __Female (2)

Age Range: __under 25 __25-35 __36-45 __46-55 __56-65 __over 65

Addendum to MEQ

Comments

Title:

1. For what target audience would this piece of material best be suited?
2. Please provide any additional comments on this piece of material.
3. The MEQ was a useful tool for evaluation of the quality of this piece of material.

Strongly
disagreeDisagreeAgreeStrongly
agree

1

2

3

4

5

Addendum to MEQ

Opinion of the Materials Evaluation Questionnaire (MEQ)

(Please answer the following questions after you have completed the MEQ on all 3 pieces of material)

Considering the Materials Evaluation Questionnaire (MEQ) globally, please rate the MEQ by answering the following questions.

1. The MEQ is a useful tool for evaluation of printed education materials.

<u>Strongly disagree</u>	<u>Disagree</u>		<u>Agree</u>	<u>Strongly agree</u>
1	2	3	4	5

2. The MEQ seemed to measure the quality of printed education materials.

<u>Strongly disagree</u>	<u>Disagree</u>		<u>Agree</u>	<u>Strongly agree</u>
1	2	3	4	5

3. Additional comments regarding the MEQ.

4. Would you like a copy of the completed project?

Thank You.

APPENDIX B
PERMISSION LETTERS

November 16, 1997

Patricia A. Gibson, PhD
59 Heatherbrooke
Bella Vista, AR 72715

Dear Dr. Gibson,

I am writing to seek permission to use the evaluation tool for printed educational materials described in your article "A health / patient education database for family practice" published in the Bulletin of the Medical Library Associations in October 1991.

I am presently a Montana State University graduate student in the Family Nurse Practitioner program at the Great Falls Campus. The focus of my Professional Project is the use of printed educational materials related to menopause for the Family Nurse Practitioner to use for client education in the primary care setting. As was discussed in your article, the overabundance of health promotion / patient education materials creates a dilemma for the health care practitioner in evaluation and selection of printed materials. I would like to apply the Health Promotion Project: Materials Evaluation Questionnaire to a selection of educational materials which focus on menopause to evaluate the tool's reliability for use by Nurse Practitioners, and to provide a selection of quality educational materials for use in my future practice.

My graduate advisor, Dr. Daryl Ries, spoke with you last week, and gained verbal permission from you to use this tool. I do need written permission to include in the appendix of the project. Amy Baldrige from the Medical Library Association stated that Medical Library Association permission was not necessary if you grant permission. A copy of your letter will be forwarded to her.

Because my project is applied to the Nurse Practitioner, I would like your permission to add the words "Nurse Practitioner" as an option for health care provider in question 25, 27, and in the demographic section. Those changes are marked in red on the enclosed copy.

Are there printed copies of this questionnaire I could use? Or may I re-type the questionnaire?

Thank you for your assistance.

Sincerely,

Rosemary Youderian, RN
MSU Graduate Student

Daryl Ries, RN, PhD
Graduate Student Advisor

December 3, 1997

Patricia Gibson, Ph.D.
59 Heatherbrooke Ln.
Bella Vista AR 72715

Rosemary Youderian, R.N.
Montana State University
College of Nursing
Great Falls Campus
2800 11th Ave. South
Suite 4
Great Falls MT 59405

Dear Ms. Youderian:

This is to confirm in writing my permission to you to use the evaluation form I developed to evaluate patient education materials for the family practice database, cited in the Bulletin of the Medical Library Association article of October 1991. Your research project sounds worthwhile and a very reasonable application of the review form.

I also grant permission to add "Nurse Practitioner" as an option for health care provider in question 25,27, and in the demographic section.

I regret that I do not have clean copies available to send you of the form used in the study, but you may want to re-type it anyway, to meet your own formatting needs.

Good luck with your exciting project. If you do publish the results of your study, I would very much appreciate receiving a reprint.

Sincerely,

A handwritten signature in cursive script that reads "Pat Gibson".

Patricia A. Gibson, Ph.D.

APPENDIX C
INSTRUCTIONS TO EXPERT NURSE PANEL

January 23, 1998
(Address)

(Nurse Expert)
(Address)

Dear (Expert Nurse),

Thank you for your willingness to participate in my professional project as an expert nurse practitioner. Your insight into selection of materials for client education is greatly appreciated, and will be invaluable to me as I begin my practice.

This professional project is part of the requirements for the Master of Nursing degree from Montana State University's Family Nurse Practitioner program. The major purpose of this project is to begin the development of a resource manual that I can use in my practice when educating women about menopause.

Objectives aimed at attaining that goal include exploring a process by which printed education materials can be evaluated, then applying that process to a selection of materials related to menopause. I have identified a tool to use for evaluation of the quality of printed materials which I would like you to use.

Enclosed you will find 3 selections of printed materials. Attached to each piece is a copy of the Health Promotion Project: Materials Evaluation Questionnaire (MEQ) and a page for your comments about each piece. The last two pages elicit your opinion of the MEQ as a tool for use in evaluation of printed education materials.

Instructions

1. Review the MEQ so that when reading the education materials you will have a frame of reference.
2. Select the first piece of material and read it. Then, answer each item on the MEQ and the questions on the blue page.
3. Repeat step 2 for the second and third pieces of material.
4. Consider the MEQ in a global sense, and respond to the questions on the pink page as to the validity of the MEQ, and to its overall usefulness.
5. Return the questionnaires to me in the enclosed envelope by Feb. 9, 1998. You may keep the pieces of material.

Should you have any questions, please contact me at:
(Address),

or you may contact my advisor:

Daryl T. Ries, PhD, RN
Montana State University College of Nursing
Great Falls Campus
2800 11th Avenue South
Suite 4
Great Falls, MT 59405
(406) 455-5615.

I would be happy to send a complete copy of the project to you if you would like.

Thank you for your timely attention to this matter, and for your invaluable assistance. Any comments or suggestions from your experience and expertise will be immensely helpful and appreciated.

Sincerely,

Rosemary Youderian, RN, BSN