A CLINICAL PROTOCOL FOR ENHANCING SOCIAL SUPPORT IN HYPERTENSIVE CLIENTS BY ADVANCED PRACTICE NURSES

BY

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A SCHOLARLY PROJECT

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Abstract

Hypertensive client adherence to therapeutic regimens presents a problem for advanced practice nurses due to the long-term chronic nature of the disease and its treatment. Social support has been found to enhance adherence, health and well-being in clients who are being treated for a chronic disease which has a complex therapeutic regimen like hypertension. The focus of this scholarly project was the development of a protocol for use by advanced practice nurses to enhance social support in hypertensive clients.

The background for the protocol is presented. The steps in the protocol are defined and described for clients with high and low social support. Appropriate time and cost factors are discussed. Suggestions for implementation and evaluation are provided. Nurses in advanced practice are in an ideal position to influence patient outcomes positively by use of an effective, supportive intervention.

Acknowledgements

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The Problem

Introduction

Hypertension is one of the most prevalent cardiovascular diseases causing morbidity and mortality in the United States today (American Heart Association, 1992). The 1988 report of the Joint National Committee on Detection, Evaluation and Treatment of High Blood Pressure states that there are over 60,000,000 people in the United States who have been diagnosed as hypertensive (National Institutes of Health [NIH], 1988). The American Heart Association in its 1992 report Cardiovascular Statistics, states that there are 62,770,000 people with hypertension. These statistics represent a large part of the population and are evidence of the enormity of the problem in the United States. The contribution of this problem to the cost of health care in this country is significant especially when one considers that only thirty percent of clients diagnosed as hypertensive have good control of their blood pressure (Brunton, 1990). Uncontrolled hypertension results in complications that require hospitalization (Williams, 1991), thus increasing the

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cost of the affected individual's care above what it would be if their disease was under control with primary care only. Hospital care is more expensive than primary care (American Heart Association, 1992). The resulting disability from untreated hypertensive disease also has an economic impact by causing lost productivity by workers (American Heart Association, 1992). The economic impact alone is enough to cause concern among health care providers without the additional problem of loss of quality of life which results from uncontrolled hypertension.

Hypertension predisposes its victims to atherosclerosis, heart attack and strokes (NIH, 1988; Williams, 1991). The disease, over time, also causes kidney damage, retinopathy, left ventricular hypertrophy and cardiomegaly. If left untreated, hypertension can shorten a life span from ten to twenty years (Williams, 1991). Studies which have been conducted over a span of time have shown antihypertensive drug therapy reduces morbidity and mortality in moderate to severe hypertension (Harper & Forker, 1992). Drug therapy is also recommended for those with mild blood pressure elevations (90 to 104 mm Hg diastolic) when they possess other cardiovascular risk factors such as diabetes, target organ damage, atherosclerosis, family history of cardiovascular disease, obesity, and/or history of cigarette

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smoking (Rodnick, 1990). Individuals with mild hypertension and no cardiovascular risk factors may be treated with non-pharmacological measures such as diet, exercise, and stress reduction (Hypertension Detection and Follow-up Program Cooperative Group [HDFPCG], 1979; Hypertension Detection and Follow-up Program Cooperative Group [HDFPCG], 1982; NIH, 1988; Rodnick, 1990; Williams, 1991). Drug therapy for more severe hypertensive disease is more effective when combined with low sodium diet, weight reduction, exercise and stress reduction (NIH, 1988; Williams, 1991).

In the past decade much progress has been made in reducing morbidity and mortality from hypertension. New drugs have been discovered which are very effective in controlling blood pressure (Harper & Forker, 1992). More people with hypertension are being diagnosed and treated, but among those who are diagnosed, not all are receiving the benefits they could from therapy. These hypertensive individuals are not following their therapeutic regimen (Brunton, 1990). Adherence to hypertensive therapy (drugs, low sodium diet, weight control, and exercise) requires a long-term major behavioral change for clients (Williams, 1991), and hypertension at least initially is asymptomatic. Adding a behavior such as taking medication requires less effort and commitment than changing dietary and activity

behavior. The therapeutic regimen for hypertension does not relieve symptoms but prevents target organ damage and the resultant symptomatology of untreated hypertension. If this regimen requires such great effort from the client, involving taking medication regularly over a long period of time as well as the changes in exercise and dietary behavior, clients with no symptoms may not see the need for making such an effort that has no immediate benefits for them (Brunton, 1990).

Nurses claim the promotion of client adherence as one of their major responsibilities and functions (Simons, 1992). Nurses can play a major role in the long-term control of high blood pressure in that they can work with clients over time using a variety of strategies to encourage a client's adherence. Miller, Wikoff, Garrett, McMahon & Smith (1990) found that when nurses encouraged a partner's support of the client, a client's adherence with the therapeutic regimen was improved. These authors found that nursing interventions did work to improve adherence, but adherence dropped off within two years after the interventions ceased. Nurses need to find strategies to increase a client's adherence to the extent that clients will follow their therapeutic regimen without the close monitoring of the nurse. One of these strategies is to use a client's social support system to help the client

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follow the therapeutic regimen. There is a lack of nursing research in existence which uses nursing interventions to encourage partners and others in a client's social support system to help the client adhere to a therapeutic regimen. More such research needs to be done (Simons, 1992).

Social support is a factor in adherence to therapeutic regimens, it is certainly a factor in the outcome of disease (Primomo, Yates & Woods, 1990). Primomo et al. (1990) cite research in which social support was strongly correlated with recovery from illness, and Roberts (1988) reports some reliable evidence in the adherence literature that social support relates positively to adherence behavior or behaviors which are health enhancing. Hubbard, Muhlenkamp and Brown (1984) found a relationship between social support and adherence with women having more social support and higher adherence scores than men. Meichenbaum and Turk (1987) list lack of social support as one of the client variables affecting adherence to therapy and recommend asking the client who is the most significant person in their life who may help them follow the treatment regimen. These authors suggest asking the client for permission to include this person or family members who could help by giving them information about the client's disease and its treatment and

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identifying how these support persons could help the client adhere to the treatment regimen.

Problem Statement

If drug therapy and behavioral changes such as exercise and dietary changes result in reduced morbidity and mortality, then it is crucial that a hypertensive client agrees to follow the therapeutic regimen and does in fact adhere to the treatment plan. The advanced practice nurse needs to assess the client's ability to follow the regimen and those factors in the client's life which may enhance adherence. Nurses in advanced practice in primary care who are treating hypertensive clients should as part of a hypertensive protocol assess a client's social support system. Clients' adherence to a therapeutic regimen is poor due to the life-style changes involved and the use of a client's social support system is recommended to help a client with the therapeutic regimen (NIH, 1993). Nursing literature has no clear evidence of how to determine social support, what it does and how it influences adherence. There have been few nursing interventions suggested to enhance client adherence to a therapeutic regimen for clients with hypertension.

The purpose of this scholarly project was to develop a protocol to describe: (1) assessment of factors in a client's

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social support system which are thought to enhance the client's adherence to a therapeutic regimen and (2) interventions to enhance or provide four forms of functional social support to promote adherence of a hypertensive client to his/her therapeutic regimen. The instrument to be used to measure social support is the MOS Social Support Survey developed by Sherbourne and Stewart (1991) and tested on over 2,000 clients. The instrument measures four kinds of functional social support. These four kinds of functional support are, emotional/information support, social-interactional support, tangible support and affective support. The assessment would be part of a protocol directed toward treatment of a client who has been diagnosed as hypertensive. Interventions discussed in the protocol are those specific to enhancing social support for clients.

Hypertension

The hypertensive client for whom this protocol is designed has essential or primary hypertension. Essential or primary hypertension is also known as idiopathic hypertension (NIH, 1988; Parker-Cohen, Richardson & Hook, 1990; Williams, 1991). Primary or essential hypertension is elevation of both systolic and diastolic blood pressure sustained over time. Those diagnosed as hypertensive will have at least three consecutive blood pressure readings of 140 mm/Hg or

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more systolic and 90 mm/Hg or more diastolic taken in a clinical setting (NIH, 1993; Parker-Cohen et al. 1990; Williams, 1991). The blood pressure should be re-checked at least twice each time it is found to be elevated and should be measured under conditions that ensure the finding is an example of the client's usual blood pressure level (NIH, 1988). The conditions under which the blood pressure should be measured are that the client is seated and has rested for at least five minutes, has not had a caffeine drink or smoked for at least a half an hour and that the blood pressure cuff is appropriately sized and an accurate measuring device is used to take and record both systolic and diastolic pressures. Diastolic pressure should be recorded as heard at the fifth Korotkoff sound (NIH, 1988).

Essential hypertension affects 92% to 94% of those who are hypertensive in the general population and has no known underlying cause (Williams, 1991) therefore, treatment relies on the control of blood pressure elevation to prevent damage to vital organs such as the kidneys, cardiovascular system and retina of the eye. It is thus crucial that clients adhere to their therapeutic regimen. Secondary hypertension has a known cause such as diseased kidneys, endocrine dysfunction or oral contraceptives (NIH, 1988; Parker-Cohen et al., 1990; Williams, 1991). Essential hypertension could

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result from a combination of complex physiological factors involving, "1. increases in blood volume, 2. inappropriate auto regulation, 3. over-stimulation of sympathetic neural fibers in the heart and vessels, 4. water and sodium retention by the kidneys, and 5. hormonal inhibition of sodium-potassium transport across cell walls in the kidneys and blood vessels" (Parker-Cohen et al., 1990, p. 921). Essential hypertension thus has no cure. It is a long-term chronic disease. Secondary hypertension may be cured by surgical treatment, cessation of oral contraceptives or treatment of the underlying cause if it is kidney disease or endocrine dysfunction (Parker-Cohen et al., 1990). While social support enhances adherence to a therapeutic regimen for both essential and secondary hypertension (Meichenbaum & Turk, 1987), the chronicity of essential hypertension makes social support crucial in helping a client follow a therapeutic regimen over time. The health care provider needs to enlist the aid of the family and social network of a client to help them follow the more complex treatment plan of essential hypertension which requires considerable behavioral change (Brunton, 1990). A standard social support protocol for both essential and secondary hypertension would not be appropriate.

In hypertension the arterial vessels are constricted and cause peripheral resistance to blood flow or there is increased cardiac output or a combination of the two factors at work (Parker-Cohen et al., 1990; Williams, 1991). Certain factors predispose individuals to hypertension. These factors include excessive alcohol intake, obesity, diabetes, family history of hypertension, effects of aging, being of African-American descent, ingesting large amounts of sodium, cigarette smoking, labile blood pressure, and being male (Parker-Cohen et al., 1990; Williams, 1991). Thus race, sex, family history and life-style are important factors in the development of chronic hypertension. Race, sex and family history cannot be modified nor can the existence of glucose intolerance or diabetes. Lifestyle factors such as excessive alcohol intake, overeating leading to obesity, lack of exercise, intake of large amounts of sodium and cigarette smoking can be altered. These lifestyle changes are the first approach used to lower blood pressure in mild to moderate hypertensive disease before pharmacological therapy is instituted and are used to enhance the action of medication for lowering blood pressure in clients who have moderate to severe hypertensive disease. Adherence to lifestyle changes is more difficult than taking medication as prescribed. Estimates of nonadherence to therapeutic

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regimens range from 30% to 60% in general in any population (Meichenbaum & Turk, 1987; Sackett & Snow, 1979). If hypertensive clients comply 80% of the time with their medication regimen alone, they will have a significant reduction in blood pressure (Sackett & Snow, 1979). Social support from friends, family and the social network can help the client adhere (Meichenbaum & Turk, 1987). Williams (1991) has identified hypertension as a life-long disease. Essential hypertension is also consistent with chronic disease state as defined by Lubkin (1990):

> the irreversible presence, accumulation or latency of disease states or impairments that involve the total human environment for supportive care and self-care, maintenance of function and prevention of further disability. (p. 6)

Essential hypertension is an irreversible, chronic disease which when untreated results in an accumulation of impairments (end-organ damage) that will require assistance from the environment for supportive care. Treatment preserves maintenance of function and prevents disability (Lubkin & Curtin, 1990; Williams, 1991). Thus, since hypertension is a life-long chronic illness, clients dealing with it will need the assistance of their environment to prevent disability and maintain function.

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The treatment for hypertension is aimed at the prevention of complications and or target organ damage resulting in morbidity and mortality. The foregoing is best achieved by reduction of blood pressure to below 140 mm/Hg systolic over 90 mm/Hg diastolic (Harper & Forker, 1992; NIH 1988; Parker-Cohen et al., 1990; Weber, 1992; Williams,1991). Target organ damage affects the heart causing left ventricular hypertrophy due to the increased work-load imposed upon it and it includes kidney, neurological and arterial vessel damage (Parker-Cohen et al. 1990; Williams, 1991). Target organ damage is the result of long-term ischemia due to vasoconstriction and edema from fluid leaking from arteries under pressure into the interstitial tissue. Arteries are damaged, scarred and develop atherosclerosis as a result of the pressure from within (Parker-Cohen et al., 1990; NIH, 1988; Williams, 1991).

Antihypertensive therapy has changed greatly over the last decade evolving from a "stepped-care" approach of adding antihypertensive medications one at a time and increasing dosages until good blood pressure control was reached. Now, newer drugs are used like angiotensin-conversion-enzyme inhibitors and calcium channel blockers as first-choice therapy instead of thiazide diuretics (Harper & Forker, 1991). The newer drugs are expensive, but have fewer

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side-effects and are more effective (Weber, 1992). Nonpharmacological approaches were used in the past and are used now for those with mild blood pressure elevation (140 mm Hg systolic and 90 mm Hg diastolic) and without other cardiac risk factors (NIH, 1993). These nonpharmacological measures used now and in the past are weight reduction, dietary fat reduction, alcohol and sodium restriction, smoking or use of tobacco cessation, biofeedback, relaxation and exercise (NIH, 1993). Nonpharmacological approaches were and are still used in conjunction with drug therapy to enhance its effects (NIH, 1993; Parker-Cohen et al., 1990; Williams, 1991).

The nonpharmacological therapy usually requires a major life-style change (NIH, 1988; Parker-Cohen et. al. 1990; Rodnick,1990; Meichenbaum & Turk 1987; Williams,1991). Meichenbaum and Turk (1987) assert that 20% to 80% of clients quit therapeutic regimens involving life-style changes and Rodnick (1990) states that nonpharmacological regimens are not easy for clients to follow and most clients will not be able to make the necessary life-style changes. Rodnick (1990) adds that clients should be encouraged to join support groups which can offer support and guidance in following a nonpharmacological treatment plan. The foregoing discussion illustrates the importance of a thorough assessment of the client's individual characteristics as well as a disease

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history before prescribing a therapeutic regimen for a client with essential hypertension.

Adherence

Adherence is defined as a hypertensive client's following his/her therapeutic regimen. Adherence and compliance are roughly synonymous terms. They are both used in the health care literature to describe behaviors of clients consistent with following a therapeutic regimen (Lubkin, 1990; Meichenbaum & Turk, 1987; Simons, 1992).

Compliance in contrast to adherence evokes a paternalistic vision of the dominant health care provider dictating orders to a passive and docile client (Lubkin, 1990; Meichenbaum & Turk, 1987). A thesaurus provides synonyms for compliance. These synonyms are docile and acquiescent (Laird, 1990). Haynes, Taylor, and Sackett (1979) define compliance as " the extent to which a person's behavior (in terms of taking medications, following diets, or executing life style changes) coincides with medical or health advice," (pp. 1-2). They state that the term adherence may be used instead of compliance to mean the same (Haynes et. al., 1979).

In contrast the term adherence seems more appropriate to use to describe a client's following or "sticking" to a prescribed therapeutic regimen. Laird's (1990) thesaurus

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gives "to stick to" as a synonym for adhere. The implication is that the client is agreeing with the treatment regimen and following it based upon his or her own voluntary decision after being given the necessary information about the nature of the disease and the desired result of a therapeutic intervention (Meichenbaum & Turk, 1987; Simons, 1992). Meichenbaum and Turk (1987) describe behaviors which are adherent These adherent behaviors include; beginning and continuing with a therapeutic regimen and carrying it out at home, keeping appointments and going for referrals, taking medication at correct times and in correct amounts, engaging in recommended lifestyle changes and avoiding risky behaviors such as alcohol and addictive drug use and smoking, as well as avoiding stress. Adherence implies mutuality between the nurse and client. Adherence is also the term used by the National Institutes of Health, U.S. Department of Health and Human Services publication, The Physician's Guide, Improving Adherence Among Hypertensive Patients (1987).

An advanced practice nurse needs to use a more collaborative approach with a client which includes giving them information and advice that helps them come to a decision about what the therapeutic regimen will be like and what the client's goals are for his or her own health. A plan of treatment thus needs to be mutually decided upon

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between client and nurse (Gullickson, 1993; Simons, 1992). Meichenbaum and Turk (1987) advocate the health care provider form a partnership with a client in planning or carrying out the client's treatment regimen. They recommend "helping the client help themselves," (p. 73).

Many potential determinants of adherence have been studied in the past twenty years (Simons, 1991). The findings of these studies have not been conclusive in identifying a set of variables which would be predictive of client adherence to a therapeutic regimen (Meichenbaum & Turk, 1987; Simons, 1992). There is strong evidence that the reasons for client adherence or nonadherence derive from a complex set of overlapping factors unique to a given client (Haynes, Taylor & Sackett, 1979; Meichenbaum & Turk, 1987; Simons, 1992). An exhaustive list of the determinants of adherence which have been studied over time will not be listed in this scholarly project, however the categories of these factors will be listed with a few examples given for each category. Unfortunately many studies have been done which only examine one or a few of the factors and do not consider the interplay of all of the unique characteristics of clients which may be at work in preventing complete regimen adherence (Haynes et al., 1979; Meichenbaum & Turk, 1987; Simons, 1992). Some major categories of determinants

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of adherence are: client variables, disease variables, characteristics of the therapeutic regimen and client-provider relationship (Haynes et. al., 1979; Meichenbaum & Turk, 1987). Client variables refer to aspects of the client's individual characteristics i.e. alterations in sensory ability, inability to understand the disease or its regimen, lack of optimism, health beliefs, failure to recognize the severity of the illness or the necessity for medication, the social situation in which the client lives, and an absence of social support or social networks (Meichenbaum & Turk, 1987).

The social situation causing nonadherence in the homeless is not only lack of a place to live and lack of financial resources to pay for medical care, but also lack of transportation to a health care facility and lack of storage space for medications so that they become lost, stolen, wet or dirty (Nyamathi & Shuler, 1989). Nyamathi and Shuler (1989) also cite literature which contends that the major deterrent to adherence of the homeless individual is lack of a support system or relationships to friends, family or social organizations.

Those with low income while they may have a home, still have some of the same problems with ability to adhere that the homeless have, i.e. lack of money to buy medication, lack

of transportation to medical facilities and especially social isolation and lack of a supportive network, family or friends (Carpenito, 1993). Nurses need to investigate interventions which will help the client develop and or enlarge his/her social support system or help a client develop the ability to attract a support system and use it to enhance his/her adherence to a therapeutic regimen (Roberts, 1988). Roberts (1988) cites a lack of research which investigates nursing interventions which match people with low social support to a non-professional support group of some kind. The author cites research which shows evidence that some people who over-use ambulatory care settings and public health nursing services are seeking support from health care professionals. These people are unable to get social support elsewhere.

Social Support

The literature does not contain a single clear definition of social support (Brown, 1986; Chin, 1988; House, 1981; Weinert & Tilden, 1990). In many studies the concept of social support is defined in terms of different forms of support either structural or functional. Structural support is the source of support in a person's social network; it is the friends, family or organizations who provide social support. Functional support is what the social network, family, friends, organizations do for an individual to help

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him/her cope with a negative event, illness and/or therapeutic regimen (Roberts, 1988; Sherbourne & Stewart, 1991). Meichenbaum and Turk (1987) cite literature in which adherence improved when the client's family was included in office visits and Moriskey et al. (1983) conducted a health education program involving the families of poor urban hypertensive clients in which the families were educated about hypertension and its treatment. These clients had better appointment-keeping records, weight control and blood pressure control. They also had a 57.3 % less mortality rate than a control group whose families were not educated about hypertension and its treatment.

Caplan, Wellons and French (1980) conducted an experiment in which functional support was provided for hypertensive clients by the nurse, health care provider and support persons of the client. The results of the experiment were that adherence was higher in hypertensive clients who received functional support. Hogue (1979) recommends that the nurse ask about who key supportive people are in a client's life and suggests discussing the treatment plan with family members.

The National Institutes of Health publication The Physician's Guide, Improving Adherence Among Hypertensive Patients (1987) recommends "mobilizing a patient's social

support" (p. 3.) and "enhancing support from family members" (p. 4.). The publication does suggest specific interventions to do this, but it does not give suggestions as to what the health provider should do if the client has no social support, and it does not address all of the social support needs of the client as have been outlined in this paper. Thus, the succeeding content outlines interventions which can be accomplished by an advanced practice nurse or a baccalaureate prepared nurse which will help a client gain a social support system which will help him or her with adherence or help him/her use an already existing social support system to enhance his/her adherence.

It is clear from the literature that social support involves a relationship between two or more people and that it entails, as Pinneau (1975) defines it, "an interpersonal relationship" (p.1). Pinneau (1975) describes three kinds of social support, tangible support, appraisal or information support and emotional support. He describes tangible support as support providing some form of material assistance such as "loaning money" or "driving someone to the hospital" (p. 2). Appraisal or information support adds to a persons' knowledge and involves telling a person about a "job opportunity" or helping someone solve a problem. Emotional support conveys esteem or caring from one person to another or contributes to

an individual's emotional and social needs for affection (p. 2). Kahn (1979) includes the following as "key elements" of social support; "expression of positive affect, affirmation or endorsement of another person's behaviors, perceptions or endorsement of another person's behaviors, perception or expressed views," and "the giving of symbolic or material aid to another," (p. 85). Kahn defines social support as "interpersonal transactions" (p. 85). House (1981) based his definition of social support on the work of Kahn and Pinneau. House also defines social support in terms of the way it functions to help people. Functions are emotional support, instrumental support, informational support and appraisal support.

Sherbourne and Stewart (1991) used the theories of Pinneau (1975), Kahn (1979) and House (1981) to develop a definition of functional social support. They stated that functional social support was "the degree to which interpersonal relationships serve particular functions" (p. 705). Sherbourne and Stewart's four areas of functional support are: 1). emotional/informational support; 2). tangible support; 3). positive social interaction support; and 4). affectionate or affective support. Emotional/informational support involves expressing positive feeling from one person to another. The positive feeling

promotes empathy and understanding between these individuals. The informational aspect of this category of functional support involves the exchange of information, advice, guidance or feedback between two individuals. Emotional/informational support provides trust, empathy and knowledge of being cared for by another individual. The idea that one is cared about promotes positive health behaviors (Cobb, 1979; Roberts, 1988). This category of functional support gives a client feedback, guidance and appraisal support. This support gives a client information about his/her behavior relative to following a therapeutic regimen or helps with methods for following the regimen. One individual can help another by exercising with him/her or dieting with him or her and by listening to the client and giving him/her advice, comfort or feedback about how well the client is doing with a therapeutic regimen.

Tangible support is one person providing material aid of some kind to another person. It can also be behavioral assistance. Tangible support could involve helping someone with housework when that person is ill or not ambulatory, taking a person to a physician visit, helping the person get financial aid to pay medical bills or preparing a low sodium meal.

Positive social interaction support is that kind which provides recreational support. It is having someone with whom to engage in some sort of entertainment, have fun with or with whom to do something enjoyable. Positive social interaction support for a client could come from a recreational group of some kind which meets for dinner, theater, golf, tennis or etc. Affectionate support is the act of expressing love and affection. Affection is shown by one individual hugging another, telling the person he or she is loved or showing other physical expressions of love (Sherbourne & Stewart, 1991).

Following an extensive review of social support literature Sherbourne and Stewart (1991) developed an instrument to measure the perceived availability of these four areas of functional support. The instrument, the MOS Social Support Survey (Appendix A) was the result of their efforts. The letters MOS stand for Medical Outcomes Study. The MOS Social Support Survey was tested on 2,987 clients who were part of the larger study examining the etiology and course of various chronic diseases. This instrument will be used in the clinical social support protocol to be described later in this paper. The clients used in the development of the survey were ages eighteen to ninety-eight years. Thirty-nine percent of the sample was male, sixty-eight percent were

married. Twenty percent of the sample was other than Caucasian and forty-six percent of them had completed high school. The average amount of education the group had was 13.3 years. Sherbourne and Stewart (1991) do not report an assessment of the study participants' reading level. Clients who could not speak English or who were blind or physically impaired to the extent that they could not complete the forms used were not included in the development of the survey.

Clients for the Medical Outcomes Study who were used to develop the MOS Social Support Survey were chosen from three different systems or organizations delivering health care: health maintenance organizations, solo private practice physicians, and a large multispecialty group. Study sites were from three large cities, one on the west coast, one on the east coast and one in the middle-west. Clients who were used had one or more of four chronic diseases, hypertension, diabetes, coronary heart disease and depression. Those who were enrolled in the study were volunteers garnered through telephone interviews. Those who enrolled completed a patient assessment questionnaire, a physical health examination and a calendar diary.

The nineteen items developed for the survey are based on an extensive review of the literature. Face validity of the scales was established by a review of fifty items (originally

developed by the authors) by six behavioral scientists who deleted items which could not be categorized. The remaining survey of thirty-seven items was given to a small sample of clients. Those items not internally consistent with a hypothesized dimension of support and that did not discriminate social support from other dimensions of health-related behavior and health were eliminated which left nineteen items. The nineteen items were then administered to the large client sample, previously described, at the beginning and at the end of the Medical Outcomes Study to establish reliability. Cronbach's alpha coefficient was used to estimate internal-consistency reliability of item scores. Pearson product moment correlations were used to estimate one year stability coefficients between enrollment support measures and those same measures after a year. Alpha coefficients ranged from 0.91 to 0.96. The stability coefficients ranged from 0.72 to 0.78. The nineteen functional support items were hypothesized to measure five different dimensions of support: (a) emotional support, (b) informational support, (c) tangible support, (d) positive social interaction, and (e) affectionate support. Multitrait scaling techniques were used to analyze the discriminant validity of the social support items as well as their construct validity. Measures of health and well-being

hypothesized to be related conceptually to functional social support were included in the analysis. The health and validity measures used were those developed by the combined efforts of many individuals involved in research in the field of health assessment. There was an overlap between the four informational support items and the four emotional support items so they were combined into one scale. A single-item structural support measure included in the survey and in the multitrait analysis was distinct from the other social support measures having low to moderate correlation with the functional support items. The items had high correlation with their hypothesized scales (0.72 or greater) and discriminant validity was established as they correlated more highly with their own scale than with the other social support scales. The items also discriminated well from the validity measures of health, mental health and family and social functioning. They were distinct from measures of loneliness, feelings of belonging, mental health, health perception and measures of family and social functioning (Sherbourne & Stewart, 1991). The authors also reported that results of a principal components factor analysis of the nineteen social support items were supportive of construction of an overall support index (Sherbourne & Stewart, 1991).

The social support assessment tool based on Sherbourne and Stewart's (1991) definition of functional support can be used to gain information from hypertensive clients as to what types of functional support are available to them in their social network to help them follow their therapeutic regimen. Functional support is what the social network does for an individual, structural support is who does it (Roberts, 1988; Sherbourne & Stewart, 1991; Simons, 1992). A review of the literature reveals that perhaps certain persons in the social network are likely to do more for a client than others (e.g. spouse or family members). It is important that support persons are available to the client to provide functional support. The nurse can include them in a social support intervention by teaching them about the client's disease and its treatment and by informing them about methods they can use and functions they can provide which will help the client adhere. The nurse can elicit a commitment from the client's support persons in which they agree to participate with the client and the nurse in helping the client adhere. Available functional support might provide the client with money needed to pay for prescriptions, transportation to get to health provider visits, information about ways to follow the non-pharmacological part of a hypertensive therapeutic regimen, feedback about how well the client is following his/her

regimen and affection from the support system which makes them feel cared for thus improving a client's feeling of well-being and improving the client's health. Functional support helps the client do what he or she needs to do to keep his or her blood pressure under control i.e. take medication, get regular check-ups to determine blood pressure level, eat a low sodium diet, exercise and lose excess weight, as well as quit smoking and reduce alcohol intake.

While social support is generally thought of as positive it can have negative effects. It can threaten a client's independence and feelings of self-adequacy (Meichenbaum & Turk, 1987). Some families are not supportive and can nag and be overly critical causing a client to neglect the prescribed regimen (Meichenbaum & Turk, 1987; Tilden & Galyen, 1987). Some people may feel that family and friends are being intrusive when they attempt to help with a therapeutic regimen and not all people will wish to join support groups to help them with exercise or weight control (Meichenbaum & Turk, 1987). It is important that the nurse questions the client about how he/she feels about receiving help with following a therapeutic regimen. If the client feels that his or her independence will be threatened or reveals that his or her family relationships would not be helpful or that friends would not support the client to

adhere, then the nurse needs to rely on other interventions to enhance adherence and or find other sources of support for the individual to use that do not threaten his or her feelings of self-adequacy. Another alternative is to work with the family or friends and client using interventions with the family and or friends which will assist them in helping the client more constructively. The nurse may need to help change the attitudes and beliefs of the social network regarding the client's regimen. Roberts (1988) found in a literature review that a client may be influenced by his/her social network's values and beliefs to the extent that he or she will not follow the advice of a health care provider. Thus a nursing intervention using functional social support to enhance adherence needs to include the client's social network as well as the client.

Implications For Advanced Nursing Practice

Prescribing a scientifically designed therapeutic regimen for a hypertensive client will largely be poor use of an advanced practice nurse's time if a thorough assessment is not done of the client's ability to follow the therapeutic regimen. A client's lack of adherence will result in poor blood pressure control. There are many barriers to adherence that are client generated factors and those barriers have been listed in this paper. Those factors should be

identified in a thorough assessment of the client. The factor that might enhance adherence or be an adherence barrier in this project is the client's sources or lack of social support.

A complete history should be taken from the client to assess all of the relevant physical and psycho-social factors in a hypertensive client's background. A complete bio-medical and psychosocial history should be done by the advanced practice nurse as well as a complete physical examination with pertinent laboratory tests. Included in the psychosocial history should be a description of the client's primary support system, and or significant others, family and other persons from whom the client may obtain social support. Additionally the kind of work the client does may be stressful and should be noted. A client's environment may affect his/her blood pressure levels. Family and other environmental factors that may be stressful for the client should be identified as well (NIH, 1988). The client's use of over-the-counter drugs also needs to be assessed as many of these drugs can promote elevated blood pressure. The client's social support system is part of his/her environment and may prove to be helpful to him/her in controlling blood pressure or may be a source of stress for the client which

interferes with antihypertensive therapy (NIH, 1988; Meichenbaum & Turk, 1987).

If the advanced practice nurse finds, after a thorough assessment of the client, that he or she is lacking those factors of social support which may enhance adherence, the advanced practice nurse needs to explore with the client ways to obtain the support needed. If the client does not want support in following his or her treatment regimen, this factor also needs to be noted and the client's own individual resources for coping identified. If family members or friends can be helpful and the client desires their assistance, they need to be included in receiving information about the client's therapeutic regimen and the nature of hypertension. Strategies need to be devised for the way the client's social support persons can be involved. If the client desires and needs social support and has no family or social network, the advanced practice nurse can identify groups and organizations for the client which could provide him or her with various forms of support (Hogue, 1979). The nurse's role is to help the client learn how to cope with the regimen. For a time the nurse may act as the client's support system, but can not continue indefinitely to help the client in this way, thus the advanced practice nurse

identifies factors in the client's daily life which will help with following the therapeutic regimen.

A specific protocol was designed which uses Sherbourne and Stewart's (1991) social support survey to assess a client's perceived available social support. If the client has no social support it may be that he/she is lacking social skills. Circumstances such as a loss of job, home or a move from one city to another may have deprived a client of a support system. The advanced practice nurse can provide an intervention to help a client develop social skills, and find and use a support system to enhance his/her adherence to a therapeutic regimen. Additionally the protocol should be reviewed by nurse practitioners and tested on hypertensive client populations. The costs of the intervention and the amount of time it takes should be evaluated. No studies were found which evaluated amounts of time for nursing interventions.

Simons' (1992) study of nursing interventions which enhance adherence was part of a larger study conducted at the University of Iowa which had as its purpose the construction and validation of a taxonomy of nursing interventions which could be used for nursing education, nursing practice and research. The result of the study produced defined nursing interventions with intervention content validity scores.

Among those considered to be major activities supporting adherence under "coping enhancement" were "assisting the client to identify available support systems" (p. 487), "appraisal of the client's needs and desires for support," (p. 488), "encouraging appropriate family support and helping the client identify positive responses in support persons" (p. 488). Other minor activities were those which encouraged the client to find groups or others experiencing the same problems and were coping successfully, using spiritual resources, engaging in community and social activities and developing relationships with others.

Bulechek and McCloskey (1992), Cox et al. (1989) and Carpenito (1993) propose nursing interventions using groups to provide social support and approaches for clients lacking social skills who are socially isolated. Additionally these authors provide information which can be used to assess an individual's social skills. These interventions can be used as part of a protocol or intervention to guide a client toward social support resources which can enhance his/her adherence. Thus, this content and Simons (1992) study will be used as resources for the protocol in this scholarly project.

Project Development

The goal of this scholarly project was the development of a protocol which uses a hypertensive client's social support system to enhance the client's adherence to a therapeutic regimen. If the client does not have effective functional social support the advanced practice nurse follows steps in the protocol derived from current nursing literature which promote the development of a social support system which will enhance adherence to a therapeutic regimen (see Figure 1, page 35), (Bulechek & McCloskey; 1992, Carpenito, 1993; Cox et al., 1989; Simons, 1992). The ovals and boxes representing the various steps in the algorithm are numbered in order to facilitate the discussion of the nursing intervention portrayed and are not meant to imply any particular sequence. The protocol starts in the upper left corner of the figure in oval 1 (see Figure 1, page 35) with the advanced practice nurse or physician establishing a diagnosis of essential hypertension.

Clients for whom this intervention is targeted will be those who have essential hypertension which has been newly diagnosed by the advanced practice nurse or other health care provider. The intervention thus is not to be used for previously diagnosed clients with hypertension who already are on a therapeutic regimen. Those who are following a

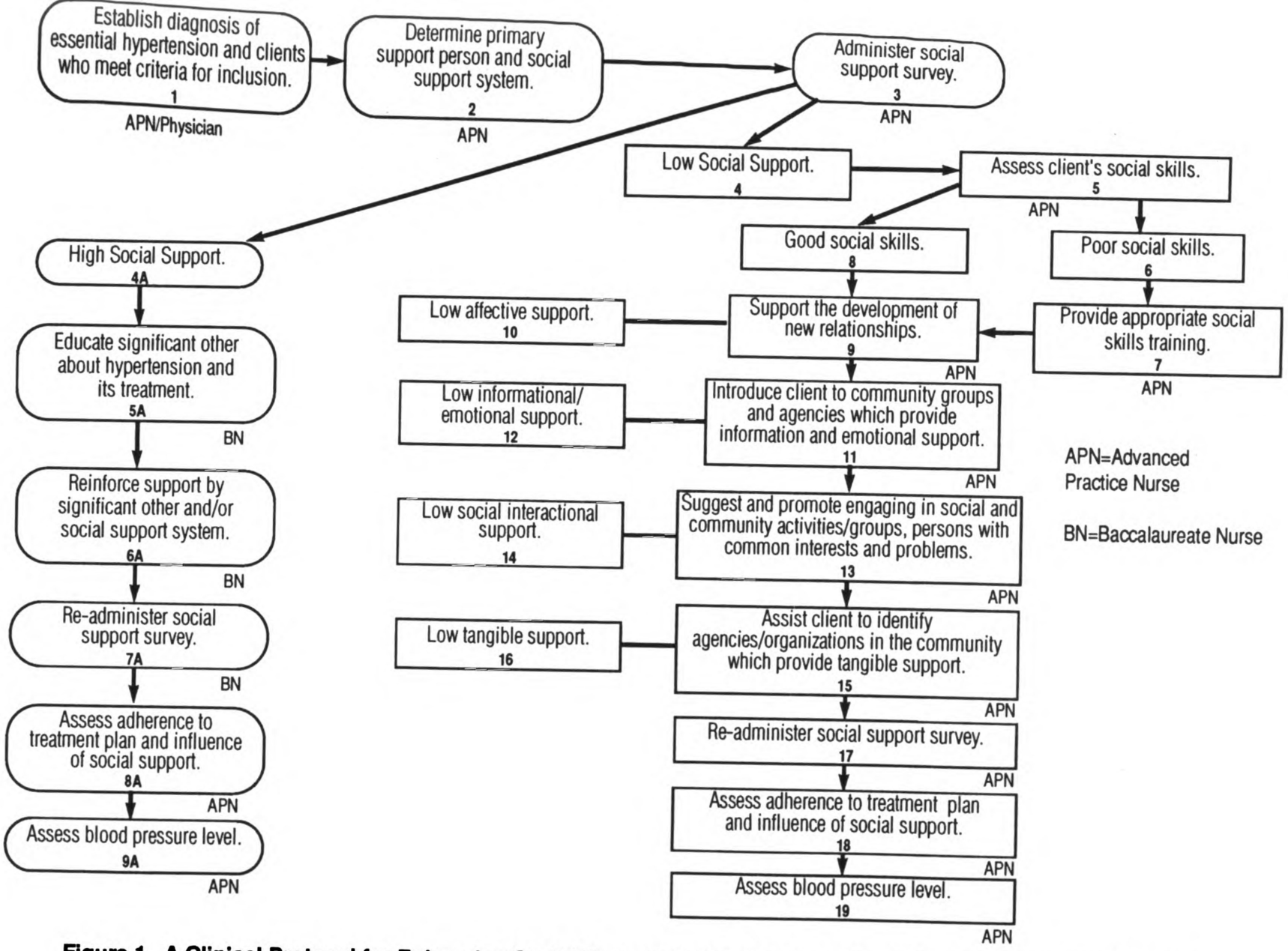

Figure 1. A Clinical Protocol for Enhancing Social Support in Hypertensive Clients by Advanced Practice Nurses

regimen will already have established patterns of adherence behavior. This is an untried intervention in which there will be a structured approach to using a client's perceived available social support. A client previously diagnosed and treated may already be using support they have available and it would be difficult in this instance to know whether the intervention is related to increased adherence or not. When the intervention has been tried and proven effective, it could then be used with clients with other diseases or previously diagnosed hypertension.

The clients should not have any other chronic disease such as diabetes, target organ damage, secondary causes of hypertension, be pregnant or lactating, have a diagnosis of mental illness and or in the process of being treated for mental illness, or be blind or developmentally or physically disabled as these conditions may prevent them from completing the MOS Social Support Survey. Clients possessing more than one chronic disease may have a very complex therapeutic regimen which is a factor in inhibiting adherence to a therapeutic regimen (Meichenbaum & Turk, 1987).

Clients to be targeted by the intervention will be male or female between the ages of eighteen and sixty-five. Clients below age eighteen are adolescents and more subject to peer pressure which may discourage regimen adherence

(Meichenbaum & Turk, 1987). They may also be developing independence and rebel against authority figures and or parents presenting a particularly difficult set of circumstances relative to adhering to a treatment plan (Meichenbaum & Turk, 1987). Younger children are influenced by parents and family dysfunction (Meichenbaum & Turk, 1987). The Social Support Survey (see Appendix A) was designed for and tested on adults eighteen years and older (Sherbourne & Stewart, 1991). The 1987 report of the Second Task Force on Blood Pressure Control in children reports that only 3% of children have arterial hypertension and states that most children with hypertension have a secondary cause of the disease (Meichenbaum & Turk, 1987).

Persons over sixty-five usually have one or more chronic diseases many of which are treated with drugs. They may also have sensory-perceptual disabilities which might affect adherence as well as their ability to complete the social support survey. The intervention would need to be changed to meet the special needs of the elderly, thus those over sixty-five will not be included in the intervention (Meichenbaum & Turk, 1987). Clients should also be literate and able to read the questions on the MOS Social Support survey which is written at an eighth grade level and uses simple language. In any case the nurse should assess the client's ability to

read when initially assessing the client to establish the diagnosis of hypertension. If clients are unable to read they will not be able to read the directions or name of the medication on the medication container which most certainly can interfere with adherence.

In order to follow guidelines written by the Joint National Committee on Detection, Evaluation and Treatment of High Blood Pressure (1993) the advanced practice nurse (APN) will see a client for at least three visits before establishing a diagnosis of hypertension (Figure 1, oval 1). The three visits will include three separate blood pressure readings of 140 mm Hg systolic or more and 90 mm Hg or more diastolic to establish a diagnosis of hypertension. A client may be found to have an elevated blood pressure reading during a routine history and physical examination. If the client has two more elevated blood pressure readings of 140 mm Hg systolic or more and 90 mm Hg or more diastolic on two more separate occasions, he/she should be scheduled no more than a week later for a fourth longer visit of approximately an hour for appropriate laboratory tests, and an extensive social support assessment in which the advanced practice nurse asks the client to identify his/her support person and support system. In Figure 1, oval 2 the advanced practice nurse asks the client if he/she has a primary support person

who will help the client follow the therapeutic regimen. Primary support persons are also identified as significant others. The advanced practice nurse will also ask the client whether or not he/she has a social support system as well as a primary support person which might help the client adhere. Primary support persons or significant others can be members of a client's family, a spouse or a very close friend. The client may have more than one significant other or primary support person or answer that he/she has no primary support person or support system (Kahn, 1979; Meichenbaum & Turk, 1987; Sherbourne & Stewart, 1991).

The primary support person or significant other (Figure 1, oval 2) should be involved in assisting the client with his/her treatment plan with the client's permission. Part of the intervention herein described involves working with the client's support person's and support system by educating them and reinforcing their support of the client, thus whether or not the client has a primary support person or support system needs to be determined during this step in the protocol (see Figure 1, oval 2). Other areas of support that the client may identify as part of his/her support system may be church groups he or she belongs to or a recreational group such as a bowling team or golf partners. These groups would provide diversional activities and positive-interactional

support. These groups may have a negative aspect in that they sometimes involve eating high fat foods and drinking alcoholic beverages. The client may need help from the nurse in choosing the best activities of this nature which do not offer this kind of difficulty in following a therapeutic regimen. Weight Watchers is another self-help group which the client could use in gaining new support for weight control. The client could also be encouraged to ask friends or his/her spouse to exercise with him/her. Some clients may not have a primary support person or significant other and no social support system that they can identify. Clients may have contact with many people and have a network of acquaintances or have contacts with people through work, but these relationships may not be correlated with social support (Sherbourne & Stewart, 1991).

A subsequent fifth visit of one hour should be scheduled one week later in which the advanced practice nurse in the intervention discusses the disease with the client as to its pathophysiology, the long term effects of untreated hypertension and the results of the laboratory tests. It is necessary to educate the client about the pathophysiology of his/her disease on a level of the client's ability to understand so that the client is more aware that following the treatment plan is important in maintaining health. A

treatment plan that is appropriate for the particular client involved should be devised at this visit also. Treatment plans will vary according to the severity of the disease (NIH, 1993). Individuals with blood pressure elevations of 140 mm Hg to 149 mm Hg systolic and 90 mm Hg to 94 mm Hg diastolic may be given a trial of three to six months before medication therapy is initiated to give lifestyle modification a chance to effect lower blood pressure.

The advanced practice nurse should collaborate with the client in devising a plan as to how the client will accomplish lifestyle modifications (Simons, 1992). Such lifestyle modifications may include most or all of the following; low salt, low fat diet, exercise, stress reduction, reduction of alcoholic intake and cessation of smoking as well as biofeedback (NIH, 1992).

The client should be encouraged to help choose the antihypertensive drug therapy to be used (Gullickson, 1993). The client can be informed about the various side effects of different hypertensive drugs and with the nurse decide upon appropriate drug therapy. Some kinds of antihypertensive therapy are more effective than others based on a client's age, race and lifestyle (NIH, 1993).

Adherence may also be enhanced by many nursing interventions which can be initiated other than the social

support intervention described in this project. For the purposes of this project these will not be described, except to say that these interventions would include mutual goal-setting, contracting, behavior modification and other methods suggested in nursing resources (Bulechek & McCloskey, 1992; Simons, 1992).

After the advanced practice nurse has determined whether or not a client has a primary support person or social support system which could help the client adhere to the therapeutic regimen and collaborated with the client in establishing a therapeutic regimen, the nurse should schedule a sixth visit to administer the MOS Social Support Survey (Sherbourne & Stewart, 1991) to the client (see Appendix A). The MOS is given at this time in the protocol (Figure 1, oval 3) to guide the nurse in the choice of interventions she/he will use to promote the client's use of a social support system to enhance adherence. This visit should take approximately one-half hour.

This survey was chosen to be used in this intervention not only because of its validity and reliability (see pages 24 through 26), but it is short (only nineteen items), easily administered, the length of the items are short and the items are worded simply so that they are easily understood. There is one idea in each item. Clients are more likely to be able

to complete a shorter questionnaire with simply worded items containing one idea each (Sherbourne & Stewart, 1991). Most importantly this survey was chosen because it measures four areas of functional support which are found in relatively recent literature concerning social support and adherence (House, 1981; Kahn, 1979; Simons, 1992; NIH, 1987). The four areas of functional support identified in Sherbourne & Stewart's (1991) social support survey (see Appendix A) are emotional/informational support, social-interactional support, tangible support and affective support. These authors define social support as an interpersonal relationship. Items 3, 4, 8, 9, 13, 16, 17, and 19 measure perceived available emotional/informational support. Items 2, 5, 12 and 15 measure perceived available tangible support. Items 7, 11, 14 and 18 measure perceived available social-interactional support. Perceived available affective support is measured by items 6, 10, and 20.

The first question the instrument used in this intervention asks is for numbers of friends and close relatives a client has and is used as a source of data about the structural aspects of a client's support system along with the data collected by the advanced practice nurse.

Once the client has been administered the test, the nurse will score the test. (The test will be self-

administered at the sixth visit in a room in a clinic or office when the client sees the advanced practice nurse). The test will be scored according to the same scoring procedure used in the development of the test by Sherbourne and Stewart (1991). Each item should be scored individually by the following formula:

Client's item score minus 1 divided by maximum possible item score minus minimum possible item score multiplied by 100.

$$\frac{\text{Client's score} - 1}{5 - 1} \text{ times } 100$$

Scores for each item in a support scale i.e. functional support, emotional/informational support etc. should be added together and a mean computed for each set of items in the four scales. The total score should be computed using the scores of each of the nineteen items added together and computing the mean or average score. Scores of 68 to 100 indicate high social support (Sherbourne & Stewart, 1991). Scores of 60 to 68 indicate a high score on some scales and a low score on others, thus it is valuable to assign a score to the scales representing each type of support to indicate where a client has low support. It should take about fifteen minutes to score the survey and the advanced practice nurse will score the survey after the sixth visit.

Sherbourne & Stewart (1991) report in their study that the people who had high social support in one functional area had high social support over all and people with low social support in one or more areas had low scores overall. The nurse using this survey to determine how to proceed with the intervention thus may find that most clients are either high scorers or low scorers with no medium range. In Sherbourne and Stewart's (1991) study the lowest mean score was 69.6 with a standard deviation of 25.5. The results of the survey should be discussed with the client. The client will be scheduled for a seventh visit to discuss the results of the survey. At this visit the advanced practice nurse will plan an intervention in collaboration with the client based on the results of the survey. The seventh visit will last for about one-half hour.

Intervention for Clients with High Social Support

A client with high social support and a primary support person (see left of algorithm, Figure 1, oval 4a) will be asked by the advanced practice nurse to have the support person make an appointment to see the advanced practice nurse. This appointment may take about fifteen minutes and should be scheduled within one week after the client has taken the MOS Social Support Survey (Appendix A). At this time the advanced practice nurse can go over the client's

laboratory tests and diagnosis with the primary support person and reinforce the commitment of the client's primary care person to support the client in adhering to the therapeutic regimen. Following the appointment with the primary support person, the advanced practice nurse may then schedule the client's support person with a baccalaureate prepared nurse so that this nurse can direct the client's existing support.

The baccalaureate prepared nurse would teach the client's primary support person about hypertensive disease and its treatment (see Figure 1, left side of algorithm oval 5a). Those nurses not prepared at the baccalaureate level have not had a curriculum containing advanced nursing theory nor have they had any but the most basic studies in human behavioral science. Baccalaureate nurses have been educated more broadly in the social and natural sciences and liberal arts and are capable of more autonomous decision-making (Hagerty, 1992; Kozier, Erb & Olivieri, 1991; Phipps et al., 1991). This intervention also will require the nurse to have had teaching-learning theory which is emphasized in baccalaureate programs in nursing (Kozier, Erb, & Olivieri, 1991). The baccalaureate nurse conducting this intervention should have an advanced practice nurse as a resource person to develop the approach to the intervention and should have

at least one year of clinical experience in a primary care setting so that the nurse has enough experience in the setting to be able to apply the theory required to carry out the intervention. The baccalaureate nurse may also need guidance in order to know how to carry out the intervention and be given some appropriate resources.

Educating the primary support person could be done on an individual basis or in a group of individuals (Figure 1, oval 5a). If there are sufficient numbers of hypertensive clients existing in a practice who meet the criteria for inclusion into the intervention and who have primary support persons who will be included, then a group of these support persons can be formed. The purpose of the group would not only be to educate the support person/s but also to appropriately direct the support persons supportive behavior toward assisting the client to adhere to the prescribed diet, medication-taking behavior, tangible support like providing transportation to the office or clinic and helping the client with paying for medication (Figure 1, oval 6a).

Group approaches are cost-effective because the same material can be presented to more than one person at a time, persons within the group can help each other cope with the problems associated with following a treatment plan that involves behavior changes and information can be exchanged

about methods of coping. The concepts to be learned can be clarified by persons within the group discussing them with each other. Emotional and tangible support can also be shared in a group setting. Kinney, Mannetter, and Carpenter (1992) state that support groups "represent a merging of two theoretical perspectives: social support and small groups" (p. 326). Kinney et al. (1992) also say that groups can provide some of the various forms of functional support e.g. tangible, emotional/ informational and positive-interactional. The costs involved in this intervention are mainly the costs for the nurses time, thus seeing a group as opposed to one individual at a time is a cost effective approach. If there is only one client who needs the intervention at this point, however, time is a factor in getting the support person involved in the treatment plan, thus that part of the intervention may be done with the client and support person alone. If the client is seen alone with a support person they may be seen by the advanced practice nurse or the baccalaureate prepared nurse under the supervision of the advanced practice nurse.

The group would meet once for two hours for the purpose of educating the primary support persons (Figure 1, oval 5a) after the commitment of the primary support persons had been elicited. Subsequently the group would meet once a month led

by the baccalaureate prepared nurse with the clients and their social support system (persons other than the primary support person who are close to or live with the client) as well as their primary support person. The baccalaureate nurse would direct the client's support system toward assisting the client to adhere to the therapeutic regimen (Figure 1, oval 6a). The baccalaureate nurse would also answer questions about the disease of hypertension and its treatment and reinforce the client's knowledge as well as the support system persons' knowledge, and direct support of the client's adherence (Figure 1, oval 6a). The group would meet about three times once a month after the primary support persons' meeting, requiring about six months for the intervention. The meetings would be about one hour in length. Total time for this part of the intervention (the high social support intervention, see Figure 1, ovals 4a to 9a) is eight and one-half to nine hours. Extra time is included to allow time to check weight, blood pressure, and cholesterol level at regular intervals. Six months should be enough time to effect behavioral change in a client and a client's support system. (Source for determining amounts of time for interventions was M. Palermo R.N., M.S.N. counselor with Paul Critelli Ph.D. clinical psychologist, personal communication, April 19, 1993). During a fairly complete if not exhaustive

investigation of the literature no research literature source describing lengths of time taken to complete nursing interventions in primary care was found.

If a client's primary support person or support system is providing inappropriate kinds of support, the advanced practice nurse will need to help the baccalaureate prepared nurse develop strategies to redirect the support persons to more appropriate ways to be supportive e.g., discontinue nagging, reinforcing the need for the client taking medication and the need for food which is appropriate to the client's prescribed dietary needs. This may mean teaching a spouse how to prepare low-fat, low-sodium meals and or how to shop for foods that meet the client's dietary needs. The baccalaureate nurse may be helped to develop strategies for approaching a relative or support person to direct them toward providing more effective support of the client's adherence to the therapeutic regimen (Figure 1, oval 6a).

Family members may be able to help with certain aspects of tangible support as rides to the clinic and paying for medications. The nature of the treatment regimen for hypertension requires major lifestyle changes for the individual involved. It involves, as has been previously stated, dietary and activity changes as well as pill-taking behavior. It is important that the medication be taken at

least 80% of the time to achieve adequate lowering of blood pressure. Medications for hypertension are very costly (Harper & Forker, 1992; Trottier and Kochor, 1992). Clients may need help paying for them. If clients can not afford medication prescribed, they will not buy and ingest it. Spouses or other support persons can also help a client remember to take medication. Appraisal or feedback support that helps the client evaluate how he or she is doing with weight control or exercise could be given to a client by family or friends. Sometimes when a spouse or family member joins with the client in dieting or exercising, it encourages the client to continue the activity (Meichenbaum and Turk, 1987). They can praise the client's efforts and tell them how well they have done losing a given amount of weight or can acknowledge the client's efforts toward exercising regularly. The client's family or spouse can help by taking the client's blood pressure for them to evaluate how the client's behavior is affecting his or her blood pressure. When a family member, spouse or friend of a client provides information about how to exercise or diet, they are providing informational support.

Each time a client meets with the support group (Figure 1, oval 6a) or baccalaureate nurse alone he/she should have his/her blood pressure and weight checked, and a cholesterol

level taken at least once three months after the initiation of the treatment plan to assess the effects of the treatment plan and client adherence (Williams, 1991). The standards for following hypertensive clients as prescribed by the National Institutes of Health (1993) direct that adherence to therapy and response to therapy be monitored as the client is seen periodically by the health care provider because the therapeutic regimen may not be adequate for the client's needs and may need to be adjusted. The client may be adherent, but the regimen is inadequate. Clients receiving either the high social support intervention or the low social support intervention as done by the advanced practice nurse (see Figure 1, right side of algorithm, box 4) would receive the same treatment because it is the standard of care for all hypertensive clients (NIH, 1993). Meichenbaum and Turk (1987) recommend other methods of assessing or monitoring adherence. They are having the client keep a diary, monitoring his/her own adherence behavior and reviewing how well the client kept appointments and was on time for appointments. If the client does not keep up with his/her adherence diary or breaks appointments frequently, one can surmise that she/he may also not be following his/her treatment plan (Meichenbaum and Turk, 1987). Those clients with high social support may be assessed for adherence by

self-report, interview in group process, prescription refill record, appointment-keeping and adherence diary.

At the end of the six month intervention, the MOS Social Support Survey will be readministered (see Figure 1, left of algorithm oval 7a). The clients with high support will be scheduled for the test at the last group meeting and will be administered the test in a one-half hour session one week after the last group meeting or after the last meeting with the baccalaureate nurse, client, and primary support person and/or support persons. The advanced practice nurse will score and evaluate the test for evidence of increased social support with a higher score on the survey than the first test. The advanced practice nurse will at this appointment schedule the client for an additional half hour one week after the test taking appointment to assess the client's adherence to the therapeutic regimen and the client's blood pressure level (see Figure 1, left of algorithm, oval 8a and oval 9a). The total intervention time is at that time about ten hours.

Intervention for Clients with Low Social Support

The intervention for clients with low social support scores on the social support survey is shown in Figure 1 on the right side of the algorithm beginning with box 4 through box 19.

The solid lines leading from the boxes labeled with the four different concepts pertaining to areas of functional support are meant to show interconnectedness among all of the forms of support and the various intervention boxes which are: support the development of new relationships (Figure 1, box 9), introduce client to community groups and agencies which provide information and emotional support (Figure 1, box 11), suggest and promote engaging in social and community activities/ groups persons with common interests and problems (Figure 1, box 13), and assist client to identify agencies/organizations in the community which provide tangible support (Figure 1, box 15). All of these interventions could be used to address needs in any or all of the functional support areas.

If the client's total score is low on the social support survey (below 68) he/she may lack perceived functional support in some areas and have adequate support in others. If the client scores below 60 on the survey he/she most likely has low social support on all four components of the survey. However evaluating the results of the test by computing mean scores for each set of measures and using the formula previously described to compute the score will assist the advanced practice nurse in assessing the client's specific area of need. Since this part of the intervention

is directed toward finding sources of support for the client it is outlined with sharp corners instead of round to differentiate it from the interventions to be done for those with available support.

Once the social support survey is assessed and a score computed which indicates low social support, the nurse should discuss the results of the test with the client. The nurse should then assess the client's social skills (Figure 1, box 5). One of the activities in a study conducted by Simons (1992) which explored interventions employed by nurses to promote client adherence to therapeutic regimens was the provision of appropriate social skills training. Clients without social support are socially isolated and may have impaired social interactions (Carpenito, 1993). Social isolation is related to nonadherence (Hogue, 1979; Meichenbaum & Turk, 1987). People who are socially isolated may have a need for social contacts with others, but are not able to do so because they lack social skills (Carpenito, 1993; Kerr, 1987). People with good social skills have the ability to communicate appropriately, are not anxious about social situations, have good personal grooming, leisure interests, ability to listen and respond appropriately to other's communications, and have assertiveness in developing relationships (Carpenito 1993; Kerr, 1987). A lack of social

skills could be the result of low self-esteem and depression (Kerr, 1987). If the client does not have psychopathology, the advanced practice nurse can then work with the client to improve her/his social skills (Figure 1, box 7). Interventions suggested by nursing literature resources include role-play between the client and nurse to rehearse social situations and interactions, the nurse giving feedback about the client's behavior and reinforcing appropriate social behaviors and discussing how the client can improve posture, gait and eye contact as well as modeling beginning a conversation, listening and ending a conversation (Carpenito, 1993; Kerr, 1987; Meichenbaum & Turk, 1987). If a client is found at this point to have psychopathology, the client should be referred to a mental health counselor and eliminated from the intervention. Figure 1 (box 6) indicates that if a client's social skills are assessed and found to be inadequate then the advanced practice nurse is to provide appropriate social skills training as outlined in the above discussion (Figure 1, box 7). Once the client has developed social skills the advanced practice nurse helps the client by supporting him/her in the development of new relationships (Figure 1, box 9).

If the client has good social skills but low social support (Figure 1, box 8), he/she will also be supported in

developing new relationships (Figure 1, box 9). Some clients may not have a primary support person or significant other and no social support system that they can identify. Clients may have contact with many people and have a network of acquaintances or have contacts with people through work, but these relationships may not be thought of by the client as social support (Sherbourne & Stewart, 1991). Also a client may have close friends, a spouse or significant other or relatives who are not supportive in a way which will promote adherence to a therapeutic regimen (Meichenbaum & Turk, 1987). They may in fact nag the client so that the client does not respond positively or they may purposely sabotage a client's efforts, telling them they don't need medication, refusing to prepare meals that are appropriate to the client's therapeutic regimen or refusing to make funds available to pay for medicine or clinic visits (Meichenbaum & Turk, 1987; Tilden & Galyen, 1987).

Clients with good social skills and low social support (Figure 1, box 8) may have lost their support system because of the loss of a job and/or home. They may have suffered divorce or death of a loved one. They may also be newcomers to the area having recently moved and/or changed jobs. Perhaps, due to poverty, they may also lack transportation (Carpenito, 1993; Nyamathi & Shuler, 1989). While clients

may have differing reasons for loss of social support, the intervention can still help them acquire social support to help them adhere and provide them with resources to cope with these problems.

When the client has acquired good social skills, or if the client has been found to have good social skills by the advanced practice nurse, the advanced practice nurse should begin encouraging the client to develop new relationships (Figure 1, box 9). Until clients have developed new relationships which provide affective support, the advanced practice nurse will need to reinforce the client's newly acquired social skills or if a client has good social skills direct the client as to the use of good social skills in finding new relationships. New relationships could be friends who might provide affective support (Figure 1, box 10). Sherbourne and Stewart (1991) define affective support as behavioral expressions of love and caring such as hugging. New relationships can be formed when a client joins a health or exercise club, Weight Watchers, church, synagogue or other religious organization, engages in a community sports activity or volunteers for a hospital or symphony orchestra activity support group (Figure 1, box 9).

If a client has low informational/emotional support (Figure 1, box 12), the advanced practice nurse could provide

the client with emotional/informational support until the client has identified sources that he/she can use for this type of support. Informational/emotional support can be used to help the client find ways to diet, exercise or follow stress management activities, it is information or feedback about how a client is following her/his therapeutic regimen. The nurse can give the client information (Appraisal) or feedback about how well he/she is doing in following his/her treatment plan. The nurse can also give emotional support with behaviors which give evidence of caring such as using attentive listening behaviors and praising the client's progress (Caplan, 1980). Certainly informational support about methods of dieting, exercising, lowering alcohol intake, stress reduction and medication-taking can be discussed by the nurse with the client (Simons, 1992). Other measures of reinforcing a client's adherence such as mutual goal-setting, contracting and behavior modification could be used by the nurse with the client as well. Clients with low social support should be assessed periodically for how well they remember or have cognitive understanding of the concepts about their disease they have learned and how well they have understood their treatment plan (NIH, 1987). Clients with low social support need to be assessed for their adherence during the intervention also using some of the same methods

used for clients with high social support i.e. keeping a diary, monitoring his/her own adherence behavior and reviewing how well she/he has kept appointments and was on time for appointments. Additionally, prescription refill records can be kept.

The nurse needs to also teach the client about how to use other resources in his/her support system for help in following his/her therapeutic regimen or treatment plan (Figure 1, box 11). One source of support for information is the American Heart Association which has a great deal of informational material about the disease, hypertension and its treatment. Other areas of support that the client may identify to help with informational support may be church groups he or she joins or a work group. Weight watchers is another self-help group which the client could use in gaining information about weight control. Support groups such as Weight Watchers supply information about kinds of foods to eat and techniques of flavoring and cooking foods that are low fat, low sodium and low calorie. Such groups provide information about self-regulatory methods of weight control. These methods could include when and where to eat to avoid temptation to overeat as well as other behavior control measures (Dunbar et al., 1979; Meichenbaum & Turk, 1987). These groups help a client to help themselves. The American

Heart Association is a source of information about hypertension and will provide the information free of charge to any individual client (American Heart Association, personal communication, April 19, 1993). Health care providers may buy quantities of materials from the American Heart Association for a nominal fee and the materials are appropriate as reinforcement of the teaching the advanced practice nurse would provide for the client.

Clients who have low social interactional support (Figure 1, box 14) can be encouraged by the advanced practice nurse to engage in community activities and groups and become involved with persons who have interests and problems in common with them (Figure 1, box 13). Social-interactional support or "social companionship" is the sort of support given which involves recreation of some kind or a diversion (Sherbourne & Stewart, 1991). It may be people gathering together for a recreational event, party, dinner, sport or other activity. Social-interactional support can be provided by recreational community sports activity and various volunteer groups. Senior citizens centers offer social-interactional support for those in the fifty-five to sixty-five age range as do community meals sites. Religious organizations offer social interactional groups within a client's age range also (Hogue, 1977).

The client who has low tangible support needs to be assisted to identify agencies or organizations in the community which provide tangible support (Figure 1, box 16). Tangible support is material support or aid (Sherbourne & Stewart, 1991). It involves an individual helping a client pay for medicine, physician or health provider costs, giving a client a ride to the clinic and etc. Church groups and organizations such as the Red Cross can be sources of tangible support if that is a need of the client's (Figure 1, box 15). The Red Cross provides rides to clinic and health care office appointments as do church groups or other religious based organizations (Hogue, 1977). Governmental programs as Medicaid and Medicare can be contacted for help in paying for health care needs and medications. United Way supported agencies may also provide a client with tangible support. The advanced practice nurse may be of help to the client by directing him/her to the appropriate agency or location to get help and preparing the client for the kind of forms and information needed to complete applications for the aid the client might need (Figure 1, box 15).

Some pharmaceutical companies will provide low-cost or free medication for clients with limited ability to pay for antihypertensive drugs. The client needs a prescription from the health care provider and then may contact the company

expressing his/her need for free or low-cost medication (American Heart Association, personal communication, April 19, 1993). Health care providers may also obtain free drug samples donated by pharmaceutical companies (Figure 1, box 15).

Those who are homeless or very poor have special problems. Poverty is highly related to social isolation and lack of a social support system (Carpenito, 1993). Those clients who are very poor or have lost their homes will most likely have completely lost sources of tangible support and will not be able to pay for visits to health care provider, medication, appropriate food or transportation to the clinic. There are various community resources available to them that the nurse can help them contact for assistance (Figure 1, box 15). These resources have been listed above. Other resources offering tangible support are senior citizens centers, United Way supported agencies and religious organizations like the Salvation Army (American Heart Association, personal communication, April 19, 1993).

Time Frames For Interventions

The client with low social support will require a great deal of the nurse's time and the need may vary considerably from one client to the next. As has been previously stated, no studies could be found which had evidence of the length of

time nursing interventions of this type take. One article ("Study of nurse vs. physician care", 1993) stated the average length of time a nurse practitioner spends with a client is 24.9 minutes. The source for determining the time for the intervention described in this protocol was Margaret Palermo, R.N., M.S.N. a nurse counselor with Paul Critelli, Ph.D. clinical psychologist. These behavioral counselors treat people with agoraphobia, other phobias and anxiety attacks and use behavior modification. Ms Palermo feels that six months is a minimum amount of time for a behavioral intervention. She sees clients for one hour once a week initially for one to two months, then less often for four to five months. Clients with low social support will need at least six visits totaling four and one half hours to establish a diagnosis of hypertension, be educated about the disease and its treatment and have a treatment plan established collaboratively between the nurse and client as well as be administered the MOS Social Support Survey (Appendix A). This should take about six weeks. Clients with both high and low social support will be asked about support persons before taking the survey to determine their status as to structural support and the survey will help the nurse determine who has low social support. Administering the survey, scoring it and discussing it will take

approximately an hour. If a client scores low on the social support survey, approximately one hour will be needed to assess social skills and begin an intervention based on whether the client has poor social skills or good social skills. If clients have good social skills and score low on availability of functional support, they may then need to be seen every two weeks for one month for short visits (30 minutes) to discuss their adherence problems, check their, blood pressure and weight and receive the intervention for enlarging and or developing their resources for functional support. Thereafter they may be seen once a month for 45 to 60 minutes to be monitored as to blood pressure and weight and have their adherence assessed. Additionally they may discuss problems with adherence and developing their social support resources. The unique characteristics of the individual client may make it necessary to allot more time as part of the intervention is social support from the nurse. As has been previously described, clients with low social support and low social skills will need to be seen, as the other clients, a total of four and one half hours, two weekly visits of fifteen minutes, three weekly visits of one hour, and two visits of one half hour. However, they should be seen thereafter at least one hour every two weeks for another two and one-half months to carry out the social skills

intervention as well as monitor adherence and physical parameters i.e. blood pressure and weight if appropriate. They may then be seen one hour a month for two months to reinforce social skills, adherence and monitor blood pressure and weight as well as reinforce their support-seeking efforts. The time with these low support clients may vary considerably.

The last visit will take an additional one hour and will be scheduled after the six-month intervention is over. The time will be used to have both the clients with high and low support retake the MOS Social Support Survey (Appendix A) and score the survey. Also all of the clients' adherence to the treatment plan and the influence of the social support intervention will be assessed in the same manner.

Those with low social support at the beginning of the intervention should be asked if they have formed any significant relationships with individuals or groups which have been supporting before they retake the MOS Social Support Survey at the last visit. All of the clients' blood pressures will also be assessed at the last visit (Figure 1, oval 9a and box 19).

The effect of the intervention on the group with low social support at the beginning of the intervention should be that this group scores higher on the MOS Social Support

Survey, reports adherence to the treatment plan and has reduced blood pressure.

Evaluation of Intervention

When a client has received the intervention for six months he or she will again receive the social support survey and the survey will be scored (Figure 1, oval 7a and box 17). Clients who had high social support at the beginning of the intervention should have the same or a higher score after receiving the intervention. Clients who had low functional social support at the beginning of the intervention should score higher on the social support survey after six months of the intervention.

Once the social support survey is administered, the client's adherence will be assessed by the advanced practice nurse (Figure 1, oval 8 a and box 18). It is best when assessing adherence to ask open-ended questions rather than questions which only require yes or no answers. For example, the advanced practice nurse may say, "How many times have you forgotten to take your medication in the last few months, or what kinds of lifestyle changes have you made to help bring your blood pressure down?" (NIH, 1987). Assessing adherence based on self-report is one method of determining whether a client has followed his/her therapeutic regimen (Gordis, 1979). Gordis (1979) cites research with evidence that no

method of assessing adherence is particularly reliable. Meichenbaum and Turk (1987) concur with this view and add "there is no straightforward relationship between treatment adherence and successful health outcome" (p. 38). The problem is that a client may adhere to the regimen completely and still not have a desired result because the treatment prescribed isn't appropriate. Thus, this possibility needs to considered as client adherence is assessed and the treatment plan changed accordingly. Furthermore the NIH (1987) and Meichenbaum and Turk (1987) recommend approaching a client in a nonjudgemental manner acknowledging the difficulty the client might be having in making lifestyle changes. If the client feels that the relationship with the health care provider is good and the health care provider is accepting of the client's lapses in adherence, a client is more likely to be truthful about his/her treatment adherence. This may be especially true if the advanced practice nurse or health care provider has established a trusting relationship with the client. Meichenbaum and Turk (1987) and Gordis (1979) list one method of determining adherence is by a pill count. During the intervention the advanced practice nurse could have monitored how often the client has refilled prescriptions as that fact can be documented (Meichenbaum & Turk, 1987).

During the interview to assess adherence, the client would be seen alone. The advanced practice nurse will ask the client, "What sort of difficulties have your noticed you've (client) had in following your therapeutic regimen?" Additionally, if a group has been formed, it would be helpful to have the group of clients and support person meet and the clients discuss how they followed their therapeutic regimens. Having support persons present may help the client remember the details of his/her rate of adherence when the support person has been involved in assisting the client to adhere. The advanced practice nurse in the interview to assess adherence could list each part of the therapeutic regimen and ask how difficult it was to adhere to that particular aspect of the treatment plan. The advanced practice nurse could ask the client to give the nurse an example of a typical diet for one or two days, or relate the kind of exercise done, how long and how often. The advanced practice nurse could elicit information on how much alcohol was ingested the evening before and etc.

During the interview with the client after the social support survey has been administered and scored and adherence behavior assessed, the client should be assessed as to whether the social support received helped him/her adhere and how it helped him/her adhere (Figure 1, oval 8a and box 18).

Meichenbaum and Turk (1987) report studies which were done by researchers to develop measures which assessed how family support persons helped the client follow the treatment plan. One questionnaire was developed for families of diabetic clients. It asks for specific behaviors by the family which were supportive. Thus, clients in this project can be asked to specifically identify behaviors that helped them adhere. Some examples are taken from The Physician's Guide. Improving Adherence Among Hypertensive Clients. They are the following:

> Did your family or support persons praise you for taking your pills, remind you to take your pills? How did your family or support person help you remember to take your medication? (p. 15).

> Did your family or support person help you avoid temptations to snack or eat late at night? Eat the same foods your ate? Praise you for losing Weight? Is the person who prepares your food willing to use less salt when cooking? (p. 17).

> Has anyone helped you reduce your alcohol intake? (p. 22).

Another way to assess how social support helped the client adhere is to simply ask during the interview, "What effect did the support of your family, friends, significant other or group you joined have on your adherence to the treatment plan and how did this influence occur?" This might be particularly helpful in assessing the influence of social support on adherence of clients who began the intervention with low social support.

Each client will have had an individual plan devised collaboratively with the advanced practice nurse as to how to use and or find perceived available support. The advanced practice nurse has empowered the client and educated him/her about how to find and use support to help him or her (the client) adhere. Each plan will be unique to each client. Thus, evaluating how social support helped the client adhere needs to be done according to each client's unique plan.

Finally, physical parameters can be assessed after the intervention has ended to help determine adherence (Figure 1, oval 8a and box 18), (Gordis, 1979). The client can be weighed at the beginning, during and at the end of the intervention. Significant loss of at least ten pounds at the end of the intervention would indicate that the client is dieting and exercising. Weight loss of ten pounds reduces

blood pressure in most hypertensive clients (NIH, 1993). Exercise enhances weight loss (NIH, 1993). Blood cholesterol levels should be evaluated at the end of the intervention (Figure 1, oval 8a and box 18) and if they are reduced to below 200 mg/dl that is related to following a low-fat diet (NIH, 1993). A low cholesterol blood level below 200 mg/dl lowers the risk of coronary artery disease which is elevated when blood pressure is high and lowering fat intake helps reduce weight (NIH, 1993).

After adherence and the influence of social support has been assessed, the most important outcome to be assessed is the client's blood pressure (Figure 1, oval 9a and box 19). The client's blood pressure should be consistently below 140 mm Hg systolic and 90 mm Hg systolic on several succeeding occasions by the end of the intervention.

The cost of the intervention per client is based on monthly rent for an office, electricity, heat and telephone expenses (M. Parrish, Accountant, personal communication, April 16, 1993), cost for reproducing the survey and algorithm, and nurse time based on hourly salary (Sandra Du Pree, R.N., M.S.N., personal communication, April 13, 1993). The total cost for the six month intervention for persons with high social support would be approximately $308.10 per client. The cost for clients with low social support but

good social skills would be approximately $323.10 per client and the cost for clients with low social support and low social skills would be approximately $346.10 per client. These costs are quite low when one considers that untreated hypertension resulting in hypertensive heart disease costs anywhere from $3500 to $9000 for a four to seven day hospital stay in a sample of hospitals in Western Michigan (Hospital Council for Health Affairs, Western Michigan, personal communication, April 13, 1993).

Development of Protocol

This social support intervention was developed from a review of social support research literature and studies in which researchers related social support, particularly functional social support to therapeutic regimen adherence. For the most part definitions of functional support were developed from Pinneau (1975) who studied social support relative to its buffering effect on occupational stress, and Kahn (1979) who defines social support as an "interpersonal transaction" (p. 85) and continues in his literature review by defining social support in terms of functional types of support (p. 85). Additionally concepts developed by House (1980) were used to further develop this project and Sherbourne and Stewart's (1991) MOS Social Support Survey was used as the basis for this intervention because it was

developed from Pinneau (1975), Kahn (1979) and House's (1980) definitions of functional social support.

Two handbooks, Meichenbaum and Turk (1987) and Haynes, Taylor and Sackett (1979), which review adherence literature and relate information about determinants of adherence, assessment of adherence and adherence-promoting strategies were used as resources in developing the protocol. Simons' (1992) study of nursing interventions related to adherence was also used as a resource in developing nursing strategies to promote social support in this protocol. Kinney, Mannetter and Carpenter (1992) discuss support groups and how they provide functional support and what kinds of functional support they provide.

Three National Institutes of Health publications The 1988 and the Fifth Report of the Joint National Committee on Detection, Evaluation, and Treatment of High Blood Pressure as well as the publication, The Physician's Guide to Improving Adherence Among Hypertensive Patients were sources for specific information on designing and use of social support approaches in improving adherence and the diagnosis and treatment of high blood pressure.

When the first draft of the intervention was completed, a synthesized copy of it, the social support survey (Appendix

A) and the first draft of the algorithm (Appendix B) were sent to three nurse practitioners for review.

One felt that the algorithm was clear and appropriate and she would use the protocol, but she would refer a client with low social skills to a mental health counselor for assessment and development of social skills. She felt this part of the intervention where the nurse is teaching social skills and use of social support to the client was not cost-effective. This nurse practitioner practices in a health maintenance organization where clients are seen every fifteen minutes (one hour for a complete health assessment) and the focus is on medical/biological outcomes. I feel this biases her view and that the intervention is strictly within the realm of nursing practice because it is a psycho-social intervention and costs less than referral to a mental health counselor. This nurse practitioner would use parts of the protocol, especially the MOS Social Support Survey on many kinds of clients.

Another nurse practitioner reviewer felt that the original estimates of how long the intervention would take in terms of hours were not accurate, that the intervention would take longer. She also thought six months was not enough time for a behavior change. However, Ms. Palermo, a nurse counselor previously described in a personal communication

felt that six months was enough time. Length of time spent for each client contact was increased at this second nurse practitioner's suggestion. She suggested that adherence and social support behavior be assessed as the intervention proceeded and that the health outcome should also be assessed to make sure that the treatment plan was working as the intervention proceeded. People may comply with a treatment plan at 100% level and it may not be effective. She also suggested use of groups for educating significant others and clients together and that the significant other be assessed as to his/her commitment to helping the client adhere. The second nurse practitioner was interested in the intervention and felt that she would use it in her practice.

A third nurse practitioner who reviewed the intervention felt that the intervention could be used, but that it was not clear what interventions were to be used to address those with high support in some areas and low support in others. This problem was addressed in the revision of the early draft (Appendix B). The final draft (Figure 1) separates out the various approaches to each type of functional support deficit.

Implications for Advanced Nursing Practice and Primary Care

This intervention should be further reviewed by a larger group of advanced practice nurses perhaps one hundred who

have been in practice for at least a year. That amount of experience should give them enough clinical experience to determine whether the intervention is feasible for them to use. If these nurses feel the intervention is appropriate for use to enhance adherence, it should be applied to clients under the conditions described in the protocol by as large a number of nurse practitioners as possible, and the results reported as a pilot study. A formal experimental study should be done also to show how nurses can use the four forms of functional support defined herein to enhance adherence.

An observational study could be done which describes precisely what the nurse is doing to reinforce functional support and how the client is responding with using social support relative to adherence. No studies done by nurses were found to test such interventions, and only a few studies which had evidence of how nurses use social support interventions to help a client adhere. Additionally no research provided evidence of lengths of time for specific nursing interventions. In the current national economic climate time is a factor in proving cost-effectiveness. Health Maintenance organizations see as many clients as possible in as short a time as possible (S. Gladstone, personal communication, April 9, 1993). Nurse practitioners are paid $13.00 to $30.00 an hour (S. Du Pree, personal

communication, April 13, 1993). An intervention using no technology or equipment will be cost-analyzed in terms of how much time it takes. If nurses wish to be reimbursed for interventions they need to be able to prove how long these interventions take. Studies need to be done to describe length of time for psycho-social interventions which are well recognized as the domain of the nurse ("Study of nurse vs. physician care", 1993). Such interventions are ideal for use in primary care settings as preventive interventions advanced practice nurses can use. In the long term they will help save health care costs because the clients will have learned a strategy to use in keeping themselves from developing more severe disease, thus saving the high cost of frequent hospitalizations for the treatment of target organ damage resulting from untreated hypertension (NIH, 1993).

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Appendix A
Mos Social Support Survey

MOS Social Support Survey

The following are some questions about the support that is available to you:

1. About how many close friends and close relatives do you have (people you feel at ease with and talk to about what is on your mind)?

Write In number of close friends and close relatives: _____ _____

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

(Circle One Number On Each Line)

	None of the Time	A Little of the Time	Some of the Time	Most of the Time	All of the Time
2. Someone to help you if you were confined to bed	1	2	3	4	5
3. Someone you can count on to listen to you when you need to talk	1	2	3	4	5
4. Someone to give you good advice about a crisis	1	2	3	4	5
5. Someone to take you to the doctor if you needed it	1	2	3	4	5
6. Someone who shows you love and affection	1	2	3	4	5
7. Someone to have a good time with	1	2	3	4	5
8. Someone to give you information to help you understand a situation	1	2	3	4	5
9. Someone to confide in or talk to about yourself or your problems	1	2	3	4	5
10. Someone who hugs you	1	2	3	4	5
11. Someone to get together with for relaxation	1	2	3	4	5
12. Someone to prepare your meals if you were unable to do it yourself	1	2	3	4	5
13. Someone whose advice you really want	1	2	3	4	5
14. Someone to do things with to help you get your mind off things	1	2	3	4	5
15. Someone to help with daily chores if you were sick	1	2	3	4	5
16. Someone to share your most private worries and fears with	1	2	3	4	5
17. Someone to turn to for suggestions about how to deal with a personal problem	1	2	3	4	5
18. Someone to do something enjoyable with	1	2	3	4	5
19. Someone who understands your problems	1	2	3	4	5
20. Someone to love and make you feel wanted	1	2	3	4	5

The MOS Social Support Survey may be obtained by writing or calling:

Cathy Sherbourne 1-310-303-0441

The Rand Corporation
1700 Main Street
Santa Monica, CA 90407-2138

One copy will be provided for each individual who requests it. The survey may be copied or reprinted.

Appendix B

Social Support Protocol for Clients with Essential Hypertension

Early Draft as Reviewed by Nurse Practitioners

Early Draft of Social Support Protocol for Clients with Essential Hypertension reviewed by Nurse Practioners