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## CHAPTER FOUR

### **VITALITY AND VIGOR: IMPLICATIONS FOR HEALTHY FUNCTIONING** PP. 65-86



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*“Vitality shows in not only the ability to persist but the ability to start over.”*  
*F. Scott Fitzgerald (1896 – 1940)*

Typically psychological research has tended to focus on negative moods, their effects on behavior and interpersonal relationships, and their precursors. So for example, from the study of depression we know that the behavior of a depressed person may be characterized by inactivity, passivity, withdrawal, apathy, and little affect. In contrast, this chapter deals with vitality, vigor, psychosocial factors, and their implications for health. In their introductory article to a *Special Issue on Happiness, Excellence and Optimal Human*

*Functioning* in the premier issue of the *American Psychologist* in the new millennium, Seligman and Csikszentmihalyi (2000) discuss the importance of positive individual traits and positive institutions for improving quality of life and preventing pathology. While it is generally taken for granted that well-being is characterized by positive moods and traits, little research has investigated the precursors of such feelings as well as their implications for behavior and interpersonal relationships. Increasingly, research suggests that positive emotional states are not simply opposite to negative ones, but they have unique precursors and consequences worthy of research study. We are beginning to see some research on questions relating to positive psychology in sport psychology, as for example, in research by Stoll and Lau (2005) on flow experiences and marathon running. In this regard they discuss engagement, flow experiences when challenges are high, the fit between demands and abilities, and their effects on flow. Activity theory also emphasizes the link between activity and well-being, specifically, life satisfaction (Lemon et al., 1972). Research shows that activity level predicts functional and cognitive status as well as physical health. Rowe and Kahn (1997) consider active engagement, combined with absence of disease and good physical and cognitive function, an integral part of successful aging.

#### **VITALITY**

A related concept is *vitality* which represents a positive emotional state. It is important as a marker of optimal human functioning and it is linked to good physical health and reflects experiences of volition, effectance and integration of the self. It is similar to the Chinese concept of *Chi* which represents a vital force that is the source of life, creativity and harmony. A comparable concept in Japan is *Ki* which refers to the energy and power one has available to draw on and is related to mental, physical and spiritual health. Ryan and Frederick (1997) introduced the concept of vitality, drawing on self determination theory and developed a measure of subjective vitality, defined as a positive feeling of aliveness and having energy available to the self. Vitality may be seen as reflecting a person's being fully functioning and self realized. Vitality is diminished when social contacts engender feelings of ineffectance, disconnection or being controlled. Penninx et al. (2000) focused on psychological factors in their construct of *emotional vitality* which they define as having a high sense of personal mastery, being happy, having low depressive symptomatology and low anxiety. Greater vitality has been associated with fewer chronic physical conditions (Lerner, Levine, Malspeis, & D'Agostino, 1994), fewer symptoms reported by those with HIV (Wu et al., 1991), and fewer sore throats and painful nodes in those with Chronic Fatigue Syndrome (Buchwald et al., 1996). Subjective feelings of well-being, one of the hallmarks of health, are characterized by a positive mood, feeling

energetic and efficacious, and perceiving obstacles as challenges that can be overcome.

On the basis of these theoretical considerations, it is suggested here that vitality may be expressed in at least three ways: As positive affect, as vigor and, as moving forward with life (see Figure 3-1).

### Positive Affect

An analysis of several studies on affect conducted over the years has consistently indicated two bipolar dimensions: positive affect and negative affect (Watson & Tellegen, 1988). Descriptive hallmarks of positive moods include active, elated, enthusiastic, excited, peppy, and strong. Low positive moods can be described by drowsy, dull, sleepy, and sluggish. In line with Watson and others, positive affect may be seen as a measure of the degree to which individuals subjectively feel enthusiastic, active, and alert. An individual with high scores on a positive affect measure is in a state of high energy, full concentration, and pleasurable engagement. Research has shown that positive affect facilitates approach behavior (Davidson, 1993) and continued action (Carver and Scheier, 1990). Because positive emotions include a component of positive affect, they function as well as internal signals to approach or continue to move ahead. From this perspective, experiences of positive affect prompt individuals to engage with their environment and partake in activities, many of which are adaptive for the individual. Viewed in this way, one may argue that the incentive dimension of positive affect has survival value for the individual. Free-floating positive moods motivate people to continue along any line of thinking or action that they have initiated (Clore, 1994).

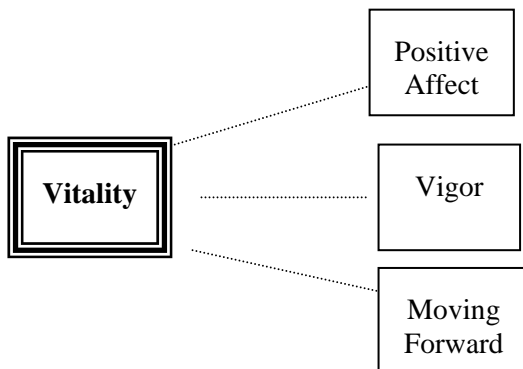


Figure 3-1. Concept of Vitality.

## **Vigor**

A person with a high degree of vigor is lively, active, energetic, cheerful, alert, and full of pep. Vigor is characterized by high levels of energy, mental resilience, stamina, and persistence when problems arise. The POMS (The Profile of Mood States) consists of a subscale of interest here labeled *vigor-activity* consisting of adjectives such as, lively, active, energetic, cheerful, alert, full of pep, carefree and vigorous (McNair, Lorr, & Droppleman, 1971). The POMS is factor analytically derived and all of its six factors have been reliably identified, measured and replicated in many different populations. The concept of vigor has also been studied in the employment context as part of the work engagement construct. According to Schaufeli et al. (2002), work engagement is the opposite of burnout. An engaged worker is dedicated, absorbed and experiences high levels of vigor, all of which is expressed in persistent behavior in meeting work challenges. In this context, vigor has been described as consisting of high levels of energy, mental resilience, a willingness to invest effort in one's work, stamina, and persistence when problems arise (Schaufeli et al., 2002). Thus, vigor refers to a concept that is both affective and motivational; it is oriented towards the future, and is characterized by high levels of energy. Research has shown that increases in vigor predict life satisfaction in college students (Pilcher, 1998).

## **Moving Forward.**

Vitality may also be expressed in intentions to move forward with life. One such concept is *Getting on with Life* that refers to feelings about engaging in activities and social relationships that give people day-to-day pleasure and even joy, a concept we have developed in individuals undergoing physical rehabilitation (Greenglass, Marques, deRidder, & Behl, 2005). A central concept here is efficacy expectations, including outcome expectancies, defined as knowledge of skills needed for goal attainment, and self-efficacy expectancies, beliefs that one can execute actions needed to achieve a goal (Bandura, 1977).

## **Factors Affecting Vitality**

What are the factors affecting vitality? Research indicates that vitality is diminished when social contacts engender feelings of disconnection, not being effective, or being controlled (Ryan, & Deci, 2000). Thus, vitality should *increase* with provision of social support resources that convey feelings of belonging, increased feelings of efficacy, and self-esteem. Theoretically, since social support often involves provision of information, practical advice, help, and morale boosting, it would follow that individuals would report more vitality with more social support because of the confidence it engenders and greater beliefs in one's own efficacy. Research in various areas shows that relatedness to others, or social support, can affect vitality levels. For example,

in research with nursing home residents, those who had a greater number of different social contacts had higher levels of vitality (Kasser and Ryan, 1999). A related observation is that participation in social activities promotes greater feelings of well-being, which is characterized by relatively higher levels of vitality. In addition, several field studies, including prospective ones, have linked relatedness to increased vitality (Reis et al., 2000).

Further research indicates that the way individuals cope with stress may also be an important factor contributing to their vitality. The dominant conceptual model in research that is focused on coping effectiveness is manifest in demonstrating a reduction of distress. However, coping may have other functions. For example, proactive coping is conceptualized more broadly as an approach to life in which an individual's efforts are directed towards goal management where demands are seen more as challenges rather than stressors (Greenglass, Schwarzer, & Taubert, 1999). To the extent that individuals offset, eliminate, reduce or modify 'stressful events', proactive coping can improve one's quality of life. The *Proactive Coping Inventory* (PCI) was constructed to assess different dimensions of a proactive approach to coping with six subscales including proactive coping, preventive coping, reflective coping, strategic planning, instrumental support seeking, and emotional support seeking, as well as an avoidance coping subscale (Greenglass, et al., 1999).

In the present chapter, the focus will be on one of the PCI subscales, namely the Proactive Coping scale, a 14-item measure that combines autonomous goal setting with self-regulatory goal attainment cognitions and behavior. By using proactive coping, the individual strives actively for improvement in one's life instead of mainly reacting to an adversity. Proactive coping integrates motivational and intentional factors with volitional maintenance processes. Previous research reports moderately positive correlations between scores on the Proactive Coping subscale and self-efficacy, thus suggesting that self-regulation is one of the dimensions of proactive coping. Additional data show that Proactive Coping scale scores are significantly and positively associated with scores on external scales assessing active coping in Canadian and Polish-Canadian samples. Moderate to high correlations (from .42 to .62) have been obtained between proactive coping scores and those on active coping, preventive coping and internal control, a measure of the extent to which the individual takes the initiative in coping efforts (Greenglass et al., 1999). Additional research shows that proactive coping is associated with less burnout and greater perceived challenge in German teachers (Schwarzer & Taubert, 2002).

## **A THEORETICAL MODEL LINKING SOCIAL SUPPORT, COPING AND VITALITY**

A theoretical model was developed that links social support, coping, vitality, and positive and negative outcomes (see Figure 3-2). Theoretical considerations suggest that social support contributes directly to proactive coping (Greenglass, 2002; Schwarzer & Taubert, 2002). These ideas parallel Hobfoll et al. (1994) who discuss the dynamic relationship between coping and social support acquisition. This approach acknowledges the importance of others' resources that can be incorporated into the behavioral and cognitive coping repertoire of the individual. In the same way, Buchwald (2003) discusses the importance of widening the 'stress and coping' concept by including interpersonal resources. Resources from one's network, such as information, practical assistance and emotional support, can contribute positively to the construction of individual coping strategies (Greenglass, 1993). Additionally, proactive coping should lead to greater levels of vitality. In approaching obstacles as challenges rather than stresses, one can identify high levels of vitality that usually accompanies these kinds of efforts. Higher levels of vitality are seen as leading to lower levels of negative outcomes and higher levels of positive ones. The idea that vitality can lead to lower levels of negative outcomes is not new. The basic hypothesis that positive emotions are incompatible with negative emotions has been demonstrated in earlier work on anxiety disorders (e.g., systematic desensitization, Wolpe, 1958), motivation (e.g., opponent-process theory, Solomon & Corbit, 1974) and aggression (e.g., principle of incompatible responses, Baron, 1976).

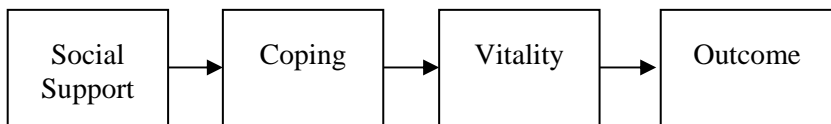


Figure 3-2. Theoretical Model Linking Social Support, Coping, Vitality and Outcomes.

This theoretical model will be applied to different contexts where the constructs of positive affect, vigor and moving forward will be implemented.

### **APPLICATION OF POSITIVE AFFECT TO THE OCCUPATIONAL SPHERE**

First, the function of positive affect will be systematically examined in an occupational sphere and in particular, in relation to employee absenteeism. Considerable research has focused on determinants and outcomes of absenteeism. At the same time, absenteeism can result in significant

productivity losses and administrative expenses (Martocchio, 1992). Absenteeism has been variously discussed as providing coping opportunities outside work, allocating time to activities that compete with scheduled work, and providing stress-relief, for example (Martocchio, & Jimeno, 2003; Bachler, 1995). Absenteeism has also been defined as withdrawal behavior and had been found to be negatively associated with performance and productivity (Pelled & Xin, 1999). In recent years, researchers have linked mood to organizational variables and findings show that two dimensions of affect (positive affect and negative affect) display independent patterns of relationships with other variables, including absenteeism (George, 1989; Watson, 1988;). High positive affect reflects the extent to which a person feels enthusiastic, a zest for life, active and alert, having high energy, full concentration and pleasurable engagement. In contrast, low positive affect is characterized by sadness, lethargy, and unpleasant emotional states. Beginning with George (1989), several researchers have assessed how these moods were related to absenteeism in both cross sectional and longitudinal studies that report that positive affect was significantly and negatively associated with absenteeism (e.g., Pelled & Xin, 1999). As a person's positive affect at work decreases, that individual's tendency to escape work will increase, thus leading to an increase in absenteeism. Pleasurable emotional states, as in higher positive affect, should discourage escape behavior associated with absenteeism.

A study is reported here in which the theoretical model put forth in Figure 3-2 is applied to an organizational setting where it is used to predict absenteeism in a sample of employed individuals. In this study, perceived organizational support (POS) is seen as leading to higher levels of proactive coping. And, higher levels of proactive coping should be associated with greater positive affect. Positive affect should lead directly to lower absenteeism. Respondents in the study were 703 Canadian employed individuals who submitted a confidential and anonymous Internet survey. Affect was measured using the PANAS (Watson et al., 1988 ), a 20-item scale, with 10 items that assessed positive affect and 10 measuring negative affect. In this study, findings with only the positive affect scale are reported ( $\alpha = .89$ ). Sample items measuring positive affect are "interested" and "excited". For each item, respondents were asked to evaluate how much of that feeling they have on their job on a 5-point scale that increased with greater reported positive affect.

Proactive coping was assessed using the Proactive Coping subscale of the *Proactive Coping Inventory* (PCI; Greenglass et al., 1999) consisting of 14 items ( $\alpha = .83$ ). Examples of the items: "I am a 'take charge' person" and "I turn obstacles into positive experiences." The response choices for this scale are: (1) not at all true, (2) barely true, (3) somewhat true, and (4) completely

true. Research has shown significant correlations between proactive coping scores, active coping, and internal control (positive), and between proactive coping scores, denial and self-blame (negative) in Canadian university students (Greenglass, 2002). Pasikowski et al. (2002) report that proactive coping correlates negatively with depression and positively with self-reported health in Polish college students. Findings indicate that proactive coping is significantly associated with lower burnout and higher professional efficacy in an employed Canadian sample (Greenglass, 2005). Further data show that proactive coping correlates negatively with daily hassles, health hassles, depression, functional disability, and somatization in an elderly sample (Fiksenbaum, Eaton, & Greenglass, 2006; Greenglass, Fiksenbaum, & Eaton, 2006).

Perceived organizational support was measured by an eight-item scale (Rhoades et al., 2001) in which respondents indicated the extent of their agreement with each item. An example of an item from this scale is, “My organization really cares about my well-being.” The frequency with which respondents were absent from their work was measured by a two-item measure designed by Greenglass and Burke (2000). An example of an item is, “How many days of scheduled work have you missed in the past month?” ( $\alpha = .90$ ).

Structural equation modeling was used to test the model presented in Figure 3-3 and the relationships between perceived organizational support, proactive coping, positive affect and absenteeism. AMOS version 4.0 (Arbuckle & Wothke, 1999) was used to provide path coefficients and tests of the overall goodness of fit of the model. The maximum likelihood method of parameter estimation was utilized. The chi square goodness of fit statistic ( $\chi^2(3)=106.705, p<.001$ ) indicated that the model did not provide a good fit to the data. Other indices provided by AMOS also did not show a good fit. The goodness of fit index, the adjusted goodness of fit index, the comparative fit index, and the root mean square error of approximation were, respectively .934, .780, .664, and .222.

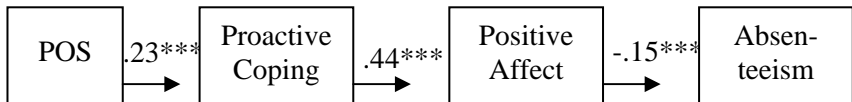


Figure 3-3. Structural Model Relating Perceived Organizational Support (POS), Proactive Coping, Positive Affect and Absenteeism.

Note. \*\*\* p < .001

One post-hoc modification was indicated and that was a path from organizational support to positive affect. Results of the revised structural equation modeling shown in Figure 3-4 indicate that the model was a better fit to the data. The chi square goodness of fit statistic ( $\chi^2(2)=2.380, P=.304$ ) indicated that the revised model provided a good fit to the data. Other indices provided by AMOS showed a good fit. The goodness of fit index, the adjusted goodness of fit index, the comparative fit index, and the root mean square error of approximation were, respectively 998, .992, 999. and .016, indicating that the revised model was a good fit to the data. Organizational support led to greater proactive coping and proactive coping led to increased positive affect. Higher levels of positive affect led to lower absenteeism. In addition, organizational support led to greater positive affect. Present findings are consistent with those reported in a study of nurses employed in hospitals undergoing hospital restructuring where perceived organizational support was a significant buffer of nurses' perceived job insecurity on cynicism (Greenglass & Burke, 1999). To the extent that nurses felt valued and important to their hospital (affective support), even though they might have been insecure about the future of their jobs, they were less likely to become cynical or disengaged from their job. Taken together, the data suggest that perceived organizational support can be a significant influence on worker mood and can significantly improve their morale. Present findings suggest as well that proactive coping mediated the effects of organizational support on positive affect, and that positive affect mediated the effects of proactive coping on absenteeism.

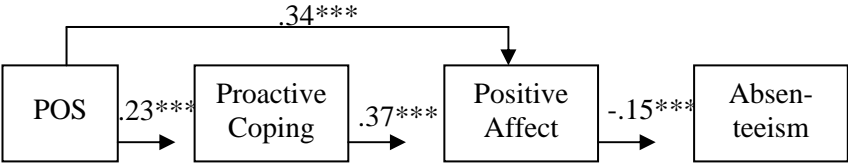


Figure 3-4. Revised Structural Model Relating Organizational Support, Proactive Coping, Positive Affect and Absenteeism.

Note. \*\*\* p < .001

These results parallel findings reported in a longitudinal study by Pelled and Xin (1999) who found that positive affect reduced absenteeism in 129 electronics firm employees. George (1989) reported parallel results in 210 salespeople; positive affect was significantly and negatively associated with

absenteeism. Taken together, the data suggest that pleasurable emotional states, particularly positive affect, discourage escape behavior associated with absenteeism.

### **APPLICATION OF VIGOR TO THE PHYSICAL REHABILITATION SPHERE**

As indicated earlier, vitality may also be expressed in feelings of vigor. Vigor is a concept that has been discussed as both affective and motivational in that it is characterized by high levels of energy and is oriented towards the future. A person with a high degree of vigor is lively, active, cheerful, and full of pep (McNair et al., 1971). Vigor also implies high levels of energy, stamina and persistence when problems arise.

Research suggests that positive moods, including vigor, function to increase resilience and functional ability in individuals recovering from physical illness. For example, positive mood has been reported to be related to less disability in participants with rheumatoid arthritis (Zautra & Manne, 1992). Related findings were reported by Blanchard et al. (2002) that increases in efficacy expectations resulted in higher levels of positive mood and better functional ability in participants in a cardiac rehabilitation program. Research shows that vigor is associated with improvement in physical and mental health. For example, in one study (Lorr et al., 1964), participants receiving psychotherapy over a four-week period showed a trend in improvement in vigor, as measured by one of the POMS subscales (Shacham, 1983). Vigor scale scores had significant and negative correlations with measures of depression, anxiety and somatization. In another study that examined the association of walking for exercise and mood in sedentary, ethnic minority women, participants reported significant decreases in depressive mood and increases in vigor with walking. Additional findings were that increase in walking over the course of the study was associated with changes in vigor (Lee et al., 2001). Additional data, this time with a sample of self-described sedentary women, showed that increased self-efficacy, goal setting, relapse prevention, and social support were directly related to perceived vigor (Nies & Kershaw, 2002). Thus, to the extent that rehabilitation patients experience high levels of vigor, they are expected to show greater independence functioning in a rehabilitation setting.

The motivational function of vigor was tested in a study reported here that examined the relationship between social support, proactive coping, vigor and independence functioning in physical rehabilitation hospital patients. According to Csikszentmihalyi (1990), individuals who perceive life's misfortunes as challenges come to regard their experience as "enriching". Thus, those who do not despair and work hard at their rehabilitation may be more successful at meeting their goals and, as a result, may be psychologically healthier. Coping plays an essential role in this process. Lazarus and Folkman (1984) have defined coping as changing cognitive and behavioral efforts to

manage psychological stress. Since physical rehabilitation poses a significant challenge, the way individuals cope during rehabilitation can have significant implications for this process. Considerable research has revealed the importance of coping strategies in rehabilitation (e.g., Carver et al., 1993; Jeavons et al., 2000). For example, Buckelew, Baumstark, Frank and Hewett (1990) report that persons with spinal cord injury and who are highly distressed, used more emotional coping, self-blame and threat minimization than did groups defined as having low or moderate levels of distress. And, in a sample of people with spinal cord injury, Kennedy et al. (2000) found that coping, assessed at hospital discharge, predicted depression and anxiety 6 months later. In other research, passive coping predicted higher levels of disability (reported some months later) in people with osteoarthritis of the knee (Steultjens, Dekker, & Bijlsma, 2001).

As indicated in the theoretical model above, social support and proactive coping should be correlated. Greater proactive coping is expected to lead to higher levels of vigor. And, with more vigor, independence functioning is expected to increase. A study is reported here in which the model is applied to rehabilitation hospital in-patients all of whom had experienced a motor vehicle accident (MVAs). One of the primary goals of rehabilitation is to assist patients in regaining physical functions, including walking, and to facilitate living independently or living with minimal assistance. There were 45 patients in the study, one-half of whom were women. Average age was 45.1 years and average stay in hospital was 65.7 days. The procedure involved administering a questionnaire to participants at some time during their hospital stay (time 1) and assessing their independence functioning on the day prior to their hospital discharge (time 2). Average number of days between times 1 and 2 was 40. Prospective participants were identified by asking hospital staff to indicate the newly admitted patients who were MVAs. Patients were approached after the second day of hospital admission and they were asked if they would like to participate in the study. In the first phase of the study, participants completed an anonymous, self-report questionnaire that assessed social support, proactive coping and vigor. At time 2, patients were assessed by trained hospital personnel on a standard outcome measure of independence functioning, the Functional Independence Measure (FIM) (CIHI, 1999). Results of a Canadian pilot study with a sample of patients from several rehabilitation settings across Canada indicated that the FIM has high reliability and validity (CIHI, 1999). The FIM was administered to the patients at time 2 by hospital personnel. At this time, participants' behaviors in four categories were evaluated on a rating scale from 1, total assistance to 7, complete independence. The categories are self-care, transfers, locomotion and social cognition. Self-care consists of behavior in the following areas: eating, grooming, bathing, dressing (average of dressing the upper and lower body), and toileting. Transfers from bed, chair, wheelchair, toilet and

tub/shower were also assessed. Locomotion assessments were based on ratings using a wheelchair (if relevant), ambulation and stairs. Assessments of social cognition are based on social interaction, problem solving, and memory. Average ratings were obtained in each of these four areas. A single score of independence functioning was obtained by computing the mean of these four scores for each participant.

Psychological measures were based on composite self report items. Vigor was assessed using the Vigor\_Activity subscale of the shortened version of the Profile of Mood States (Shacham, 1983). Substantial research evidence supports the conclusion that scores from the POMS vigor scale provide reliable and valid measures of energy mood states (O'Connor, 2004). This shortened measure is a modified version of the POMS developed by McNair et al. (1971) and is a self-report measure in which the participants rate the way they have been feeling over the preceding week. It consists of 37 adjectives that are divided into six mood states: Tension-Anxiety, Depression-Dejection, Anger-Hostility, Vigor-Activity, Fatigue-Inertia, Confusion-Bewilderment (Shacham, 1983). A study using a sample of cancer patients found the scales to have good internal consistency, as well convergent and discriminant validity (Baker et al., 2002). The Vigor\_Activity scale consists of six items such as feeling lively, active, energetic. The rating scale ranges from zero (“not at all”) to four (“extremely”). The scale had acceptable reliability ( $\alpha = .89$ ). Social support consisted of the average amount of reported information and practical support received as measured in 6 items ( $\alpha = .85$ ). A sample item is, “How much do people go out of their way to make things easier for you?” Proactive coping was assessed using the Proactive Coping subscale of the *Proactive Coping Inventory* (PCI; Greenglass et al., 1999) consisting of 14 items ( $\alpha = .79$ ).

According to proactive theory, social support contributes positively to proactive coping (Greenglass, 2002). In a rehabilitation context, proactive coping is seen as mediating the effects of social support on vigor. Preliminary analyses indicated that in a rehabilitation setting, the effects of social support on behavioral outcomes were mediated by proactive coping. Use of proactive coping is seen as associated with higher levels of self-regulation which should lead to a positive view of oneself and increased feelings of vigor. Greater vigor at time 1 should lead to a higher level of independence functioning at time 2. Structural equation modeling was used to test this model and the relationships between social support, proactive coping, vigor, and independence functioning (see Figure 3-5).

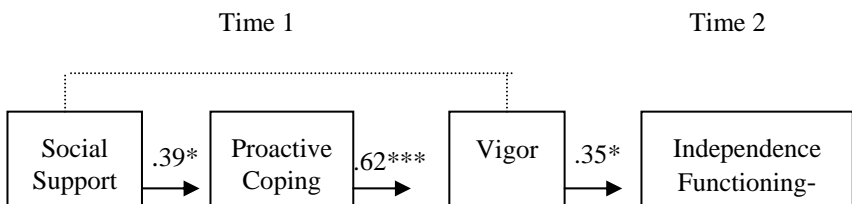


Figure 3-5. Structural Model Relating Proactive Coping, Social Support, Vigor and Independence Functioning in MVA patients.

*Note.* \*\*\*  $p < .001$ , \*  $p < .05$

AMOS version 4.0 (Arbuckle & Wothke, 1999) was used to provide path coefficients and tests of the overall goodness of fit of the model. The maximum likelihood method of parameter estimation was utilized. The chi square goodness of fit statistic ( $\chi^2(3) = 2.970$   $p = .396$ ) indicated that the model provided a good fit to the data. Other indices provided by AMOS also showed a good fit. The goodness of fit index, the adjusted goodness of fit index, the comparative fit index, and the root mean square error of approximation were, respectively .962, .874, 1.000, and .00. No post-hoc modifications were indicated. Thus, the results of the structural equation modeling showed that the above model was a good fit to the data. Social support had a direct effect on proactive coping. Proactive coping had a direct effect on vigor-activity. Vigor-activity had a direct effect on independence behavior, approximately 40 days later. Social support had an indirect effect on independence behavior through proactive coping and vigor-activity.

A similar theoretical model was developed and tested, this time with a sample of 228 joint arthroplasty patients at the same hospital as above, where 60% had a hip replacement and 40% had knee replacement surgery. Average age was 67 years, 71% were female and hospital stay was, on average, 21 days. In this sample, time 1 measures were the same self-report psychological variables as in the MVA sample and consisted of social support, proactive coping and vigor. However, at time 2, an average 14 days later, the behavioral measure was The Two minute Walk (2MW), a standardized measure of distance walked in two minutes that is considered a measure of endurance (Cooper, 1968).

Theoretically, it was expected that higher levels of vigor at time 1 should lead to greater distance walked at time 2. This hypothesis is based on research indicating that vigor correlates positively with health improvement and with self-efficacy, and negatively with distress (Nies & Kershaw, 2002; Lorr et al., 1964). Thus, higher vigor at time 1 is seen as predicting to walking farther, as measured by the 2MW, at time 2, since vigor measures self-reported energy and the 2MW measures endurance. It was also expected that proactive coping would mediate the effects of social support on vigor, as in the previous model

with MVAs. Structural equation modeling was used to examine the relationship between social support, proactive coping, vigor-activity, and the 2MW. AMOS version 4.0 (Arbuckle & Wothke, 1999) was used to provide path coefficients and tests of the overall goodness of fit of the model. The maximum likelihood method of parameter estimation was utilized. The chi square goodness of fit statistic ( $\chi^2(3) = 3.350, p = .341$ ) indicated that the model provided a good fit to the data. Other indices provided by AMOS also showed a good fit. The goodness of fit index, the adjusted goodness of fit index, the comparative fit index, and the root mean square error of approximation were, respectively, .989, .965, .989, and .027. No post-hoc modifications were indicated. Thus, the results of the structural equation modeling showed that the above model was a good fit to the data. To summarize, self-reported vigor leads directly to better performance on behavioral measures, in this case, on the two minute walk, approximately 14 days later. Vigor mediates the effects of proactive coping on walking behavior. Proactive coping mediates the effects of social support on vigor. Social support had an indirect effect on walking through proactive coping and vigor-activity (see Figure 3-6).

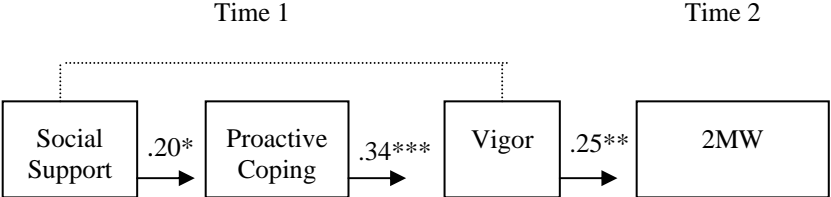


Figure 3-6. Structural Model Relating Proactive Coping, Social Support, Vigor, and Two Minute Walk (2MW) in Joint Arthroplasty Patients.  
*Note.* \*\*\*  $p < .001$ , \*\*  $p < .01$ , \*  $p < .05$

These results are in line with others that report that patients with a more positive mood also demonstrated less disability (Zautra & Manne, 1992). At the same time, the data suggest that vigor does not develop in a vacuum but rather is associated positively with social support and coping strategies that are proactive. Thus, contrary to assumptions held in an earlier era that vigor is a temperament or constitutional trait which is relatively fixed, these data suggest that vigor can be modified by individual resource variables.

## **APPLICATION OF THE CONCEPT OF “MOVING FORWARD” TO THE PHYSICAL REHABILITATION SPHERE**

Vitality may also be expressed as “moving forward”. One such concept is getting on with life that refers to feelings about engaging in activities and social relationships that give people day-to-day pleasure and even joy, a concept we have developed for individuals undergoing physical rehabilitation (Greenglass et al., 2005). A theoretical basis for this construct may be found in self-efficacy theory (Bandura, 1977) that states that cognitive processes may mediate behavioral change. A central concept here is efficacy expectations, including outcome expectancies, defined as knowledge of skills needed for goal attainment, and self-efficacy expectancies, beliefs that one can execute actions needed to achieve a goal. Thus, outcome expectancy would refer to the belief that getting on with life would not be difficult if one has the skills to do so, and self-efficacy expectancy would refer to the person’s perceived probability that he or she could get on with life. Applying these theoretical considerations to the concept of Getting on with Life, there would be three dimensions in the concept of getting on with life: Perceived difficulty, probability and motivation in getting on with life (Greenglass et al., 2005). The *Getting on with Life Scale* was constructed by creating items that assessed each of these dimensions.

We developed a theoretical model in which social support, assessed here as the number of individuals who offer assistance, should lead to greater proactive coping, and the greater the proactive coping score, the greater the belief in getting on with life. This should lead to self-reports of less functional disability. This model was tested in a sample of 295 physical rehabilitation hospital in-patients; 90 had knee replacements; 135 had hip replacements; 45 had motor vehicle accidents, and 25 had experienced severe burns or falls. Two thirds were women. Average age was 62 and average stay in hospital was 29 days.

As in the studies described above, proactive coping was assessed using the 14-item Proactive Coping subscale of the *Proactive Coping Inventory* (PCI; Greenglass et al., 1999) ( $\alpha = .79$ ). The *Getting on with Life scale* consists of 13 items to assess participants’ perceptions about getting on with their lives ( $\alpha = .79$ ). The measure is based on participants’ perceived motivation, difficulty and probability that they would get on with life. The items asked participants to indicate their level of agreement with each statement on a 7-point scale ranging from 1 (strongly disagree) to 7 (strongly agree). Sample items are, “With regard to getting on with my life, I am looking forward to it (perceived motivation)”, “It’s going to be difficult for me” (perceived difficulty), and “It is highly likely” (perceived probability). A total score was obtained by computing the mean response to the 13 items (see Greenglass et al., 2005 for the items in the *Getting on with Life Scale*). Social support was assessed by

the self-reported number of support providers. The item was, “Indicate those individuals who offer you assistance, including practical help, advice and/or encouragement by circling the number (s) next to the person(s) listed below”. The list included spouse, partner, relatives, friends, neighbors, and paid help. Functional disability was assessed using an adapted version of Krause’s (1998) *Functional Disability Scale* with 9 items ( $\alpha = .79$ ) that assessed how much difficulty the respondents experienced with everyday activities such as dressing, washing, shopping and using the telephone. A sample item is, “How much difficulty do you have dressing yourself?”

The theoretical model specified that social support should lead to proactive coping and that getting on with life (GOWL) should mediate the effects of proactive coping on self-reported functional disability. Structural equation modeling was used to explore the relationship between social support, proactive coping, getting on with life and functional disability. AMOS version 4.0 (Arbuckle & Wothke, 1999) was used to provide path coefficients and tests of the overall goodness of fit of the model. The maximum likelihood method of parameter estimation was utilized. The chi square goodness of fit statistic ( $\chi^2(3) = 2.723, p = .436$ ) indicated that the model provided a good fit to the data. Other indices provided by AMOS also showed a good fit. The goodness of fit index, the adjusted goodness of fit index, the comparative fit index, and the root mean square error of approximation were, respectively .995, .985, 1.000, and .000. No post-hoc modifications were indicated. The results of the structural equation modeling showed that the above model was a good fit to the data. Thus, the more participants wanted to get on with life, the lower their self-reported functional disability. Further, proactive coping was indirectly related to functional disability. Specifically, perceptions related to Getting on with Life mediated the relationship between proactive coping and functional disability. Thus, the more proactive coping was employed, the greater the perception of wanting to get on with life and the lower the functional disability. As in the previous studies, social support predicted positively to proactive coping (see Figure 3-7).

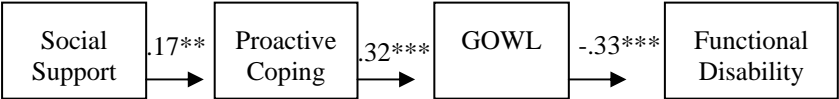


Figure 3-7. Structural Model Relating Proactive Coping, Social Support, Getting on with Life (GOWL) and Functional Disability in Rehabilitation Patients. *Note.* \*\*\*  $p < .001$ , \*\*  $p < .01$

Putting these results together, the following interpretations are offered: First, it is suggested that the belief that an individual will get on with life (as in a rehabilitation setting) results in a selective perception of one's abilities. Rather than focusing on behaviors that *detract* from goal attainment, individuals focus on their behaviors and abilities that will *facilitate* goal attainment. Moreover, believing that you will get on with your life should be associated with hope, optimism, and enthusiasm, all of which are incompatible with negative emotions such as depression, pessimism, cynicism and hopelessness. While the former emotions are associated with goal-directed behavior, the latter ones are usually linked with avoidance, escape and passivity. It is further suggested here that the 'thought-action' repertoire associated with the belief that one *can* get on with life may inhibit more negative emotions and behaviors. Even so, the precise mechanism responsible for this incompatibility has not been identified. The *broadening function* of positive emotions may play a role. By broadening a person's momentary thought-action repertoire, a positive emotion may loosen the hold that a negative emotion has gained on that person's mind and body by dismantling or "undoing" preparation for specific action. As suggested by Fredrickson (2001), people might improve their psychological well-being and physical health by cultivating experiences of positive emotions at opportune moments to counteract negative emotions. Parallel ideas have been expressed by Folkman (1997) who has suggested that the experience of positive affect during times of chronic stress help people cope better.

## **SUMMARY**

In this chapter, a theoretical model was put forth that linked social support, proactive coping, various measures of vitality and several outcome variables from the occupational stress sphere and the rehabilitation field. The data presented here indicate that vitality may be modified through coping behavior and the provision of social support. Further findings here showed that proactive coping and social support are integrally related. According to the model, vitality mediates the effects of proactive coping on outcomes and social support contributes directly to proactive coping. Empirically, the model predicted absenteeism using positive affect as a measure of vitality with one addition— social support also led directly to positive affect. In an organizational setting, social support contributes directly to a positive mood, thus underlining the importance of support from the organization for maintaining high morale among employees. The theoretical model was used to predict various outcomes in a physical rehabilitation setting. With vigor as a measure of vitality, the model predicted to independence functioning in motor vehicle accident survivors. It also predicted to walking behavior in joint arthroplasty patients. Further findings showed that 'getting on with life' mediated the effects of proactive coping on functional disability. The data

indicate the importance of individual resources such as social support and coping in predicting to measures of vitality including those that reflect affect, intention and motivation to get on with life. Future research could be directed towards determination of the psychological processes and means by which positive emotions translate into adaptive behavior, increased well-being and healthier functioning.

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