University of Massachusetts - Amherst
ScholarWorks@UMass Amherst

Doctor of Nursing Practice (DNP) Capstone Projects

College of Nursing

2009

Using the Transtheoretical Model in Primary Care Weight management: Tipping the Decisional Balance Scale for Exercise

Janice (Jan) M. Peterson
janp919@charter.net

Follow this and additional works at: http://scholarworks.umass.edu/nursing_dnp_capstone

Part of the Behavior and Behavior Mechanisms Commons, and the Nursing Commons

Peterson, Janice (Jan) M., "Using the Transtheoretical Model in Primary Care Weight management: Tipping the Decisional Balance Scale for Exercise" (2009). *Doctor of Nursing Practice (DNP) Capstone Projects.* Paper 3.
http://scholarworks.umass.edu/nursing_dnp_capstone/3

This Open Access is brought to you for free and open access by the College of Nursing at ScholarWorks@UMass Amherst. It has been accepted for inclusion in Doctor of Nursing Practice (DNP) Capstone Projects by an authorized administrator of ScholarWorks@UMass Amherst. For more information, please contact scholarworks@library.umass.edu.

Running Head: USING THE TRANSTHEORETICAL MODEL

Using the Transtheoretical Model in Primary Care Weight Management: Tipping the Decisional Balance Scale for Exercise

Capstone

Janice M. Peterson, D.N.P.(c), M.S., F.N.P., B.C.

University Of Massachusetts Amherst

School of Nursing

Requirement for Doctor of Nursing Practice

Spring 2009

Abstract

Changing or modifying a behavior that is addictive or potentially harmful is difficult for most people. The Transtheoretical Model (TM) (Prochaska, Norcross, & DiClemente, 1994) incorporates a compilation of previous theories, providing a framework for the stages of progression when deciding to change a problematic behavior. The stages include: Precontemplation, Contemplation, Preparation, Action, Maintenance, and Termination. Other constructs of the model, some adapted from previous models, include the Decisional Balance (Janis & Mann, 1977), Self-efficacy (Bandura, 1977) and the Processes of Change (Prochaska, Norcross, & DiClemente, 1994, Velicer, Prochaska, Fava, Norman, & Redding, 1998). Traditionally, examining the stages of change was in the domain of psychology; more recently it has been adapted for use in the primary care arena for various chronic conditions (Boudreaux, et al.,2003, Jimmy & Martin, 2005) as well as the basis for new models in primary care (Katz, 2001). One such chronic condition, leading to other co-morbidities and a factor in early death (LaViest, 2005), is overweight and/or obesity which leads to the challenge of weight management. Overweight patients desire direction with weight management issues (Potter, Vu, & Croughan-Minihane, 2001) yet primary care providers often express an inability to assist with meaningful treatment options other than eat less and move more (Bardia, Holton, Slezsak, & Thompson, 2007). The utility of the TM makes it well suited for use when tailoring healthy lifestyle information for patients during brief visits in primary care. Nurse Practitioners (NP) are trained to coach, teach, and support patients (Hayes & Kalmakis, 2007). Using the TM as a basis to determine the patient's readiness to change and the construct of Decisional Balance, NPs, through coaching strategies, can be available to assist patients with behavior change.

TABLE OF CONTENTS

Page

ABSTRACT……..2

TABLE OF CONTENTS……..3

CHAPTER

1. IDENTIFIED NEED AT CONNECTICUT RIVER INTERNISTS (CRI)……..6

2. CURRENT CLINICAL PROBLEM……...8

Obesity……..8

Unhealthy Lifestyle Behaviors……..9

Primary Care……...10

Coaching as a Technique……12

3. TRANSTHEORETICAL MODEL……13

Stages of Change……..13

Self-efficacy……15

Decisional Balance……16

Processes of Change……17

4. PROGRAM INTERVENTION RESEARCH……..19

5. TAILORED INTERVENTION FOR CRI……..23

Target/Benchmarks……...25

6. COMPONENTS OF THE PROGRAM INPLEMENTATION AND MONITORING……25

Internal Review Board……..25

Design……..26

Page

Sample……26

Instruments……28

7. PROGRAM……28

Goals and Objectives……28

Stakeholders……29

Program Impact and Effect Theories……29

Organizational Plan……30

Service Utilization……30

Determinant Theory……31

Intervention Theory……31

Impact Theory……31

Outcome Theory……32

Cost Analysis……32

9. PROGRAM EVALUATION……33

Sample……33

Design……34

Methods/Instruments……34

Data Analysis……35

Qualitative Data……36

Interpretation and Conclusions……37

10. FUTURE DIRECTIONS……38

Page

Plan for Dissemination……..39

11. CONCLUSION…….39

REFERENCES……40

AUTHOR NOTE……..48

APPENDICES……..49

Identified Need at Connecticut River Internists

The project proposed in this paper was the result of a Phase I pilot project to identify overweight/obese patients in a primary care internal medicine practice. Phase II of this project will focus on those identified patients who requested information about weight loss. On October 1, 2008 I surveyed the electronic medical record (EMR) for patient statistics at Connecticut River Internists (CRI), an Internal Medicine practice in Turners Falls, MA, with two nurse practitioners (NP), one physician assistant (PA) , and five physicians (MD). This practice is in Franklin County, Massachusetts, designated an economically depressed area. The patient population for the county is primarily white non-Hispanic (93.4%) with a total population of 72,183 residents. The median household income is $44,393 compared to Massachusetts household income of $53,657. Data for 2004 shows 9.2% of the county residents are below the federal poverty level (U.S. Census, 2006).

The practice began using an EMR in October of 2006. Using the EMR, 'e-Clinical Works' (eCW, undated), I accessed data for the dates 10/1/06-10/1/08, for patients male and female, aged 18-70, which totaled 8,866 individuals. I subdivided that group into those with a basal metabolic index (BMI) range of 25-50 and obtained a total of 5240 patients. BMI is determined by taking a person's weight in kilograms (kg) then dividing by their height in meters (m) squared (Gelber, Gaziano, Orav, Manson, Buring & Kurth., 2008). That group was subdivided further into those who had diagnoses of obesity (ICD9 code 278.00) or overweight (ICD9 code 278.02) for a total of 604 patients. This clearly showed a gap between those with a BMI indicating

overweight/obesity, 5240, and those with a diagnosis of overweight/obesity, 604. Only 12% of those patients who qualified for the diagnosis by BMI number had been identified as such.

The problem statement at this practice site for Phase I was under-diagnosis of overweight and/or obesity among patients in a primary care practice, as indicated by a greater number of documented BMIs ≥25, than number of documented diagnoses of overweight and/or obesity in the electronic charts. This is related to provider inconsistencies in identifying the condition. Given that primary care is the entry point for health care prevention and education, provider documentation, as influenced by inattention to BMI and ineffective appropriate cues, such as subjective observation, regardless of availability of a BMI indicator in the patient electronic chart was lacking. The pilot project resulted in the identification of a total of 156 patients during a two month time frame with a BMI ≥ 25; of those, 136 had a BMI≥ 27. Overweight patients indicating a desire for weight loss information totaled 77. Those who did not want weight loss information totaled 46, for a combined total of 123 respondents. This demonstrated that 63% of the overweight patients identified in Phase I expressed a desire for weight loss information.

Phase II of the program focused on those patients who indicated they wanted guidance with weight loss. The problem statement for Phase II was: desire for meaningful weight loss guidance by overweight patients at CRI, as indicated by a 63% response for desired weight loss information, is related to difficulty losing weight and maintaining weight loss through lifestyle changes. Incongruous healthy food choices and activity levels, as influenced by attitudes toward food and exercise, family culture/habits, or time constraints, are complicated by a provider's assumptions that patients will make lifestyle changes once informed of the health

hazard. The focus was to assist patients to examine a personal Decisional Balance of pros and cons, a construct of the Transtheoretical Model (TM) of behavior change (Prochaska, Norcross, DiClemente, 1994), related to the exercise component of weight loss.

Current Clinical Problem

Obesity

There are many social, cultural, economic, and behavioral reasons for weight increase in our society; consequently, overweight and obesity are serious health problems in the world today. Weight related issues are most often the result of ingesting too many calories or expending too few calories for the body's baseline metabolism. Overweight is defined as a body mass index (BMI) of 25-29.9 and obesity is defined as a BMI of 30 or greater. It is estimated that 66.3% of adults in the United States are either overweight or obese according to National Health and Examination Survey (NHANES) data for 2003-2004. Obesity is a factor in the development of many other chronic, preventable health problems such as diabetes, hypertension coronary artery disease, stroke, hyperlipidemia and osteoarthritis to name several (Lemay, et al., 2003). Obesity is the second largest behavior-related cause of death (LaViest, 2005) in the United States; it is responsible for more than 280,000 deaths per year (USDHHS, 2002). The cost of obesity and its related illnesses, to insurers and eventually consumers, is estimated to be $117 billion annually (Medical News Today, 2/18/08, Tao & Glazer, 2005). Some of the goals of *Healthy People 2010* (2002) are to increase the proportion of people who are a healthy weight by 60%, to reduce the proportion of adults who are obese by 15%, and to reduce the proportion of children and adolescents who are obese by 5% by the year 2010.

Healthy People 2010 states that permanent lifestyle changes must include healthy dietary habits, decreased sedentary behavior and more physical activity in order for individuals to maintain a weight loss.

Unhealthy Lifestyle Behaviors

Living with a behavior or habit that is potentially harmful to individuals becomes a challenge when that behavior or habit begins to cause problems. Most of these behaviors initially begin as desirable experiences but eventually become habits that result in harmful physical or psychological life choices. Some examples are: cigarette smoking, overeating, sedentary lifestyle, alcohol consumption, or gambling. Many will tell you they are addicted to their behavior. Confronted with the need to change that behavior, some will say they have no desire to change, others will say they can't or don't know how, yet others may begin instituting suggested changes. Regardless, when faced with the reality that a habit forming behavior is no longer benign, individuals struggle with deciding to alter that behavior or deciding how to begin, rarely does change come easily. Harmful health behaviors are often addressed in the Primary Care office setting. Growing emphasis is being placed on prevention and health maintenance, and providers are often expected to identify, evaluate and treat conditions unrelated to the acute problem of the patient during the current office visit (Balaz, et al., 2000) Nurse Practitioners (NP) are well positioned by virtue of their training to provide guidance for patients with weight related issues. ANA's Standards of Practice (2004) for NPs include health promotion and teaching that is appropriate to the patient's learning needs and readiness to learn. Providing encouragement, support, guidance or feedback to the patient is within the

domain of the NP's practice (Hayes & Kalmakis, 2007). The dilemma is to be able to deliver brief but effective options about lifestyle habits. Many have studied how people change behavior resulting in many theories about behavior change. One such theory that is being used with chronic health conditions is the TM with its constructs for operation (Boudreaux, et al., 2003).

Primary Care

In health care, it is important to meet the patient at their level of readiness when counseling about health behavior changes. It is not helpful simply to tell someone their weight is a health risk problem and they should lose weight. Overweight, barring a physical condition, is usually the result of two common addictive habits: overeating and sedentary lifestyle. Diet and exercise, the mainstays of weight management education, are not useful information if the patient is content with the status quo despite the health consequences or are currently fighting an up and down battle with weight. Studies have shown that using the TM for weight management is beneficial in primary care as interventions can be tailored to the patient's level of readiness to change and accept information (Wee, Davis, & Phillips, 2004, Johnson,et al., 2008) This includes behaviors for healthy eating/improving diet, exercise, managing emotional distress, and weight loss interventions.

The National Heart, Lung and Blood Institute (NHLBI, 2000) recommends that providers assess patients' motivational readiness to change weight related behaviors, and calls it central to any weight management treatment. Some patients however, may not be ready to examine or confront specific problems concerning their lifestyle choices that require modification, and

therefore, providers need to be able to offer more tailored information and/or counseling than what is typically offered: "eat less and exercise more". Weight management is not a quick fix and office visits are usually brief; however, using the TM and Decisional Balance to determine a patient's readiness as well as motivation and barriers to change, over a period of time, the NP can assist with that change process.

Research by Potter, Vu, and Croughan-Minihane (2001) showed that patients want more help from their providers with weight management issues and that weight loss is important to them. According to the results, the most common weight loss approach used by physicians was simply telling patients to lose weight (48%), followed second by not bringing up the subject of weight (33%) during a visit. Despite those findings, a great number of patients are eager and want to discuss weight loss with their providers. The Primary Care Obesity Project at the Mayo Clinic, Rochester (Bardia, Holton, Slezsak, & Thompson, 2007) showed that some of the potential barriers to diagnosis and therefore treatment by providers were found to be: lack of knowledge or confidence in treating obesity, lack of time, forgetfulness, lack of patient motivation and pessimism about obesity management. Other reasons cited include lack of resources, lack of insurance reimbursement, lack of knowledge of effective interventions (Bowerman, et al., 2001). Foster, Wadden, Makris, Davison, Sanderson, Allison, and Kessler's (2003) study indicated that primary care physicians viewed obesity as primarily a behavioral problem caused by physical inactivity. They suggest that physicians may not feel qualified to provide behavioral training due to their focused medical education. NPs on the other hand, are trained to coach, teach, and support patients (Hayes & Kalmakis, 2007).

Coaching as a Technique

Coaching as a NP strategy has been used successfully with other health related issues. Coaching as described by Hayes and Kalmakis (2007) allows the patient to take responsibility for his/her actions, while providing nursing support, guidance and feedback as they move toward attaining a personal goal. The NP coach can assess a patient's stage of readiness to change, assess their confidence, and tailor information and support accordingly (Hayes, McCahon, Panahi, Hamre, & Pohlman, 2008). Whittmore, Chase, Mandle and Roy (2001) described the goal of nurse coaching to assist the patient with a decisional balance between a needed lifestyle change and their current lifestyle. They continue to describe the highlights of a coaching intervention, in which the health coach: provides accurate information on the condition based on the objective facts of the condition, patient status, and patient lifestyle, assists the patient in identifying barriers and facilitators to integrating lifestyle change, provides motivational guidance to identify individualized and realistic integrative strategies, provides feedback and reinforcement through praise, positive encouragement, and guidance with the problem, assists in identifying body and symptom monitoring to self-evaluate the efficacy of personal strategies and decisions, and individualizes an approach based on the lifestyle, needs, and the personal goals of the patient. In a later study with Melkus, Sullivan and Grey (2004) Whittmore describes the intent of nurse coaching for diabetes: to provide education, to assist the patient into integrating treatment recommendations into daily life and to provide psychosocial support for change in roles, relationships and emotions. Clearly, this technique involves patient

generated goals and directions for change. The NP, as a partner in the process, provides assistance, reframing when necessary, and support to the patient during the process. Edelson (2009) clarifies what coaching is: strength based, focused on the present and future, concrete and practical, pragmatic problem-solving, and collegial.

Transtheoretical Model

The Transtheoretical Model (Prochaska, et al., 1994, Redding, Rossi, Rossi, Velicer, & Prochaska, 2000) is a paradigm for behavior change in individuals and is the theory that guided this project. It has been used as a method to determine individuals' readiness to change behaviors. Originally developed as a self-change model in conjunction with smoking cessation in a white male population, it has been used for decades with a broad range of conditions and individuals leading to behavior changes. According to the authors, the TM builds upon a compilation of the strengths of psychoanalysis, behaviorism, cognitive therapies, existential analysis and humanism. The constructs or framework of the TM include: the Stages of Change, Self-efficacy, Decisional Balance, and Processes of Change. The focus of this program was on the Stages of Change and the Decisional Balance, but the role of Self-efficacy cannot be ignored.

Stages of Change

The cornerstones of the model are the six Stages of Change, the steps individuals use to progress through an intended behavior change (Figure 1). In order to successfully change a behavior one must progress, in order, through each stage. Relapse is a reality and can occur at any stage. The stages include: Precontemplation, Contemplation, Preparation, Action,

Maintenance and Termination, though Preparation was a later addition to the earlier model (Prochaska, et al., 1994, Redding et al., 2000). The first stage, Precontemplation, depicts individuals who are not ready to consider a behavior needs changing, may not think there is a problem with the behavior, or have no desire to change it within the next six months. At this juncture there are more rewards to keeping the behavior alive than there are to changing it. The second stage is Contemplation; individuals in this phase are considering changing their behavior within the next six months. Those in the Contemplation stage may still be ambivalent about change; a part of them wants to change but may be waiting for the ideal time to make a commitment to it, or they may be fearful of the unknown changes to come. Those in the next step, Preparation, are ready to make a behavior change within one month; they acknowledge that change is necessary. Many times the individuals in this stage have made past attempts to change the problematic behavior and are taking small steps toward their goal. The fourth stage is Action, it encompasses active behavior change of one day to six months time. Because the behavior is new, risk for relapse is high at this stage. The Maintenance stage is a continuation of the Action stage for six or more months. The new behavior becomes more routine and relapse potential is lower than in the previous stage. The final stage, Termination, occurs when the problem behavior is no longer a temptation or a threat. Some individuals never reach this stage, as temptations of old behavior or its cravings may exist a lifetime, hence they remain in the Maintenance phase. Not being able to terminate an old behavior can depend on the behavior being changed and whether it involves complete abstinence, such as smoking cessation, or simply modification, such as dietary or activity changes. It is often easier to eliminate something completely rather than just to alter it. Some individuals Relapse or Recycle

through previous steps and may even return to Precontemplation. The nature of this cycle is its fluidity, allowing for progression and regression while changing behavior. In order for the cycle of change to progress, individuals must have a belief in their ability to succeed, also known as self-efficacy.

Self-efficacy

Self-efficacy, originally introduced by Bandura (1977), as part of his Social Cognitive or Social Learning Theory, and another construct of the TM, describes the self-confidence individuals must have in order to change behaviors. Bandura believed that behavior change through various therapies was rooted in the strengthening of self-efficacy. He defined it as the strength of an individual's expectation. He hypothesized that the strength of a person's self-efficacy determined his or her coping ability and that this depended, in part, on prior experience.

Self-efficacy as used in the TM means: capability, strength, competence, power, or ability (Kipfer, 2005) with the emphasis on self-change. Redding et al. (2000), discussing behavior change models, indicated Self-efficacy was a very strong influence on behavior change and that confidence was a stronger predictor of future behavior than past experience was. This reinforces repeated efforts to change, tenacity, not giving up, that success is determined by confidence rather than past success or failure. Prochaska and colleagues' (1994) adaptation of Self-efficacy to the TM shows that as individuals gain mastery of one Stage of Change to another, confidence grows and self-efficacy rises. The concept of success must be defined by each individual making the attempt. Confidence to change is not necessarily all encompassing,

it may be stronger for certain aspects or conditions of change and weaker for others. Motivation to change comes from a balance between self-confidence and a personal perception of the positive and negative aspects of changing.

Decisional Balance

Another construct of the TM is Decisional Balance (DB), a focus of this project. It describes the positive and negative reasons to change a behavior. Decisional Balance as a concept was originally discussed by Janis and Mann (1977) as a conflict model and included eight factors rather than the two, pros and cons, which are used in the TM (Prochaska, Velicer, et al., 1994). In a study by Velicer, DiClemente, Prochaska and Brandenburg (1985) principle components analysis was performed on twenty-four factors for smoking cessation, resulting in the two decisional balance measures currently used in the TM, the Pros and the Cons. These constructs are similar to those found in other Health Theories, such as the benefits and barriers of the Health Belief Model, the benefits and costs of the Theory of Reasoned Action/Planned Behavior and the motivation and resistance of the Pressure System Model (Redding, et al., 2000, Katz, 2001, Katz, Shuval, Comerford, Faridi, & Nijike,2008).

The strength of either of the two factors of the TM varies according to the Stage of Change. The Strong and Weak Principles, originally discovered by James Prochaska, states that when progressing from Precontemplation to Action, the Pros increase by one standard deviation while the Cons decrease by one half of a standard deviation (Redding, et al., 2007, Prochaska, 1994, Sarkin, Johnson, Prochaska & Prochaska, 2001, Hall & Rossi, 2008). Individuals in the earlier stage, Precontemplation, have more reasons against change and fewer reasons

for change. Those in Contemplation have an even number of Pros and Cons for changing, leading to the ambivalence often felt in this stage. As individuals approach the Action stage, the Pros begin to outnumber the Cons. Redding and cohorts (2000) state that making a decision to move to the next stage depends on the importance given to the positive and negative reasons by the person making the change. Individuals have unique sets of perceived benefits to move them foreword and perceived barriers that keep them where they are. Decisional Balance is only one aspect of the TM that assists individuals through the change process, the Processes of Change, activities that "help modify your thinking, feeling, or behavior (Redding et al., 2000, p. 25)" are important components also.

Processes of Change

Within the Stages are the nine Processes of Change, another construct that describes the specifics of how the Stages occur. Concepts incorporated from other models and theories of psychology can be found in this construct (CPRC, undated, Prochaska, et al., 1994). The Processes of Change show how behavior change actually occurs, using behavioral and experiential activities. Individual Processes can be found in several Stages but with different focuses. The first Process, consciousness-raising, is taken from the psychoanalytical model. It involves seeking new information about, developing understanding of, and gaining insight or feedback about a particular problem. The second Process, Social Liberation, a concept taken from humanistic psychology, is a focus on the external environment and the situations available to assist with reinforcing the new behavior. Examples can include: no smoking areas, support groups or low-fat menus. Emotional Arousal, the third Process of Change, also described as dramatic release or catharsis, is taken from the psychoanalytic field. It is similar to

Consciousness Raising but it allows for expressions of loss and feelings related to behavior change. A fourth Process, Self-reevaluation, is taken from experiential psychology. Self-reevaluation is an honest reassessment of the current situation and envisioning the future with the changed behavior. Often this is where the Decisional Balance or assessment of the Pros and Cons of the current situation take place. Commitment, also known as self-liberation, is the fifth Process of Change and is taken from the humanistic field. It acknowledges the responsibility of the choice made to change a behavior, the personal ownership of a behavior change. Commitment encompasses the belief that one can make the change; Self-efficacy is a strong component of this Process. Prochaska and associates (1994) clarify that this process is first a private and then a public announcement of intentions. Public commitment strengthens the desire to move foreword. The sixth Process is Countering, originally found in behavioral psychology. This is the use of substitution or meaningful alternatives for the problem behavior. Seventh, Environmental Control, is also a concept of behaviorism. It involves self-generated restructuring of the environment to avoid triggers that might lead to relapse, such as changing routine, removing temptations, or posting reminders. Rewards or reinforcement management, also from behavioral psychology, is the eighth Process. It is positive encouragement either by others or by self that sustains the changed behavior. The last, Helping Relationships, a humanistic perspective, is a process used at all stages. It involves using the support of significant others while attempting to change and maintaining the change. Self-change does not mean doing it alone. Though the behavior and the change must come from within, asking for help and encouragement is part of this process.

Program Intervention Research

A review of the current scientific literature was performed using CINHAL, PubMed, and Google Scholar Beta databases for research from 2000 to present. Key words included: decisional balance, transtheoretical model, motivation, health behavior change, weight, nurse coaching, and primary care. Research shows that the decisional balance of pros and cons vary according to the TM stage of change one is in. In the earlier stage the importance one places on the cons of changing outweighs that of the pros. As one progresses toward action the pros increase by one standard deviation and the cons decrease by on half of a standard deviation according to the Strong and Weak Principles (Prochaska, 1994) discussed earlier, a concept that has been reproduced over time (Prochaska, Velicer, et al., 1994). The following studies discussed include previous research used to support my program in the primary care arena.

Current literature supports the concepts of the TM and DB for use in a variety of health behavior change programs (Sarkin et al., 2001, Pinto, Lynn, Marcus, DePue, & Goldstein, 2001, Boudreaux, et al., 2003, LaBrie, Pedersen, Thompson, & Earleywine, 2006, Katz, et al., 2008, Whittemore, Chase, Mandle, and Roy, 2001). In the six research papers chosen for this project, the health behaviors for four were focused on physical activity/exercise (Sarkin, et al., 2001, Pinto, et al., 2001, LaBrie, et al., 2006, Katz, et al., 2008) and one also included avoiding dietary fat, (Boudreaux, et al., 2003), one on condom and alcohol use (LaBrie, et al., 2006), and one involving coaching type ll diabetic patients (Whittemore, Chase, Mandle, and Roy, 2001). Five employed the use of the TM in determining stages of readiness to change behavior and all used the construct of DB. Four studies used an appropriate sample size ranging from 316-515

participants; two had a smaller sample of 41 students (LaBrie, et al., 2006) and one with nine patients (Whittemore, Chase, Mandle, and Roy, 2001). Three research articles used a randomized control test (RCT) design (Pinto et al., 2001, LaBrie, et al., 2006, & Katz, et al., 2008), two used a cross-sectional design (Boudreax, et al., 2003, & Sarkin, et al., 2001), and one used a multimethod design incorporating an interpretive approach (Whittemore, Chase, Mandle, and Roy, 2001).

One study (Sarkin, et al., 2001) focused on validating a staging algorithm for moderate exercise, using a questionnaire format for several constructs to determine consistency with the stages, DB and physical activity (PA) in an overweight population. The findings indicate support for the Strong and Weak principles across the stages of change. Participants recounted more activity in the action and maintenance stages coinciding with more pros and fewer cons in those stages, as compared to the earlier ones. The study may have been limited by its design and a more accurate assessment of outcomes and relapse might be better be served by a prospective study, according to the authors. This study supports my use of the TM and DB as tools for use with an overweight population regarding PA.

Four others (Pinto et al., 2001, Katz et al., 2001, Boudreax, et al., 2003, Labrie et al., 2006) examined the effects of an intervention or counseling using the TM staging; two were related to physical activity, one to dietary fat and exercise, and one to risky sexual behavior. One study (Whittemore, Chase, Mandle, and Roy, 2001) used the DB concepts of motivational strategies and barrier elimination to individualize a nurse coaching approach with diabetes (DM) treatment. Pinto et al. (2001) related the effects of the constructs of the model on

physical activity levels with patients. Their program consisted of the Physically Active for Life (PAL) counseling intervention incorporating the principles of the TM and a patient–centered approach that is also doable for physicians. Their two hypotheses were: to determine if the intervention would produce significant increases in self-efficacy and decisional balance and to determine if those constructs worked as mediators for readiness to change behaviors. The intervention consisted of assessing patients' readiness to change physical activity behavior and counseling patients about the DB. Physicians helped patients with identifying personal benefits, overcoming barriers and determining goals for PA. The results for the DB tool showed that a higher number, indicated by more pros, correlated with a higher motivational readiness to exercise. The authors concluded that "the positive effects on the decisional balance were largely due to significant increases in the pros of exercise" (Pinto et al., 2001, p. 5), thereby developing a positive DB. The effects of the behavior change were not as strong for the eight month assessment period. This is one study that evaluated the results at an early interval of six weeks, which is similar to my program timeframe of eight weeks. Another study (Whittemore, Chase, Mandle, and Roy, 2001) during a brief, eight week intervention, used a nurse coaching method with diabetic patients to facilitate a lifestyle behavior change.

Katz, et al. (2001) tailored the TM to the specifics of the primary care practitioners practice and renamed it the Pressure System Model (PSM). One of the goals of the research was to evaluate whether patients' PA differed in the intervention group counseling using the PSM from the control group. Katz and colleagues focus using the PSM is a variation of the TM DM, more importance is placed on removing the patient's barriers to change rather than promoting the positive reasons to change, thus, theoretically, reducing the guilt an individual

feels in case of relapse. The results of this paper show a statistically significant increase in PA in the intervention group and no statistical difference in PA with the control group. This takes the construct of the DB and shows its efficacy in brief primary care visits as well as the importance of removing barriers to change and not just supporting the benefits of change.

Boudreaux and colleagues (2003) used the DB and self-efficacy with stages of change in a low income multi-ethnic population for PA and dietary fat reduction. Their DB measure for exercise was examined and validated for construct validity using principle component analysis. The results indicate the importance of assessing stage of behavior change accurately. It showed a significant correlation between dietary fat consumption and exercise stage of change, however, motivation for behavior change for more than one variable may not be the same. This speaks to the premise that when working with weight management issues, patients may be at different stages of readiness to change for either diet or exercise.

The study by LaBrie and associates (2006) used a different health concern, risky sexual behavior among predominantly white male college students involving alcohol use and condom use. They postulated that by using the DB as a solitary intervention condom use would increase. The researchers used a DB worksheet so that participants could consider their personal reasons and the importance of each reason for or against condom use, rather than using a DB tool with pro and con statements. Facilitators assisted the participant students with weighing the importance of their chosen reasons. The facilitators were non-judgmental and non-confrontational, as per Miller and Rollnick's (2002) motivational interviewing. The outcome indicated the DB intervention increased the students' motivation to change behavior.

This study supports my decision to use a coaching method and to use a patient generated DB to encourage behavior change.

Whittemore and colleagues' (2001) use of nurse coaching for a lifestyle change supports my use of that method to interact with my program patients. Though the focus of the study's intervention was with a small sample of homogeneous diabetic patients and the measurements were fasting blood sugars and diet and exercise, the patients received individualized nursing support, educational reinforcement, psychosocial support, and motivational guidance. Strategies for lifestyle changes for DM were individualized according to the needs of the participants to include their perceptions in relation to maintaining diabetic lifestyle change. The findings indicated that nurse support and motivational guidance were integral aspects of the intervention.

Tailored Intervention for CRI

The purpose of this performance improvement project was to use a brief interventional tool (Decisional Balance) (figure 2-1, 2-2), a construct of the TM, during a typical 15 minute office visit at an internal medicine practice, to assist overweight primary care patients in decreasing their barriers to and increasing their positive motivation toward physical ativity. The Decisional Balance scale allows individuals to make a list of their own behaviors and other factors that serve to help them change or block them from changing a behavior (Redding, et al., 2000). With this in mind, the questions I sought to answer were: will a brief 15 minute patient-provider coaching program, using the patient's own DB for PA, prevent relapse or move the

patient forward in the TM stage of readiness? Would this intervention also help these patients to increase their physical activity and perhaps reduce their BMI?

I mailed information to 94 overweight/obese patients indentified in Phase I of this project inviting them to participate. Initial heights, weights, and BMI (Gelber, et al., 2008) had been recorded from previous well visits during the fall of 2008. Information on their readiness to change weight loss behavior had also been noted. For those who did not want information (my control group) I mailed a cover letter(figure 3), two consent forms, and an International Physical Activity Questionnaire (IPAQ) short form (figure 4), (2001) consisting of 4 questions, included with a return envelope. I asked those in the control group who consented to participate, to see me for a 15 minute office visit at the end of the program for a height and weight, to redo the IPAQ and complete an University of Rhode Island Change Assessment (URICA) short form (figure 5)(Cancer Prevention Research Center, 2004, Rossi, Rossi, Velicer, & Prochaska, 1995). For those who expressed a desire for weight management information (my intervention group) I mailed a different cover letter (figure 6), two consent forms, an IPAQ, a decisional balance tool, and return envelope. I planned to meet with the intervention group two to three times during the project for a series of fifteen minute office visits to assist with their personal decisional balance information. They also were to meet with me at the end of the project for a height, weight, repeat IPAQ and URICA and to review how their decisional balance sheet may or may not have changed.

I met with the patients on Wednesdays, which is my usual day off from the practice, or before or after hours by arrangement. I was also available by work phone for any questions or

concerns. There was no co-pay for the encounter but the patient's insurance was billed for a usual office visit for counseling based on the patient's particular co morbidity to overweight/obesity. I met with the four physician partners in the practice at the onset to explain the project and received their approval for it.

The actual intervention consisted of reviewing the decisional balance objectives originated by the patient, supporting their motivation (pros) and examining barriers (cons) using nurse coaching methods that were described previously. I thanked the intervention participants by giving them a pedometer from *America on the Move*™ and all participants with a walk aerobics DVD from *Walk at Home*™. The DVD selections included one with five 1-mile walks, a walk for men that I gave to the two male controls and a walk for older adults that I gave to the participants in their 70's.

Target/Benchmarks

Due to the brevity of the length of the program, two months, I did not expect to obtain the usual benchmarks. Established initial weight loss goals are usually 5-10% of the individual's current body weight. I ran my program from March 1 to May 1, 2009 (Figure 7), two months, with weight loss as a secondary benefit.

Components of the Program Implementation and Monitoring

Internal Review Board

This project was submitted to the Internal Review Board (IRB) of the University of Massachusetts, Amherst, School of Nursing and received exempt status. Identifying patient

information was protected as per guidelines submitted. Information specific to the IRB submission may be obtained through the Program Coordinator.

Design

I planned on using a two group prospective cohort pre- and post-test design to determine the patient's TM stage of change, BMI, determined by height and weight, and IPAQ pre- and post-project. I also planned to use a qualitative analysis of the decisional balance topics, my independent variable, to describe the reasons patients had that motivated toward or deterred them from physical activity. I planned to use a paired t-test for the IPAQ, URICA, and BMI data as my dependent variables to determine if the project assisted with exercise behavior improvement and potential weight loss as evidenced by a lower BMI, with progression to a higher stage of change or maintenance of the initial stage of change.

Sample

A purposive convenience sample of 123 patients at CRI with a BMI $\geq$25 were identified in Phase I who responded to the request for information about weight loss. Of those, 77 expressed a desire for weight loss information and were to be invited to be in the intervention group; and 46 expressed a desire not to receive weight loss information and were to be invited to be in the control group. Because of various reasons such as address change and the fact that I used a BMI$\geq$27 the numbers reduced to 59 and 35 respectively, 94 mailings were sent out. For a paired t-test my sample size for each group would be 33 with an alpha of 0.05., a power of 0.80, a sigma of 1, and a true mu 0.05 (Lenth, undated, Issel, 2008). Since I was starting with a larger pool of potential patients, I hoped to be able to attain that sample size for both groups.

Instruments

There are several quick and easy tools in the public domain to assist with this program. One was taken from the University of Rhode Island ,where the TM originated, entitled University of Rhode Island Change Assessment (URICA-short form) (Cancer Prevention Research Center, 2004) (Figure 5). It consists of four yes or no answers and was developed specifically for identifying behavior change with weight management. The stages, as previously described, include: precontemplation, contemplation, action and maintenance. Preparation was not included as a stage at the time of development and validation (Prochaska et al., 1994). A key to assist with interpreting the result is available; based on these answers a reviewer can determine the patient's current stage of change readiness.

The International Physical Assessment Questionnaire (IPAQ) (Figure 4) 7-day is a validated tool that comes as a long or short form to be self-administered or read to the individual. It is an instrument designed primarily for evaluating physical activity in adults. The IPAQ measures actual METS, which are multiples of the resting metabolic rate and thusly determines levels of activity as low, moderate or high. Scores are computed by pre-determined MET activity values multiplied by the number of minutes of activity performed per day multiplied by the number of days per week to determine METMIN/WEEK. For examples, vigorous PA has a value of 8.0 METS, moderate PA a value of 4.0 METS, and walking a value of 3.3 METS. I chose the self-administered short form for ease of patient use and time constraints in a brief office visit.

Height and weight was determined by the use of a stadiometer and a weight balanced scale that is calibrated professionally every year. A patient's BMI is automatically calculated through eCW when height and weight is entered into the EMR.

For the qualitative portion of the program the patients were given a two page Decisional Balance pamphlet (Decisional Balance Exercise, undated) (Figure 2-1, 2-2) taken from an online site from Nova Southeastern University in Florida. This format assisted the patients in expressing their unique motivators and barriers toward physical activities.

Program

Goals and Objectives

For this project, my primary goal was to have increased physical activity/exercise by patients in the intervention group who have developed and discussed a personal decisional balance tool as compared to those in the control group. This would be evidenced by improvement in the physical activity questionnaire (IPAQ). Secondly, that motivation to change the lifestyle behavior would be reflected in the URICA stage of change form by moving forward a stage or remaining in action/maintenance, without relapse backward. A secondary goal was that weight loss may occur as a result of this intervention. My objective was, by May 1′ 2009, after two months in the program, patients in the intervention group will achieve a greater amount of time devoted to physical activity/exercise by 30%. Healthy People 2010 (2002) recommend a goal of increasing the proportion of adults who engage daily in moderate PA for 30 minutes per day by 30%.

Stakeholders

The stakeholders in this project are the partners, staff, patients and the coordinator. Since I am a provider at this site, I have first hand knowledge of the general operation and the billing practices. A timeline was expanded from the fall 2008 Phase I project (figure 8) and includes research, preparation of appropriate tools, discussion with stakeholders, obtaining educational materials, meeting with patients and keeping parties abreast of the project in general as well as opportunities for feedback. Preparation for the project took place before March 2009, including development of forms, meeting with stakeholders, printings, mailings, etc. The actual time spent with the patients, including documentation of the meetings and measurements, occurred between March 1, 2009 and May 1, 2009. Most of the time on the program was spent by the coordinator. Staff at CRI admitted the patients as a routine office visit and waived the co-pays per the coordinator's instruction.

Program Impact and Effect Theories

Program theory guides the process of this project (Figure 9). The program theory is explained in Figure 4 of this paper. Phase II of this project is fairly straightforward. Data collection showed a significant number of identified overweight patients, and 63% expressed a desire for weight loss information. The project was demonstrated in my place of employment with approval of the partners. I was fortunate to be able to have used the infrastructure and resources in place at CRI.

Organizational Plan

The office allowed the Coordinator (author) to use the printer, personal exam room, office space, and computer program for patient interactions. Costs of supplies were paid for by the Coordinator, such as paper, envelopes, and stamps, and, if beneficial to CRI, such as printing patient handouts, incurred by the practice itself. There was little disturbance of the work flow as qualified participants had been identified by the coordinator during the fall of 2008 at routine well patient visits and were seen independent of the coordinator's regular office hours. The time devoted to meeting with the patients was covered by the cost-reimbursement of a 15 minute office visit (99212) in most cases and incorporated into the general assessment, treatment and education components of that visit for the specific co-morbid health problem related to overweight/obesity and counseling.

Service-Utilization

Social marketing was accomplished by communication with patients by mail, on phone or in person. Staff at CRI was informed by email and face to face. I was available by phone for unscheduled events and in person for scheduled patient visits. The population sample had been previously identified as patients of CRI with a BMI $\geq$ 27. They were divided into cohort groups based on their desire for weight loss information. All patients who participated in phase I who qualified for Phase II were asked to participate regardless of their ethnic, religious or cultural background. Intervention was tailored to be sensitive to individual needs, stage of change, age, gender physical and developmental abilities.

Determinant Theory

Factors believed to cause the health problem are: sedentary lifestyle, inappropriate food choices, attitudes toward foods, and cultural or family beliefs about weight. The practice needs assessment, described earlier, identified 63% of qualified Phase I patients desiring information about weight management. This showed a desire for assistance by the patients at CRI for help with weight related issues.

Intervention Theory

Use of the TM stages of change and construct of DB were expected to assist patients with motivation to increase PA. Patients were guided by the coordinator to become empowered and encouraged to remove barriers and develop healthy reasons to change behavior that has kept them from losing weight. According to Issel (2008) this is known as active protection.

Impact Theory

Short term or immediate effects were expected to be a patient awareness of needed behavior changes and a personal decisional balance related to the changes. Intermediate effects were hoped to be adjusting the DB toward an increase in PA. Eventually, the future use of a DB format will be viewed as an effective tool for any lifestyle behavior changes. Patients were hoped to experience more positive reasons for PA and less barriers toward PA.

Outcome Theory

According to the TM stage of change, the DB is weighted toward positive or negative reasons to change a behavior based on the stage. Long term goals for the program at CRI are: that the DB tool will be considered as a method to assist with any behavior change, that open communication about weight loss between patient and provider becomes common, and that assessing the staging of patients with the TM will be utilized when asking patients to change a behavior.

Cost Analysis

The majority of the cost of the project was born by the coordinator. The practice will be reimbursed by a regular office charge for visit code of 99212 for approximately $60.00 per visit. Revenue for the practice will be determined by the length of time spent with the patient, estimated to be 15 minutes. The initial estimate was for 33 control patients in a 15 min visit for a total of 8.25 hrs (33 visits). An estimated count of 33 intervention patients for 15 min visits (x2-3) for 6.5 hours-24.75 hours (66-99 visits) was expected. The patients' insurance was billed according to policy but the co-pay was waived by the practice. The final intervention group patient count was much less than anticipated, ten participated, but this allowed more individual visits per patient, three to four, based on the response from the mailings. The two control patients met with the coordinator once for an office visit. Expenses included: 100% Recycled white copy paper at $9.00 per 500/ream (1), colored copy paper at $10.00 per 500/ream (1), and pre-stamped envelopes (2) x 123 at 5/$2.55 or 500/$226.85. To support a green environment, 100% recycled copy paper was used. Gifts to thank the participants included

America on the Move ™ pedometers, 10 units @$6.25/each = $62.50. All participants received a *Walk at Home*™ DVD, 12 DVDs @ $14.95 with tax and shipping for $167.00. Total expenditure was $ 475.35, cost born by the Coordinator.

Program Evaluation

For a two group prospective cohort design, an impact assessment could be measured (Issel, 2008). Groups, intervention and control, were followed for the two months of the program, the difference between the groups was to determine the effect of the program implementation by evaluating the dependent variables, BMI, IPAQ and URICA. Information was gathered from the URICA pre- and post-intervention to determine if stage of change differed. Data from the pre- and post- IPAQ questionnaire determined whether there had been a change in physical activity. BMI obtained before the program and after the program measured any weight changes.

Sample

The response from mailed invitations to participate was not as anticipated. The actual count included ten participants in the intervention group and two in the control group. The mailings went out later than I had anticipated while waiting for exempt status by the IRB, the meeting date delayed due to a snow day. Two months of data was planned for the intervention so that the time to respond to the invitation was shortened. Some respondents wrote a letter back stating that they did not want to participate at all. One respondent did not return calls to set up a time for office visits though had returned all the requisite paperwork. The ten participants in the intervention group were all Caucasian females between the ages of 43-78

years old. Two Caucasian male participants aged 34 and 67 were in the control group. All participants met the criteria of an initial BMI $\geq$ 27 from the Phase I pilot, however the female in the maintenance stage lost weight between Phase I and Phase II weigh in bringing her BMI below 27 but above 26. One of the participants in the control group happened to be the significant other of a participant in the intervention group. Due to the small number of participants the pilot continued as planned.

Design

Because of the small number of participants, the design was adjusted to be a simple one group pre- and post-test. This has many limitations, the most important, which is that it cannot be ascertained if any outcomes are the result of the intervention, since there is no comparison group. Second, because this is not a random sample those who consented to participate may be more motivated than others to change. Third, a person in the control group that lived with a person in the intervention group was influenced by his partner's desire to change.

Methods/Instruments

Participants were able to use the tools as originally planned. Before the beginning of the program the participants were measured for height and weight and BMI determined. They were mailed a DB paper and IPAQ paper on activity levels to be filled out and brought to the first office visit. The DB, URICA and IPAQ were written by the patient. The visits consisted of verbal interactions using the nurse coaching method. The first meeting consisted of going over the DB objectives that each patient generated and discussed how to meet those goals. Suggestions were made by the coordinator of possible alternatives to the potential barriers or specifics of exercise concerns. At all times the patient directed the focus of the choices by

verbalizing the possibilities. Whenever the patient shared positive successes the coordinator would encourage continued efforts in that direction. If the concern was negative for the patient or the patient was stuck with personal barriers, the coordinator continued to encourage the patient and helped to brainstorm other possibilities. Each visit began with an update of activities since the previous visit, discussion about the pros and cons, readjusting goals, whatever the patient determined was important for that visit. Informational topics included how to fit activity into daily schedules, changing routines to accommodate physical conditions, 'anything is good, more is always better', learning to mix up routines, and not getting into the 'all or nothing mentality'. Handouts were given from the Practical Guide: Identification, Evaluation, and treatment of Overweight and Obesity in Adults (NIH,NHLBI, 2000).

Data Analysis

Data was gathered for weight (BMI), stage of change (URICA), and physical activity (IPAQ) both pre- and post- program. (Figure 10) Original height and weight were obtained Fall 2008 in Phase I, again during beginning of Phase II Spring 2009 and at the end of the program early May 2009. Starting numbers were determined from the Spring 2009 measurements rather than the Fall 2008 qualifying measurements. Qualitative data was obtained for participants reasons for and against (DB) increasing physical activity (Figure 11) at the beginning of the program and also as an anonymous evaluation at the end of the program (Figure 12).

Using SPSS 16.0 Graduate Student Version, descriptive statistics were obtained for those in the intervention group Pre and Post BMI, Pre and Post URICA, Pre and Post IPAQ numerical values, and Pre and Post IPAQ ordinal values as well as the mean values for each (Figure 13). The mean pre-program BMI was 33.94 compared to the post-program BMI of 33.61. URICA

stages of change were assigned numerical values, 1=Prec ontemplation, 2=Contemplation, 3=Action, 4=Maintenance. The pre-program URICA mean was 2.9 and the post-program mean was 3.1. IPAQ was assigned both numerical and an ordinal value of Low=1, Moderate=2, and High=3 values based on the IPAQ scoring evaluation. Pre-program IPAQ mean was 2.3 and post-program mean was 2.6. IPAQ score was improved by six out of ten participants meaning 66% of the participants in the program increased their physical activity levels during the two month period. This surpasses the Healthy People recommendation of 30%.

Qualitative Data

There was a qualitative portion to this program. The individuals participating expressed their personal thoughts, feelings and reasons for changing a lifestyle behavior. The purpose of this section is to illustrate the narrative data collected (Knafl & Howard, 1984). Using a decisional balance guide (undated) assisted the patients in the program to discover those reasons that both encouraged and prevented them from physical activity in their lives. (Figure 11). The most cited reasons to exercise were (with the number expressing these in parentheses): it would be better for their overall health/prevent diseases related to overweight/obesity (9), it would help them to lose weight (4), more flexibility/mobility (3), and more energy/more stamina (3). The reasons not to increase activity were more varied: less time at home/need to make time (to exercise) (3), increased stress (2), and physical pain before exercise (preventing them from increasing activity) (2).

During the program one participant's chronic foot pain resolved by altering her activity regimen and lowering the incline on the treadmill. Some women enjoyed using the pedometer to count their steps and brought in written updates for each meeting. One woman noticed that

her joints were not aching any more and another that she was sleeping better at night. Several women were current or former members of *Weight Watchers* ™. All women verbalized that the program came at the right time for them, that they needed a 'jump start' to get moving and on track again.

Five participants returned an anonymous evaluation form (Figure 12). Four felt they accomplished their goals during the program, one was not sure. One stated she did not lose weight but gained flexibility and relieved pain in her knees. Another stated she is walking a lot more, legs feel better, using hand weights and the DVD. One resolved the ankle pain by changing her exercise routine. All five felt 15 minute meeting were helpful in achieving their goals by increasing support to continue toward goals and one felt support was similar to *Weight Watchers*™. Strengths of the visits were: helpful information, reinforcing activity as a lifetime experience, reviewing goals, getting involved with walking, meeting face to face with the NP, and verbalizing mental barriers (to change). Suggestions for changing the program include more information on food. Most felt that a continuing support group with insurance co-pay would be too costly for them.

Interpretation and Conclusions

Though the Phase I patients were identified because of BMI, the individuals in Phase II chose to participate in the program. From the intervention group two were in contemplation, seven in action and one in maintenance. In the control group one was in pre-contemplation and the other in contemplation. At the end of the program eleven patients had moved or stayed in action and the person in maintenance remained there (Figure 13). Though not all the individuals lost weight or increased their activity the mean group experience was a slight weight

loss and increase in activity levels. Because of the sample size and the issues with group relationships a conclusion about the efficacy of the program cannot be made.

Reviewing the qualitative information tells us a lot about the experience of the program for the participants and the potential for future similar programs. The general consensus was that the program was helpful, being mindful that not all participants prioritized weight loss as a primary goal. Many expressed surprise that pains disappeared and flexibility returned. Many enjoyed the support and personal dynamics of the meetings.

First and foremost it is of utmost importance to determine a patient's readiness to change a lifestyle behavior. A provider cannot make someone change just because it is good for them or the right thing to do. Second, the patient needs to be an active participant and goal director of the change process; coaching skills provide the framework for this type of work. Third, the process should be attainable in a series of brief office visits. Lastly, there should be collegial support in the practice group for this type of work.

Future Directions

Insurance companies would be wise to examine the reimbursement system for prevention and the use of brief individual or group coaching sessions as a cost effective means for combating overweight and obesity and their co morbidities. There needs to be a buy in by primary care providers that this can and will work. Coaching techniques need to be made more available to all providers so that they feel comfortable with the tools of this approach. Education should include coaching techniques in medical as well as nursing schools. More research should focus on the cost effectiveness of brief coaching interventions in primary care for various lifestyle issues.

Plan for Dissemination

A handbook has been developed to be used by primary care providers who would like to assist their patients with physical activity lifestyle changes during typical brief office visits. It is hoped that this project can be shared at seminars and by publication.

Conclusion

A number of chronic illnesses are preventable. Lifestyles and habits are known to contribute to the development of many of them: cigarette smoking, sedentary behaviors, or overeating. The key to success in avoiding these chronic conditions is first, prevention and second, being able to successfully change the unhealthy behavior and maintain that change. Assessing the patient's knowledge about the condition and readiness to change an unhealthy behavior is the first step. Assisting the patient with self-directed goals for change is the next. Allowing the patient to choose personal goals and to determine the motivators and barriers to those goals is a part of that process. Examining how we interact with patients in the office setting may be the next step. Shifting the paradigm from a strict medical model of expert and student to a more collegial exchange between equals (Edelson, 2009) may be the answer.

References

American Nurses Association. (2004). *Scope and standards of practice.* Silver Springs, MD.: ANA.

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavior change. *Psychological Review, 84*, 191-215.

Bardia, A., Holtan, S.G., Slezak, J.M., & Thompson, W.G. (2007). Diagnosis of obesity by primary care physicians and impact on obesity management. *Mayo Clinic Proceedings, 87*(8), 927-932.

Baranowski, T., Cullen, K.W., Nicklas, T., Thompson, D., & Baranowski, J. (2003). Are current health behavioral change models helpful in guiding prevention of weight gain efforts? *Obesity Research, 11 Supplement*, 23S-43S.

Boudreaux, E.D., Wood, K,B., Mehan, D., Scarinci, I., Taylor, C.L.C., & Brantley, P.J. (2003). Congruence of readiness to change, self-efficacy, and decisional balance for physical activity and dietary fat reduction. *American Journal of Health Promotion, 17*(5), 329-336.

Bowerman, S., Bellman, M., Saltzman, P., Garvey, F., Pimstone, K., Skootsky, D., Wang, H-J., Elashoff, R. & Heber, D. (2001). Implementation of a primary care physician network obesity management program. *Obesity Research, 9*(suppl. 4), 321S-325S.

Cancer Prevention Research Center. (undated). [On-line], [2 pag.]. Retrieved August 4, 2008 from the World Wide Web. Available: http://www.uri.edu/research/cpre/TTM/ProcessesOfChange.htm.

Cancer Prevention Research Center. (2004). [On-line], [1 pag.] Measures--Weight: Stages of Change-*URICA-Short Form*. Retrieved October 5, 2008 from the World Wide Web. Available: http://www.uri.edu/research/cprc/Measures/Weight01.htm.

CDC. (undated). *National center for health statistics*. [On-line], [1 pag.] Retrieved September 27, 2008 from the World Wide Web. Available: http://www.cdc.gov/nchs/fastats/overwt.htm.

Decisional Balance Exercise. (Undated). [On-line], [2 pag.] Retrieved September 27, 2008 from the World Wide Web. Available: http://www.nova.edu/gsc/forms/DecisionalBalanceExercise.pdf.

e ClinicalWorks. (undated). [on-line], [1 pag.] Retrieved September 28, 2008 from the World Wide Web. Available: http://www.eclinicalworks.com/.

Edelson, M. (May & June, 2009). *Coaching: New skills for a new tim*e. Educational Seminar. Roxbury, MA.

Foster, G.D., Wadden, T.A., Makris, A.P., Davidson, D., Sanderson, R.S., Allison, D.B., & Kessler, A. (2003). Primary care physicians' attitudes about obesity and its treatment. *Obesity Research, 11*(10), 1168-1177.

Gelber, R.P., Gaziano, J.M., Orav, E. J., Manson, J.E., Buring, J.E., & Kurth, T. (2008). Measures of obesity and cardiovascular risk among men and women. *Journal of the American College of Cardiology, 52*(8), 605-615.

Hall, K.L. & Rossi, J.S. (2008). Meta-analytic examination of the strong and weak principles across 48 health behaviors. *Preventive Medicine, 46*, 266-274.

Hayes, E. & Kalmakis, K.A. (2007). From the sidelines: Coaching as a nurse practitioner strategy for improving health outcomes. *Journal of the American Academy of Nurse Practitioners*, 19, 555-562.

Hayes, E., McCahon, C., Panahi, M.R., Hamre, T., & Pohlman, K. (2008). Alliance not compliance: Coaching strategies to improve type 2 diabetes outcomes. *Journal of the American Academy of Nurse Practitioners, 20*, 155-162.

International Physical Activity Questionnaires. (undated). *IPAQ: Short last 7 days self-administered format (2001)*. Retrieved on December 14, 2008 from the World Wide Web. Available: www.ipaq.ki.se.

Issel, L.M. (2008). *Health Program Planning and Evaluation: A Practical Systematic Approach for Community Health*. Sudbury, MA.: Jones and Bartlett Publishers.

Janis, I. & Mann, L. (1977). *Decision Making*. New York: Free Press.

Jimmy, G. & Martin, B.W. (2005). Implementation and effectiveness of a primary care based

physical activity counseling scheme. *Patient Education and Counseling, 56*, 323-331.

Johnson, S.S., Paiva, A.L., Cummins, C.O., Johnson, J.L., Dyment, S.J. Wright, J.A., Prochaska, J.O., Prochaska, J.M., & Sherman, K. (2008). Transtheoretical Model-based multiple behavior intervention for weight management: Effectiveness on a population basis. *Preventitive Medicine, 46*, 238-246.

Katz, D.L. (2001). Behavior modification in primary care the pressure system model. *Preventive Medicine, 32*, 66-72.

Katz, D.L., Shuval, K., Comerford, B.P., Faridi, Z., Njike, V.Y. (2008). Impact of an education intervention on internal medicine residents' physical activity counseling: The Pressure System Model. *Journal of Evaluation in Clinical Practice, 14*, 294-299.

Kipfer, B.A. (Ed.). (2005). *Roget's 21st century thesaurus in dictionary form*. New York, N.Y.: Bantam Dell.

Knafl, K.A. & Howard, M.J. (1984). Interpreting and reporting qualitative research. *Research in Nursing and Health, 7*, 17-24.

LaBrie, J.W., Pedersen, E.R., Thompson, A.D., & Earleywine, M. (2006). A brief decisional balance intervention increases motivation and behavior regarding condom use in high-risk heterosexual college men. *Archives of Sexual Behavior, 37*, 330-339.

LaViest, T.A. (2005). *Minority populations and health: An introduction to health disparities in the United States.* San Francisco: Jossey-Bass

Lenth, R. (undated). Java applets for power and sample size. RussLenth's Power and Sample-size Page. Retrieved on February 1, 2009 form the World Wide Web. Available; http://www.stat.uiowa.edu/~rlenth/Power/index.html.

Medical News Today. (2/18/08). [On-line], [1 pag.] *Obesity screening measures highlight additions to HEDIS 2009*. Retrieved September 10, 2008 from the World Wide Web. Available: http://www.medicalnewstoday.com/articles/97697.php.

Miller, W.R. & Rollnick, S. (2002). *Motivational interviewing: Preparing people for change* (2nd ed.). New York: Guilford Press.

National Institutes of Health, National Heart, Lung, and Blood Institutes. North American Association for the Study of Obesity. (2000). *The practical guide: Identification, evaluation, and treatment of overweight and obesity in adults*. [NIH Publication No. 00-4084].

Pinto, B.M., Lynn, H., Marcus, B.H., DePue, J., & Goldstein, M.G. (2001). Physician-based activity counseling: Intervention effects on mediators of motivational readiness for physical activity. *Annals of Behavioral Medicine*, 1-10.

Potter, M.B., Vu, J.D., & Croughan-Minihane, M. (2001). Weight management: What patients want from their primary care physicians. *Journal of Family Practice, 50*(6), 513-518.

Prochaska, J. (1994). Strong and weak principles for progressing from precontemplation to action on the basis of twelve problem behaviors. *Health Psychology, 12*(1), 47-51.

Prochaska, J.O., Norcross, J.C., & DiClemente, C.C. (1994). *Changing for good: A revolutionary six-stage program for overcoming bad habits and moving your life positively forward.* New York, N.Y.: Harper-Collins.

Prochaska, J.O., Velicier, W.F., Rossi, J.S., Goldstein, M.G., Marcus, B.H., Rakowski, W., Fiore, C., Harlow, L.L., Redding, C.A., Rosenbloom, D., & Rossi, S.R. (1994). Stages of change and decisional balance for 12 problem behaviors. *Health Psychology,13*(1),39-46.

Redding, C.A., Rossi, J.S, Rossi, S.R., Velicer, W.F., Prochaska, J.O. (2000). Health behavior models. *The International Electronic Journal of Health Education, 3*, 180-193.

Sarkin, J.A., Johnson, S.S., Prochaska, J.O. & Prochaska, J.M. (2001). Applying the Transtheoreretical Model to regular moderate exercise in an overweight population: Validation of a stages of change measure. *Preventive Medicine, 33*, 462-469.

Tao, H. & Glazer, G. (2005). [On-line], [4 pag.] Legislative: Obesity: From a health issue to a political and policy issue. *Online Journal of Issues in Nursing.* Retrieved September 8,

2008 from the World Wide Web. Available: http://nursingworld.org/MainMenueCategories/ANAMarketplace?ANAPeriodicals/OJI.

U.S. Census Bureau (2006). *State & county quick facts*. [On-line], [1 pag.] Retrieved on December 3, 2008 from the World Wide Web. Available: http://quickfacts.census.gov/gfld/states/25/25011.html.

U.S. Department of Health and Human Service. (2002). *Healthy People 2010* (2nd ed.). McLean, VA.: International Medical Publishing, Inc.

Wee, C.C., Davis, R.B. & Phillips, R.S. (2004). Stage of readiness to control weight and adopt weight control behaviors in primary care. Journal of *General Internal Medicine, 20*, 410-415.

Whittemore, R., Chase, S., Mandle, C.L., & Roy, C. (2001). The content, integrity, and efficacy of a nurse coaching intervention in type 2 diabetes. *The Diabetes Educator, 27*(6), 887-898.

Whittemore, R., Melkus, G, Sullivan, A., & Grey, M. (2004). A nurse-coaching intervention for women with type 2 diabetes. *The Diabetes Educator, 30*(5), 795-804.

Velicer, W.F., DiClemente, C.C., Prochaska, J.O., & Brandenburg, N. (1985). A decisonal balance measure for prediction smoking cessation. *Journal of Personality and Social Psychology, 48*, 1279-1289.

Velicer, W.F., Prochaska, J.O., Fava, J.L., Norman, G.J., & Redding, C.A. (1998). Applications of the transtheoretical model of behavior change. *Homeostasis, 38*, 216-233.

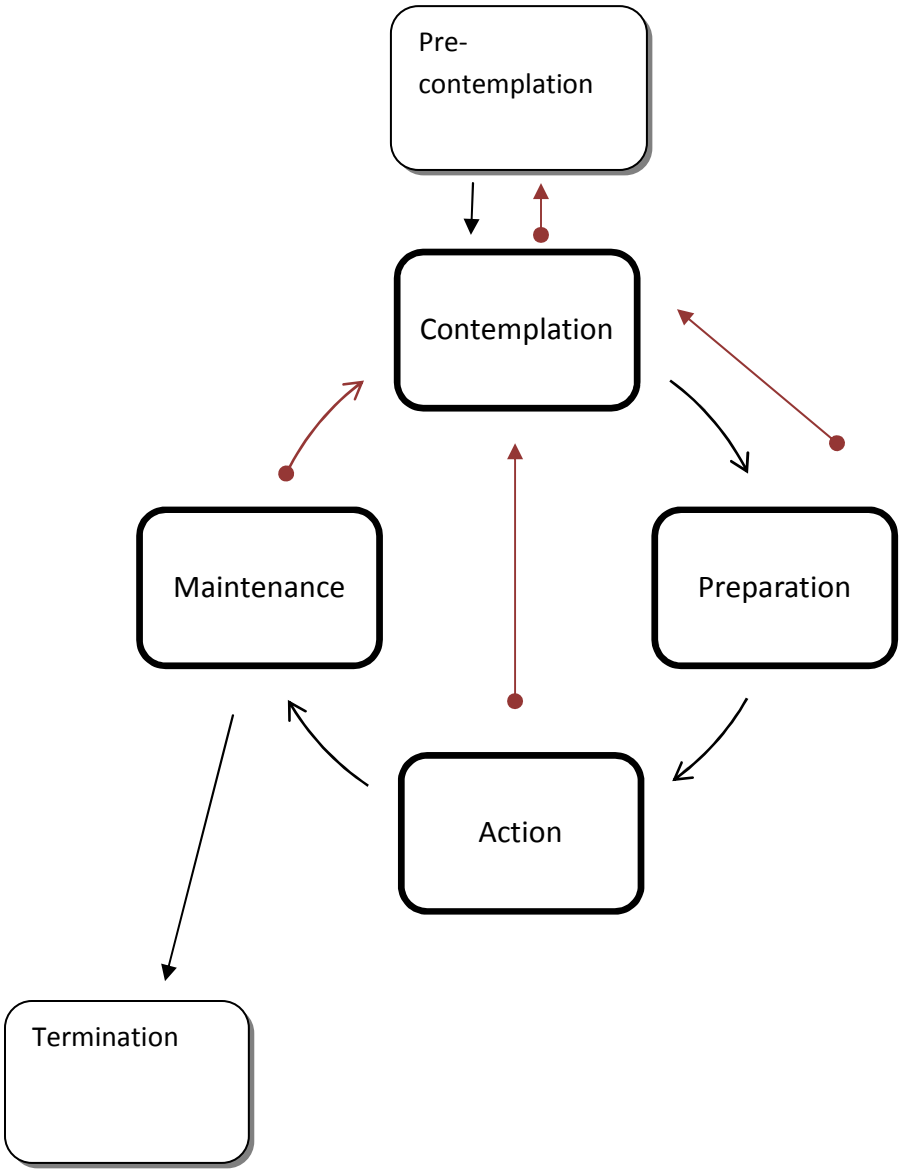
Author Note

Capstone committee at the University of Massachusetts, Amherst: Chair, Jean DeMartinis PhD., my friend and tireless cheerleader of our DNP cohort, Eileen Hayes PhD, my dear friend and mentor, Marilyn Edelson LICSW, MCC, my coaching preceptor and new friend.

I wish to acknowledge special people in my life: to my wonderful husband and love, Phil Day, for his never ending support and editing over the past three years; to my Mom and Dad who have seen me through my life to this point and instilled In me that all things are possible. The special people in my life have sustained me during the stressful times, my wonderful daughters, Kim and Amy, and their husbands Kevin and Jeremy, and especially Maggie, Ryan, Lauren and Nick who are the sparkling diamonds in my life.

Correspondence can be directed to the author at janp919@charter.net.

TRANSTHEORETICAL MODEL



Normal progression of Stages of Change

Relapse potential for Stages of Change

Figure 1. Progression of the Stages of Change in the Transtheoretical Model.

THINKING ABOUT CHANGING

The most important reason I want to change is:

_____

_____

_____

_____

_____

_____

If someone gave you five million dollars to change the behavior you are thinking about changing for just one day, would you change, and why?

_____

_____

_____

_____

_____

_____

_____

_____

GSC.06.LCS

EXERCISE 1: DECISIONAL BALANCE

THIS PAMPHLET WILL HELP YOU

- **Think** about the **costs and benefits** of changing and **what is involved** in your **decision to change**
- **The behavior I am thinking of changing is:**

_____

WEIGHING DECISIONS

When people weigh decisions, they look at the **costs and benefits** of the choices they can make. **Remember that having mixed feelings often occurs when making decisions.**

DECISIONAL BALANCING

Many people change on their own. When they are asked what brought about the change, they often say they just **"thought about it," meaning they evaluated the consequences of their current behavior and of changing before making a final decision.**

You can do the same thing with the costs of changing on one side, and the benefits of changing on the other side. This exercise will help you look at the good things and less good things about changing.

Figure2- 1

To change, the scale needs to tip so the costs outweigh the benefits. This is called Decisional Balancing. Weighing the pros and cons of changing happens all the time. For example, when changing jobs or deciding to move or get married.

THINKING ABOUT CHANGING?

Ask yourself: **What do I stand to lose and gain by continuing my current behavior?** At some point, you may have received real benefits from the behavior you want to change, such as relaxation, fun or stress reduction. However, because you are reading this, you considering both the benefits and the costs.

DECISION TO CHANGE EXERCISE

One thing that helps people when thinking of changing is to list the benefits and costs of changing or continuing their current behavior. Below is an example of a Decision to Change Exercise.

EXAMPLE: DECISION TO CHANGE EXERCISE

	Changing	Not Changing
Benefits of	• *Increased control over my life* • *Support from family and friends* • *Decreased job problems* • *Improved health & finances*	• *More relaxed* • *More fun at parties* • *Don't have to think about my problems*
Costs of	• *Increased stress/anxiety* • *Feel more depressed* • *Increased boredom* • *Sleeping problems*	• *Disapproval from friends/family* • *Money problems* • *Damage close relationships* • *Increased health risks*

DECISION TO CHANGE EXERCISE: IT'S YOUR TURN

Fill in the costs and benefits of changing and compare them, and ask yourself **are the costs worth it?**

	Changing	Not Changing
Benefits of		
Costs of		

IT'S YOUR DECISION

The next page asks you to list the most important reasons why you want to change. **You are the one who must decide what it will take to tip the scale in favor of change.**

⇨

Figure2- 2

Cover Letter for Individuals Not Wanting Weight Loss Information

Dear ,

I am writing to you because you expressed a desire **not** to receive weight loss information at Connecticut River Internists (CRI) this fall. You may already know me as a nurse practitioner at CRI. I am currently a student in a Doctor of Nursing Practice (DNP) program at the University of Massachusetts, Amherst. I am working on a final project involving examination of the pros and cons of exercise in a primary care practice with individuals who are considered to be overweight by national guidelines. It will take place between February to May 2009. I am particularly interested in looking at the positive and negative reasons why individuals do or do not exercise. I also want to help people to get beyond the reasons not to exercise or encourage them to maintain their current exercise level.

I need individuals for a comparison group and hope you would consider participating. This would involve meeting with me at CRI once sometime during the end of April 2009-beginning of May 2009. There will be no co-pay charged. I can meet with you anytime on Wednesdays or later in the afternoon if you are at work. I will make individual arrangements as needed. At that time I would like to record your height and weight, have you fill out a questionnaire of four questions related to weight loss behavior (URICA) and a four question form on exercise (IPAQ, same as the one that is enclosed). It should take 10-15 minutes at the most. Your assistance will help me validate my project. The data (except height and weight and consent form which will go in your chart) are kept anonymous. If you decide to participate please call the number below and schedule a visit with me for the last two weeks of April, as described above, tell them it is for Jan's school project and that there is no co-pay. I will not be able to address any other **acute** medical issues during the visit, except brief **chronic** issues as they might be related to weight and exercise.

If you wish to participate please fill out the two consent forms (keep one for yourself) and the exercise questionnaire (IPAQ). Return one consent form and the exercise questionnaire in the stamped enclosed envelope by March 1st please. If you have any questions you can reach me at CRI at 774-5554, leave a message and I will get back to you.

Enclosed: Two consent forms

Exercise questionnaire (IPAQ)

Stamped return envelope

Thank you in advance, I greatly appreciate your consideration for participation.

Jan Peterson FNP, DNP candidate

Figure 3: Cover Letter for Patients Not Wanting Information (Control Group)

IPAQ: SHORT LAST 7 DAYS SELF-ADMINISTERED

International Physical Activity Questionnaire

I am interested in finding out about the kinds of physical activities that people do as part of their everyday lives. This is a part of a project that I am doing at Connecticut River Internists. The questions are about the time you spend being physically active in the last 7 days. They include questions about activities you do at work, as part of your house and yard work, to get from place to place and in your spare time for recreation, exercise or sport. Your answers are important.

Please answer each question even if you do not consider yourself to be an active person.

THANK YOU FOR PARTICIPATING.

In answering the following questions:

Vigorous physical activities refer to activities that hake hard physical effort and make you breathe much harder than normal.

Moderate activities refer to activities that take moderate physical effort and make you breathe somewhat harder than normal.

Think only about those physical activities that you did for at least 10 minutes at a time.

1a. During the last 7 days, on how many days did you do **vigorous** physical activities like heavy lifting, digging, aerobics, or fast bicycling? _____days per week

1b. How much time in total did you usually spend on one of those days doing vigorous physical activity?

_____hours_____minutes

2a. . During the last 7 days, on how many days did you do **moderate** physical activities like carrying light loads, bicycling at a regular pace, or doubles tennis? Do not include walking. _____days per week

2b. How much time in total did you usually spend on one of those days doing moderate physical activities?

_____hours_____minutes

3a. During the last 7 days, on how many days did you walk for at least 10 minuted at a time? This includes walking at work and at home, walking to travel from place to place and any other walking that you did solely for recreation, sport, exercise or leisure? _____days per week

3b. How much time in total did you usually spend walking on one of those days?

_____hours_____minutes

4. During the last 7 days, how much time did you usually spend sitting on a week day?

_____hours_____minutes

This is the end of the questionnaire, thank you for participating.

Figure 4: IPAQ 7 Day Physical Activity Short-form, Self-administered

URICA (SHORT FORM)

You have received this questionnaire because you agreed to participate in a research translation project with Jan Peterson FNP. Please take a few moments to answer these questions and return it to Jan Peterson.

1. In the past month, have you been actively trying to lose weight?

Yes No

2. In the past month, have you been actively trying to keep from gaining weight?

Yes No

3. Are you seriously considering trying to lose weight to reach your goal in the next 6 months?

Yes No

4. Have you maintained your desired weight for more than 6 months?

Yes No

Thank you.

Name_____DOB_____Date:_____

****
****

BMI_____

Scoring:	**Q1**		**Q2**	**Q3**	**Q4**
Precontemplation:	N		N	N	X
Contemplation:	N		N	Y	X
Action:	Y	**OR**	Y	X	N
Maintenance:	Y	**OR**	Y	X	Y

Figure 5: URICA Short-form for Weight Management

Cover Letter for Individuals Wanting Weight Loss Information

Dear ,

I am writing to you because you **expressed a desire** to receive weight loss information at Connecticut River Internists (CRI) this fall. You may already know me as a nurse practitioner at CRI. I am currently a student in a Doctor of Nursing Practice (DNP) program at the University of Massachusetts, Amherst. I am working on a final project involving exercise in a primary care practice with individuals who are considered to be overweight by national guidelines. It will take place during February to May 2009. I am particularly interested in looking at the positive and negative reasons why individuals do or do not exercise. I also want to help people to get beyond the reasons not to exercise or encourage them to maintain their current exercise level.

I need individuals for an intervention group and hope you would consider participating. This would involve meeting with me at CRI once or twice between February and May 1st and once sometime during the end of April 2009-beginning of May 2009. There will be no co-pay charged. I can meet with you anytime on Wednesdays or later in the afternoon of other days by special arrangement with me. At that time I would like to look at the decisional balance paper I included with this letter. I will make individual arrangements as needed. At the final visit I would like to record your height and weight, have you fill out a questionnaire of four questions related to weight loss behaviors (URICA) and a four question form on exercise (IPAQ, same as the one that is enclosed). It should take 10-15 minutes at the most for the visits. Your assistance will help me with my project. The data (except height and weight and consent form which will go in your chart) are kept anonymous. I will not be able to address other **acute** medical issues during these visits, except for **chronic** issues as they might be related to weight and exercise.

If you wish to participate please fill out the two consent forms (keep one for yourself), the exercise questionnaire(IPAQ) and the decisional balance. Return one consent form, decisional balance tool and the exercise questionnaire in the stamped enclosed envelope by March 1st please. If you have any questions you can reach me at CRI at 774-5554, leave a message for me and I will get back to you. I f you choose to participate call the above number and schedule a visit beginning March 1st (make sure to mail your consent materials back) tell them it is for Jan's school project and there is no co-pay.

Enclosed: Two consent forms

Exercise questionnaire (IPAQ)

Decisional balance tool

Stamped return envelope

Thank you in advance, I greatly appreciate your consideration for participation.

Jan Peterson FNP, DNPcandidate

Figure 6: Cover Letter for Patients Wanting Weight Loss Information (Intervention Group)

TIMELINE: TIPPING THE DECISIONAL BALANCE SCALE AT CRI SPRING 2009

Date	Responsible Person	Activity	Complete
10/08	*Coordinator*	Discover Health Problem at CRI, using information from Phase I to develop Phase II	12/16/08
12/08	*Coordinator*	Develop IRB materials, URICA, IPAQ, Decisional Balance tools, write project project proposal and IRB proposal, submit project proposal	2/09
1/8/09	*Coordinator*	Meet with physician partners of CRI to explain program proposal and gain buy in	1/8/09
1/14/09	*Coordinator*	Submit IRB proposal and await results	2/09
1/09	*Coordinator*	Research on TM, DB, coaching, develop letters, tools, photocopy, address envelopes	5/09
2/19/09	Coordinator	Photocopy mailings, send out invitations to participate in program	2/20/09
2/20/09	Coordinator	Communication with Dr David Katz of Yale and research about his model of brief visits	2/09
2/09	Coordinator	Schedule patient appointments 15 min visit q 2 wks for each participant	5/09
2/24/09	Coordinator	Meeting with Dr Brenda Tembladoor at BMC about their outpatient weight management program and prn	5/09
3/1/09	Coordinator	Meet with patients: Decisional Balance, Ht & Wt prn, URICA, IPAQ	5/5/09

Figure 7-1: Project Timeline

Date	Responsible Person	Activity	Complete
2/09	Coordinator	Contact with mentors Dr Eileen Hayes and Marilyn Edelson LICSW, Ontrack Coaching ongoing, communication with Dr Robin Whittemore of Yale nursing school	6/09
3/4/09	Coordinator and Participants	First day of visits with patients in program	Target end 5/8/09
5/5/09	Coordinator	Collect data, collate, data analysis, meet with statistician, Eva Goldwater School PH UMass	5/13/09
5/8/09	Coordinator	Formal end of Phase II program , meeting with participants	5/8/09
5/09	Coordinator	Phase I- II Capstone finished	6/09

Figure 7-2: Project Timeline

Work Flow Sheet

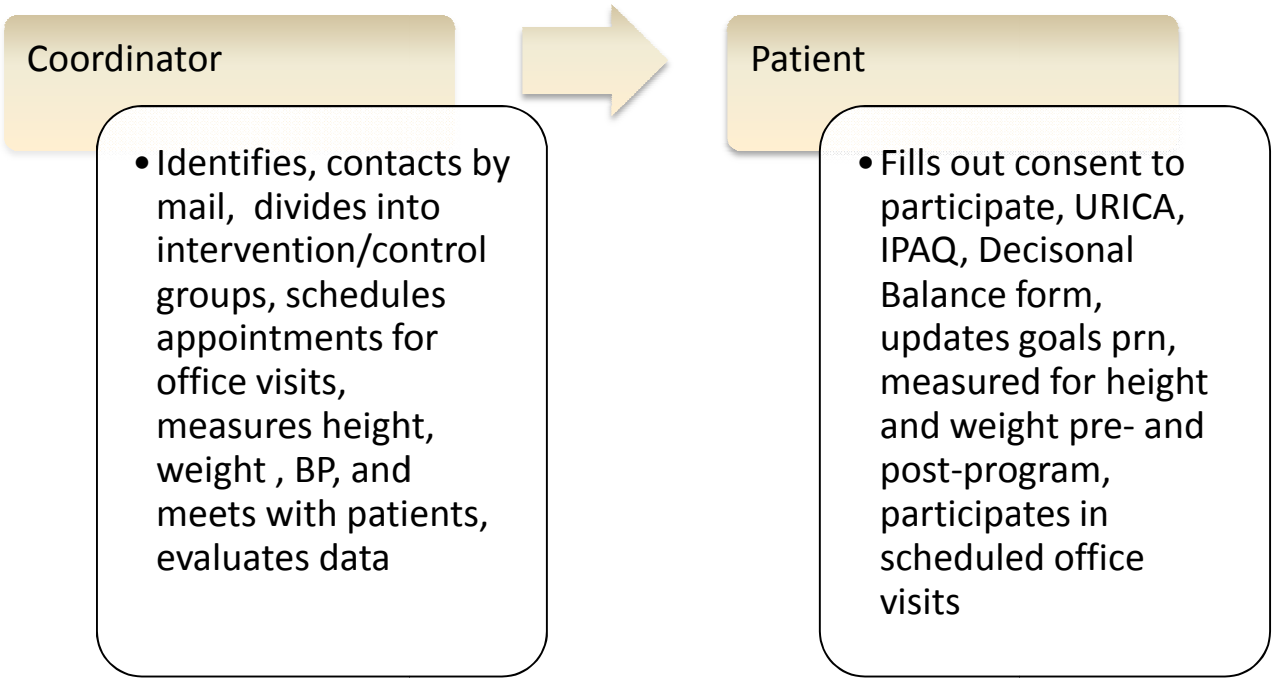


Figure 8: Work Flow

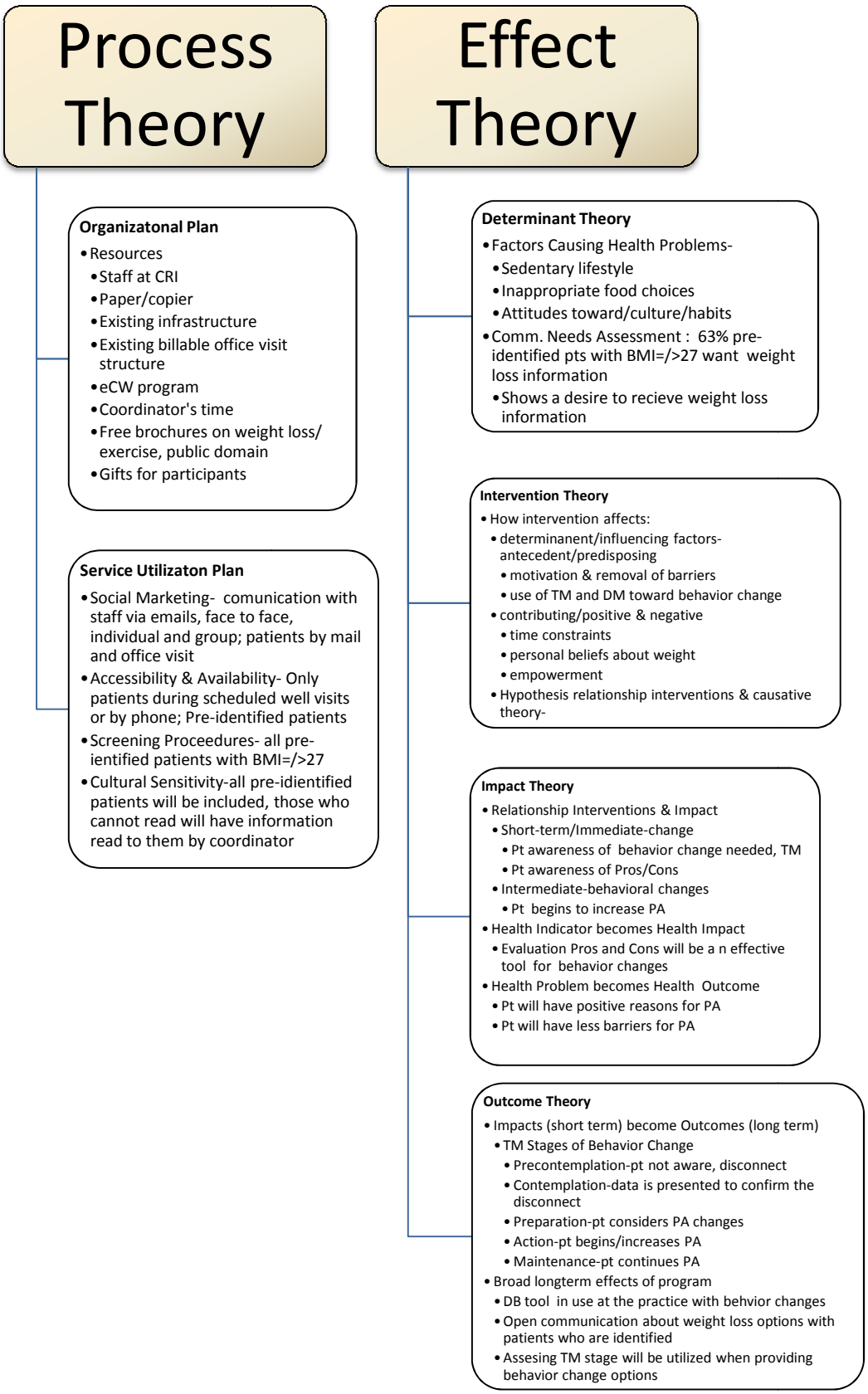


Figure 9 : Program Theory

YES	**Pre-**			**METMIN/WK**	**Post-**	**BMI**		**SOC**		**IPAQ**
Name/# visits	*Help/Age*	*BMIF08/S09*	*SOC*	*IPAQ*	*BMI*	*Change*	*SOC*	*Change*	*IPAQ*	*Change*
17y DS/4	Y/51	27.49/28.16	A	708.5/M	27.87	-0.29	A	0	14916/H	+14207.5
22y JM/4	Y/76	46.28/46.47	A	198/L	46.28	-0.19	A	0	2546/M	+2348
31y LRR/4	Y/49	29.99/32.54	A	2925/H	30.18	-0.36	A	0	3954/H	+1029
35y JP/4	Y/61	27.36/26.29	M	17325/H	26.49	+0.2	M	0	10692/H	-6633
41y KS/4	Y/43	27.55/28.35	A	796/M	26.67	-1.68	A	0	15759/H	+14963
44y CD/4	Y/61	32.19/32.78	C	388/L	31.94	-0.84	A	+	2575/M	+2187
50y DE/4	Y/65	33.82/32.31	C	1017/M	33.53	+0.92	A	+	7299/H	+62.82
51y LP/4	Y/78	38.6/37.94	A	4851/H	37.52	-0.42	A	0	2835/M	-2016
55y MB/3	Y/58	32.86/32.28	A	124638/H	31.73	-0.5	A	0	10685/H	-113953
59y SW/4	Y/43	42.93/42.26	A	3159/H	43.84	+1.58	A	0	2253/M	-906
TOTAL INTERVENTION	**10**									
NO	**Pre-**			**METMIN/WK**	**Post-**	**BMI**		**SOC**		**IPAQ**
Name/# visits	*Help/Age*	*BMIF08/S09*	*SOC*	*IPAQ*	*BMI*	*Change*	*SOC*	*Change*	*IPAQ*	*Change*
21n GS/1	N/34	30.0/30.86	C	5198/H	28.62	-2.24	A	+	25620/H	+20422
32n LR/1	N/67	29.9/30.56	P	160/L	31.32	+ 0.76	A	+	982/M	+822
TOTAL CONTROL	**2**									

BMI = Basal Metabolic Index

METMIN/WK = Metabolic minutes/week

SOC = Transtheoretical Model Stage of Change

P = Precontemplation

C = Contemplation

A = Action

M = Maintenance

IPAQ = International Physical Activity Questionnaire

H = High physical activity

M= Moderate physical activity

L = Low physical activity

Figure 10 : Participants, Pre- and Post- BMI, SOC, and IPAQ

Tipping the Decisional Balance Scale: Participant's Reasons

PROS	CONS
Better for overall health/prevent disease related to obesity-9 Better mental health/lose stress-2 Lose weight-4 Smaller clothes-3 Feel better about appearance-2 Perceived better by others-1 Making more time for myself-1 More flexible/mobility-3 More energy/more stamina-3 Better quality of life-2 Less boredom-1 Better sleep-2 Cost savings: sleep apnea equipment, medications-1	Less time at home/make time to exercise-3 Increased stress 2 More time with family-1 More time for myself-1 Sweating-1 Physical pain before exercise-2 Injury because of weakness-1 Need to increase level of exercise-l Not as much immediate gratification in the form of a cheeseburger, fries & shake/ Can eat what I want-2 Keep on exercise schedule-1 Learning new routine-1 (Cost) Purchase exercise equipment-1 (cost) New wardrobe eventually-1 Changing for more than 1 day is hard-1 Cost of membership-1 Perceived worse by others1 Overweight-1 No worries-1 Depression-1

Figure 11: Qualitative topics by participant's, reasons for and against increasing physical activity

April 2009 Capstone: Tipping the Decisional Balance Scale Evaluation

Thank you for participating in my program that focused on brief encounters with a provider in a primary care office to assist patients to use their personal pros and cons for making a lifestyle behavior change. This is a voluntary form that will help guide me in the evaluation of the project.

1. Looking at the original goals with motivators and barriers that you had set for yourself, do you feel that you accomplished them?

Yes No Not sure

Comments:

2. Were the brief 15 minute meetings helpful in achieving your goals?

Yes No Not sure

Comments:

3. What do you feel were the strengths of the meetings? The weaknesses of the meetings?

4. Are there any changes or suggestions you would make to make the program better for you?

5. If you were able to continue with this type of support for a lifestyle change of your choosing at Connecticut River Internists would you be interested? Would you consider an after work support group of people with different goals? Would you be willing to do a copay according to your insurance plan?

Thank you again for your participation. I enjoyed your enthusiasm and wish the best for you in pursuit of your personal goals. Remember…Don't give up! Jan Peterson

Figure 12: Optional, anonymous program evaluation

Statistics for Program Group

		PREBMI	POSTBMI	PRESOC	POSTSOC	PREIPAQ#	POSTIPAQ#	PREIPAQL	POSTIPAQL
N	Valid	10	10	10	10	10	10	10	10
	Missing	0	0	0	0	0	0	0	0
	Mean	33.9380	33.6050	2.90	3.10	15600.5500	7351.40	2.30	2.60
	Median	32.4250	31.8350	3.00	3.00	1971.0000	5626.50	2.50	3.00
	Std. Deviation	6.44740	6.91512	.568	.316	38651.49386	5312.730	.823	.516
	Skewness	.923	.939	-.091	3.162	3.065	.572	-.687	-.484
	Std. Error of Skewness	.687	.687	.687	.687	.687	.687	.687	.687
	Minimum	26.29	26.49	2	3	198.00	2253	1	2
	Maximum	46.47	46.28	4	4	124638.00	15759	3	3

PREBMI Pre-program BMI

POSTBMI=Post-program BMI

PRESOC=Pre-programn stage of change (1=Prec ontemplation, 2=Contemplation, 3=Action, 4=Maintenance)

POSTSOC=Post-programn stage of change (1=Prec ontemplation, 2=Contemplation, 3=Action, 4=Maintenance)

PREIPAQ#=Pre-programn IPAQ numerical value

POSTIPAQ#=Post-program IPAQ numerical value

PREIPAQL=Pre-program IPAQ letter value (1=Low, 2=Moderate, 3=High)

POSTIPAQL=Post-intervention IPAQ letter value (1=Low, 2=Moderate, 3=High)

Figure 13: Descriptive Statistics for Program Group