

# Psychophysiological processes of stress in chronic physical illness: a theoretical perspective

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Accepted for publication 12 June 1989

KLINE LEIDY N OZBOLT J G & SWAIN M A P (1990) *Journal of Advanced Nursing* 15, 478-486

## Psychophysiological processes of stress in chronic physical illness: a theoretical perspective

This paper proposes a theoretical framework and conceptual model for clinicians and investigators working with people who have a chronic physical illness. The framework is based upon nursing theory and classical propositions from psychology and physiology. The major premise of the model is that individuals with limited psychosocial attributes and a preponderance of unmet basic needs are more likely to perceive events as threatening and experience a maladaptive stress response, such as heightened symptoms and acute exacerbations of their illness. Conversely, those with strong attributes and a perception of need satisfaction are more likely to view events as challenging, thus avoiding symptomatic discomfort and enhancing personal growth. Implications for nursing practice and research are addressed.

## INTRODUCTION

A satisfying quality of life with feelings of well-being and opportunities for personal growth is a fundamental desire of all human beings. Nurses are in a unique position to assist those with a chronic physical illness to higher levels of quality of life through purposeful interventions designed to minimize symptoms, reduce the frequency and intensity of acute exacerbations, and enhance psychosocial well-being. The purpose of this paper is to propose a theoretical framework and conceptual model for nursing practice

and research which describes the psychophysiological processes of stress that lead to personal growth or to acute exacerbations in people with a chronic physical illness.

The foundation upon which this framework is built is the Erickson *et al* (1983) nursing theory of modelling and role-modelling. Briefly, this nursing theory represents a synthesis of concepts from classical theories of stress adaptation (Cannon 1929, Engel 1968, Schmale 1972, Selye 1946), humanistic psychology (Maslow 1943, 1968), psychosocial and cognitive development (Erikson 1963, Piaget & Inhelder 1969), object relations (Freud 1953-1974, Kernberg 1976), and attachment and loss (Bowlby 1973, 1980, 1982), among others. Modelling in this theory,

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consists of the application of theoretical knowledge to client-specific information, including resources and limitations, in order to understand how the client views the world. Role-modelling is the artful implementation of nursing interventions that are acceptable within the client's view of the world and lead to greater health (Erickson *et al* 1983).

This paper suggests that understanding the client's capacity for stress adaptation and intervening appropriately are central to effective nursing, that is, to nursing that promotes holistic health. The paper will briefly review earlier theories of stress adaptation, describe how these are integrated in the modelling and role-modelling framework, and propose a revision of and an extension to the modelling and role-modelling theory that would seem to account more fully for observed phenomena, specifically with regard to persons with a chronic physical illness. The paper will conclude with a presentation of the conceptual model and suggestions for further research.

## STRESS ADAPTATION AS A CENTRAL CONCERN OF NURSING

The purposes of nursing are to help clients restore, maintain or enhance their health and assist them in fulfilling their potential throughout life. Some clients are sufficiently robust that they can achieve these goals with little more than skilled assistance from the nurse during occasional bouts of illness. In Maslow's (1943, 1968, 1970) terms, as incorporated into the theory of modelling and role-modelling (Erickson *et al* 1983), these persons perceive that their basic needs are met and experience a predominance of growth motivation, characterized by an attitude of challenge and a desire for self-actualization.

Other clients, however, are more fragile. Perceiving that their basic needs are not met, they experience a predominance of deficiency motivation. Dissatisfied with the state of affairs and uncomfortable with feelings of threat, anxiety and tension, deficiency-motivated individuals utilize personal resources in an effort to gratify prevailing needs. The strong desire for safety and security that accompanies the perception of threat can interfere with personal growth as the individual, afraid to take chances or to jeopardize any aspect of his uncertain situation, seeks to regain or maintain a familiar, safe environment rather than accept the challenge of new life experiences (Maslow 1968). These persons risk being overwhelmed by the circumstances that contributed to the illness, by the additional situations that arise from the illness and treatment and by circumstances external to the physical health problem itself.

It is crucial that nurses understand and predict the adaptive capacities of their clients, and that they knowledgeably

and deliberately select those interventions that will increase the adaptive capacities of those at risk for being overwhelmed. Only in this way can nurses provide appropriate, individualized care that leads effectively and economically to the goal of optimal, holistic health.

## Stress as a physiologic phenomenon

According to Selye (1976), stress is the non-specifically induced biological response of the body to any demand. Thus, while the evocative agents may differ, the stress response itself, called the General Adaptation Syndrome (GAS), is manifested by a characteristic pattern of systemic biological change. It is useful to think of this syndrome metaphorically, as a purposeful, coordinated effort among interdependent biological systems to defend the body against potential disease (Selye 1950, 1976). The ongoing GAS involves a three-phase process of adaptation and resistance consisting of an initial and acute alarm reaction followed by a stage of resistance and concluding in a stage of exhaustion. Under this model, stressor characteristics do not play a predominant role in determining the nature of the stress response and the subsequent health outcome. In fact, due to the influence of internal conditioning factors, what might generally be called 'a normally well-tolerated degree of stress' (Selye 1975) can become pathogenic, or distressing, for individuals with selectively vulnerable body systems. Hence, while the GAS is comprised of commonly experienced systemic characteristics which occur regardless of cause, unique individual sensitivities influence the intensity and progression of the GAS, as well as the location and extent of the more specific changes which may occur upon exposure to a stressor (Selye 1976, 1980).

Selye's theory of stress adaptation provides the foundation for several axioms that are central to the framework proposed in this paper. First, chronic disease, defined in terms of the stress response, is a consequence of the interaction between a stressor, the individual's internal conditioning factors, and external conditioning influences. Under this proposition, organ-specific and systemic changes take place in response to ongoing environmental and/or hereditary stressors. Signs and symptoms of illness are expressions of the body's attempt to *adapt* to the ongoing stressors. Second, individuals with a long-term illness are vulnerable to the effects of additional similar or dissimilar stressors. These stressors can lead to a superimposed acute stress response which strains the already precarious organ system and may result in symptomatic discomfort and/or an acute exacerbation of the illness.

Finally, unrelenting chronic stress and/or repeated exposure to acute stress experiences in situations involving

a pre-existing long-term illness will diminish the individual's capacity for adaptation, resulting in distress with the associated organ system deterioration, progressive exhaustion and death (Kline Leidy, 1989) According to this scenario, a *stressor* becomes a *distressor* (and *stress* evolves into *distress*) as the individual's capacity to mobilize adaptation resources is exceeded (Enckson *et al* 1983)

It is important to recognize that the focus of Selye's work was primarily the impact of biophysical stressors and distressors on the body His research did not elaborate upon the nature of psychological stress, the role of cognition and appraisal in the onset or progression of the stress response or the affective concomitancies of the GAS

### Stress as a psychobiologic phenomenon

An individual's intellectual and emotional responses to potentially stressful external and internal experiences are based upon an underlying cognitive and affective structure which Engel (1971a) called a 'map or plan of the environment represented in the central nervous system' According to this conceptualization, information is evaluated within the context of the person's pre-existing conscious and unconscious knowledge, experiences, perceived capabilities and feelings, that is, within what Erickson *et al* (1983) subsequently called the person's 'model of the world' Hence, it is the person's model of the world which gives the stimulus meaning, instigates a reaction and determines the form and intensity of the stress response, including the affective and behavioural manifestations

As the individual evaluates an environmental stimulus or life circumstance, a determination is made as to whether or not (or in what manner) the data are congruous with his/her model of the world, and whether or not appropriate covert or overt responses are available (i.e. exist within the person's response repertoire and are accessible for employment) (Engel 1971b) In some circumstances, psychic manipulation may be sufficient to maintain or regain a dynamic steady state, while in others, the mental examination and testing of actions and consequences are followed by overt coping behaviours The latter situation involves a psychobiologic transformation from the individual's normal dynamic steady state to one of two distinct biological/behavioural stress response alternatives: a state of physiologic activation and anxiety or a situation of conservation-withdrawal and giving up (Engel 1968, Engel & Reichsman 1956)

According to Engel, activation involves an affective state of anxiety accompanied by a sympathetic nervous system response (i.e. Cannon's physiologic fight-flight response) The purpose of activation is to induce coping

behaviours which will act to resolve the situation through eradication of the problem, or attain proximity to a supportive other and/or distance from the perceived source of stress With intense levels of activation, the individual can become overwhelmed and begin to withdraw, leading to a biological/behavioural conservation-withdrawal response pattern The latter response, characterized by a predominance of parasympathetic activity, favours survival by minimizing energy expenditure (Schmale 1972)

The biologic state of activation is accompanied by an affective response called the giving up-given up complex, characterized by feelings of helplessness or hopelessness, reduced self-image, loss of gratification or support in relationships or life roles, loss of continuity between past, present and future, and a reactivation of past experiences of helplessness or hopelessness (Engel 1968, Engel & Schmale 1972) In some situations, the individual can proceed through the giving up-given up complex and return to a normal steady state Persistence or recurrence of the giving up-given up complex, however, is hypothesized to contribute to the emergence of disease in predisposed individuals (Engel 1968, Schmale 1969, 1972) Findings tend to support this proposition (Schmale 1972, Schmale & Iker 1966, 1971) An important aspect of Engel's conceptualization is that an external event or circumstance is *not* important in determining individual health outcome Rather, it is the individual's physiologic predisposition and how he or she *responds* to the circumstance that will determine the trajectory (Engel 1968)

### THE ADAPTIVE POTENTIAL ASSESSMENT MODEL: AN INTEGRATION

The theory of modelling and role-modelling synthesizes the theoretical stress adaptation frameworks of Selye (1946, 1950, 1976, 1980) and Engel (1968) into the Adaptive Potential Assessment Model (APAM), a holistic model which delineates two stress states (arousal and impoverishment) and one major non-stress state (equilibrium) comprised of two substates (maladaptive and adaptive equilibrium) It is a framework for describing and classifying an individual's potential to adapt to ongoing and forthcoming environmental stimuli through the mobilization of internal and external resources (Erickson & Swain 1982) These environmental stimuli are classified as *stressors* or *distressors* Stimuli are perceived as *stressors*, or challenges, when the individual perceives that she or he has sufficient resources to master the stimuli Stimuli are perceived as *distressors*, or threats, when the individual perceives that he or she may not or does not have sufficient resources for mastery

The stress state of arousal occurs when an individual, perceiving the existence of a stressor, is able to mobilize his coping resources to contend with the situation. It represents a coalescence of Cannon's fight-flight response, Selye's physiologic alarm reaction and Engel's state of activation and anxiety. Arousal is clinically manifested by an elevation in systolic blood pressure, pulse and respiration, expressions of tension or anxiety without fatigue, sadness and depression, and elevated motor-sensory behaviour (Erickson & Swain 1982). The state of arousal represents the existence of ample potential for the mobilization of coping resources, although the individual may not necessarily realize this potential (H.C. Erickson, personal communication, 28 February 1986).

The state in which an individual has diminished and/or depleted resources available for mobilization is called a state of impoverishment. Theoretically, this state of distress is similar to Selye's stage of exhaustion and Engel's characterization of the conservation-withdrawal (Engel & Schmale 1972) and giving up-given up (Engel 1968) response patterns. Important clinical features of impoverishment include marked feelings of tension, anxiety, fatigue, sadness and depression. A reduction in motor activity is also apparent (Erickson & Swain 1982). It has been proposed that feelings of helplessness and/or hopelessness are prominent characteristics of this stress state. Because of the resource depletion, impoverished individuals are at risk for experiencing the adverse physiological and psychological effects of distress (Erickson *et al* 1983).

A non-stress state of maladaptive equilibrium is a relatively steady state in which an individual copes with stressors in one subsystem by 'drawing energies' (Erickson *et al* 1983) from another subsystem or subsystems. Under this framework, an individual experiencing a limitation in the biophysical domain (e.g. the existence of a chronic illness) must rely upon his psychological, cognitive and social resources in order to strengthen or adapt to the weakened system. Clearly, an individual's capacity to adapt to situational or personal limitations in one system is strengthened by the existence of robust resources in alternative subsystems. Similarly, the existence of limited resources in one system, together with depleted or limited resources in alternative systems, places the individual at a much greater risk for experiencing situations as distressful and suffering the adverse effects of distress.

Finally, individuals in the non-stress state of adaptive equilibrium possess a good potential for the mobilization of resources and are in a state of minimal health risk (Erickson & Swain 1982). Rather than employing their adaptive energies and resources to cope with life stress,

individuals in adaptive equilibrium are able to use their resources for growth and health promotion, leaving no subsystem in jeopardy. Clearly, this state implies the satisfaction of basic needs and a predominance of growth-motivated behaviour. Within this context, health is seen as a state of 'dynamic equilibrium' (Erickson *et al* 1983) among subsystems, a state of holistic well-being rather than merely the absence of disease. The biophysical, psychological, social and cognitive aspects of an individual are a balanced integration which function as a single unit.

### Predisposing conditions

A person's adaptive potential may consist of any one of three states: arousal, impoverishment or equilibrium, which is subdivided into adaptive equilibrium and maladaptive equilibrium. The theory of modelling and role-modelling not only describes these states of adaptive potential, but also delineates the conditions (i.e. personal characteristics — resources and limitations) that give rise to a particular state. For example, persons who possess relative satisfaction of basic needs and psychosocial attributes that reflect a favourable balance of sympathetic strengths over antipathic limitations are more likely to perceive life circumstances as challenges, i.e. as stressors rather than as distressors, and to maintain a state of equilibrium. Other theory-based characteristics hypothesized to promote a healthy state of equilibrium include cognitive complexity (ability to think abstractly, reason), attachment to need-satisfying objects and attainment of affiliated-individuation (knowledge and experience of the self and others as separate but mutually caring individuals). In contrast, persons who have fewer resources, such as relative basic need deficits and/or a balance of antipathic limitations over sympathetic strengths, are hypothesized to be at greater risk for perceiving environmental stimuli as threatening, i.e. as distressors, and experiencing repeated states of arousal and/or persistent states of impoverishment.

Not only do these conditions promote a tendency to view life circumstances as stressors or distressors and support particular states of adaptive potential, but it is also suggested that they are interrelated in ways that facilitate or inhibit health and development. For example, satisfaction of basic needs is positively and reciprocally related to object attachment, cognitive complexity and the achievement of sympathetic strengths. Basic need satisfaction may also contribute to the tendency to view life circumstances as stressors rather than distressors and the maintenance of dynamic equilibrium. Cognitive complexity, achievement of sympathetic strengths and object attachment are hypothesized to contribute to affiliated-individuation, which in turn

promotes equilibrium and the perception of stimuli as stressors. Conversely, relative deficits of basic needs promote and are promoted by object loss or isolation, impaired cognitive functioning and a relative balance of antipathic limitations over sympathetic strengths, as well as contributing directly to the state of impoverishment and the tendency to view stimuli as distressors rather than as stressors. Similarly, impaired cognition, a preponderance of antipathic limitations and object loss or isolation contribute to personal alienation, which, in turn, promotes the state of impoverishment and the view of stimuli as distressors (For a further exposition of these interrelationships, see Ozbolt & Swain 1988)

Thus, according to the theory of modelling and role-modelling, a person's adaptive state is the product of many forces acting in concert. Under this paradigm, because the elements and relationships that give rise to states of equilibrium, arousal or impoverishment can be identified, nursing interventions to restore resources and promote adaptive potential can be defined and appropriately orchestrated.

### EXPLOITING THE GROWTH POTENTIAL: A PROPOSED REVISION OF THE THEORY

The theory of modelling and role-modelling offers a powerful intellectual tool for clinicians to plan and conduct interventions to promote adaptation and the attainment of holistic health potential. Further consideration of the elements and relationships that contribute to adaptive potential, however, suggests a limitation in the conceptualization of the substates contained within adaptive equilibrium, particularly as they relate to people with a chronic physical illness. According to the Erickson *et al* (1983) delineation of the APAM, individuals with a chronic physical illness are unable to achieve a state of *adaptive* equilibrium. Because they must draw upon their psychological, social, spiritual and cognitive resources in order to cope with their biophysical limitations, the maximum adaptive potential for these people is a state of *maladaptive* equilibrium, characterized by the taxing of coping resources. This conceptualization is consistent with Selye's (1976) position that each individual has a finite reservoir of adaptation energy, with total depletion resulting in death.

This conceptualization of *maladaptive* equilibrium, however, underestimates and undervalues the possibility of strengthening adaptive potential by supporting and facilitating need satisfaction, cognitive and psychosocial development, object attachment and affiliated-individuation. Overcoming or compensating for a genetic or acquired limitation in one system (e.g. biophysical limitation in the

case of chronic physical illness) by relying upon resources available in alternative systems (psychological, cognitive, social) should be considered adaptive, rather than maladaptive, provided the person is drawing upon resources that are increasing, as described in the relationships above, rather than decreasing. An individual with chronic pulmonary disease, for example, might employ the psychosocial attributes of trust and hope to evaluate life circumstances as challenging, rather than threatening, thereby retaining the satisfaction of personal growth and dodging the ill-effects of distress. In financial terms, the possession of substantial savings can permit one to exploit the interest, without reducing the principal. Growth-motivated behaviour and self-actualizing experiences can contribute to one's resource principal which can, in turn, serve to buffer potentially stressful situations and enhance the interest available for daily stabilization and personal growth.

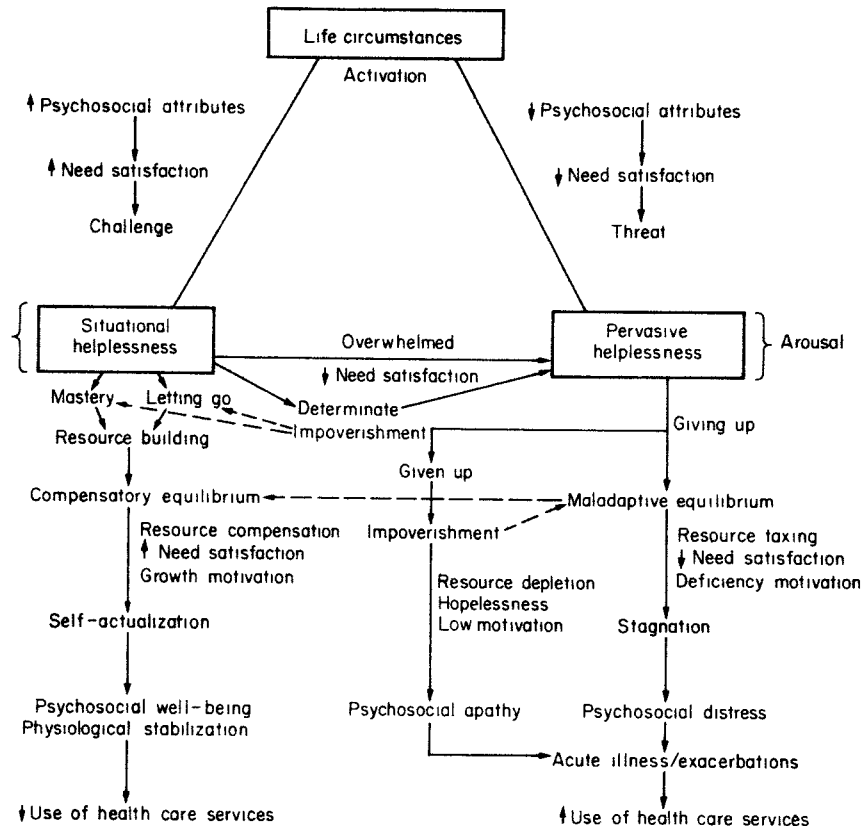
### Compensatory equilibrium

It is apparent that an individual with a chronic physical illness who perceives that basic needs are met, seeks to grow toward self-actualization and continues to build alternative resources may, in fact, be in a subtly different state of adaptive potential than one who is taxing resources in an attempt to maintain equilibrium. The former could be described as *compensating*, while the latter is *maladapting*. 'Maladaptive equilibrium' would still be an appropriate term to describe the person whose personal growth has stagnated, leaving finite (and indeed decreasing) resources to cope with demands in the obviously impaired and the less obviously limited dimensions of life.

Thus, for purposes of the framework of chronic illness presented here, a third dimension of equilibrium is added to the APAM model. This state of adaptive potential, *compensatory equilibrium*, is defined as a non-stress state characterized by irreversible limitations in one system with the concurrent use of resources from alternative systems to adapt to these limitations. Individuals in compensatory equilibrium are at greater health risk than those in adaptive equilibrium due to restrictions which exist in a primary system. They are differentiated from those in maladaptive equilibrium, however, by their greater resource potential, including the existence of healthy psychosocial attributes, a perception of basic need satisfaction and a predominance of growth motivation.

This motivation of the theory of modelling and role-modelling is more consistent with the theme of growth potential delineated in the theory. In addition, it offers a more theoretically satisfying explanation for the clinical

**Figure 1** Psychophysiological processes of stress in people with a chronic physical illness



observation that some chronically ill persons appear overwhelmed and defeated by their illness while others, with objectively similar levels of disease severity, manage to live fully and zestfully, with fewer exacerbations and illness-related limitations. Early findings support the proposition that psychosocial attributes and basic need satisfaction allay perceptions of events as distressing and reduce symptomatic experience in people with chronic obstructive pulmonary disease (Kline 1988). Further research is needed, however.

### SYNTHESIS: A CONCEPTUAL MODEL FOR EXPLAINING PSYCHOPHYSIOLOGICAL PROCESSES OF STRESS, COMPENSATION AND GROWTH IN PEOPLE WITH A CHRONIC PHYSICAL ILLNESS

In view of the need for greater attention to the health- and illness-promoting processes implicit in the theory of modelling and role-modelling, a conceptual model has been devised to delineate the processes that lead persons with chronic illness toward greater well-being and diminished use of health services or, alternately, toward more frequent exacerbations and increased use of health services (see Figure 1). While the process and outcome may exist as

continua, a dichotomy is used for heuristic purposes. The model is an outgrowth of the theory of modelling and role-modelling, incorporating three new concepts not previously articulated: 'letting go', 'determinate impoverishment' and 'compensatory equilibrium'. The latter was defined earlier in the paper and the others will be explained in the ensuing discussion.

The model is based upon the premise that for any individual, life circumstances can lead to a marked level of arousal with concurrent feelings of helplessness. The form of the instigating circumstance, the intensity and pervasiveness of the helplessness response and the psychophysiological outcome, however, are a function of the interaction which takes place between the event or situation and the individual's model of the world, that is, the personal meaning of the event for the individual and the internal and external resources available for dealing with the situation. According to this framework, a perceptively similar circumstance may elicit an overwhelming response in one individual while prompting minimal reaction in another. Instigating circumstances may include discrete events such as retirement, pregnancy, death of a spouse or loved one, change in jobs, moving or graduation. More subtle experiences such as public speaking, attending social events, having overnight guests, attempting new hobbies or sporting activities or driving a car may also initiate a

response. Instigating circumstances involve actual or threatened losses of valued persons (including self-perception), places and/or things, or they may symbolize such a loss. The term 'circumstance' is used to emphasize the subtle or unique experiences, beyond the common list of 'life events' (e.g. Holmes & Rahe 1967) or 'daily hassles' (e.g. Kanner *et al.* 1981) that may elicit a stress response in any client, including those with a pre-existing chronic physical illness.

Psychosocial attributes and pre-existing levels of need satisfaction are postulated to be internal resources which are central to the person's interactions with environmental stimuli. Psychosocial attributes are defined as a positive balance of sympathetic strengths to antipathic limitations, personal qualities and characteristics that evolve throughout life, as defined by Erikson's (1963) theory of development. Because individuals with a preponderance of strengths and virtues are more likely to perceive that their basic needs are met, they are also more likely to accept the challenge of the circumstance and restrict the boundaries of their feelings of helplessness to the situation at hand. Conversely, individuals with limiting attributes perceive a predominance of unmet needs prior to the circumstance, and thus tend to face the situation with a sense of threat and experience a more pervasive feeling of helplessness.

### Situational helplessness

For individuals with strong psychosocial resources (healthy attributes and a sense of need satisfaction), feelings of situational helplessness will be followed by one of three alternative response modes. In the first situation, the circumstance is appraised as a challenge, confronted and overcome, or mastered. The circumstance thus serves as a positive life experience which contributes to the individual's resource principal. In the second response, the problem is evaluated as insurmountable and/or insignificant and is relinquished. Because the individual has 'let go', this stressful experience, like the first, evolves into an opportunity for resource building, personal growth and self-actualization. In both situations, the individual acquires a clearer sense of one's self, resources and environment, and is able to resume a state of compensatory equilibrium, comprised of a comfortable level of need satisfaction and a predominance of growth-motivated behaviour. Feelings of psychosocial well-being and physiological stabilization are important outcomes of these first two forms of adaptation to stress. It is proposed that individuals with strong resources and a tendency toward situational helplessness and letting go also possess a differential need for health

care services to deal with their ongoing illness. This is apparent in fewer and more well-defined requests for assistance.

The third response mode for an individual whose antecedent attributes and correspondent feelings of need satisfaction are robust involves a distressing situation in which the individual is unable to surmount or relinquish the problem. Under these circumstances, psychosocial attributes are insufficient to meet the demand, basic needs are no longer perceived as adequately satisfied and the incessant distressor becomes overwhelming for the individual. This can lead to a state of determinate or circumscribed impoverishment characterized by perceptions of situational uncertainty, personal discontinuity and circumstantial hopelessness with diminished motivation for problem resolution. Under extreme situations involving a persistent aversive or superimposed distressor, a circumscribed state of arousal or impoverishment can give way to a pervasive sense of helplessness which can evolve into a state of maladaptive equilibrium or impoverishment.

With assistance from a significant other and/or nurse, the individual can move out of these three deleterious, resource-depleting states (determinate impoverishment, generalized impoverishment or maladaptive equilibrium) and into compensatory equilibrium. The pathways of intervention and adaptation are represented by dashed lines in Figure 1. Thus, the nurse might help the person experiencing determinate impoverishment to master or 'let go'. The person in generalized impoverishment will need support in order to move toward maladaptive equilibrium, e.g. meeting basic needs to promote object attachment and personal development, thereby restoring resources to cope with the problem and other aspects of life. In addition, the person in maladaptive equilibrium will require further strengthening of resources to move towards personal growth and compensatory equilibrium.

### Pervasive helplessness

The person with limited psychosocial attributes and a pre-existing feeling of unmet basic needs is at risk for responding to life circumstance with feelings of threat and a pervasive sense of helplessness. Uncertain and yet unable to give up, the individual persists in the unsuccessful attempts to deal with the problem, or mourns a failure to satisfactorily resolve the situation. This process is one of 'giving up', an acceptance of defeat and acknowledgement of one's own fecklessness that contrasts with the voluntary relinquishment of an unattainable goal, characterized as 'letting go'. As resources are depleted, the feelings of helplessness give way to feelings of hopelessness and a sense of

having 'given up' In this situation of generalized impoverishment, the individual lacks motivation to deal with the situation. Thus, he or she is at risk for experiencing the adverse consequences of distress, including psychosocial apathy or withdrawal, and/or an acute illness or exacerbation of the chronic physical health problem. By whatever route the client comes to the state of generalized impoverishment, the appropriate nursing intervention is to meet basic needs, knowing that this will promote development and restore resources, enabling the client to move first toward maladaptive and then toward compensatory equilibrium.

An alternative to the state of generalized impoverishment is a situation in which the individual (without the aid of the nurse) is able to mobilize some resources in an attempt to adapt to the circumstance, attaining a stable, though maladaptive state of equilibrium. Rather than letting go, however, the process of giving up is continued, taxing resources and placing already susceptible psychological, social and physiological subsystems in precarious balance. Disturbed by pre-existing unmet needs, distressed over giving up and fearful of a perceived vulnerability, the individual is dominated by deficiency motivation. Thus, a safe, secure, familiar environment is sought in an attempt to get basic needs met and avoid the distress associated with new life circumstances. The stagnation which results from these fruitless efforts can aggravate the distress and isolation, while recurrent exposure to perceptively distressing experiences can lead to repeated and intense levels of arousal and impoverishment, and more rapid progression of disease. It is postulated that for individuals with limited attributes and feelings of unmet basic needs, use of health care services is more frequent and characterized by vague requests for assistance.

Nursing care for the chronically ill client with limited resources should be guided by mutually derived, attainable goals designed to build trust, promote control and develop and strengthen resources (Erickson *et al* 1983). By providing unconditional support and guidance, i.e. role-modelling, during potentially distressful circumstances, the nurse can facilitate successful problem resolution and help the client accumulate a set of positive experiences which will promote personal growth, facilitate the attainment and maintenance of compensatory equilibrium and further progression toward self-actualization.

## TESTING THE MODEL

Research has already begun to test aspects of the model. One study, addressed earlier, found that psychosocial attributes and perceived need satisfaction were not only related to one another, but were related, directly or indirectly, to

perceived stress and symptomatic experience in people with chronic obstructive pulmonary disease (Kline 1988). Additional quantitative and qualitative studies are needed to examine other aspects of the model. For example, how can situational helplessness be clinically differentiated from pervasive helplessness? Similarly, how can giving up be distinguished from letting go? From letting go? Do persons with strong psychosocial resources who confront a stressor and master it or let go indeed acquire a clearer sense of self, resources and environment? In clinical settings, are persons with limited psychosocial attributes and a pre-existing feeling of unmet basic needs more likely to perceive the demands of their illness and treatment as distressful and to respond by giving up and moving into generalized impoverishment? How is this expressed affectively, behaviourally, physiologically? In a broader sense, clinical trials must be conducted to test the efficacy of specific nursing interventions to reduce acute illness and the need for acute care services. For example, interventions designed to meet needs, build trust, promote control and develop and strengthen resources should help clients move from impoverishment and maladaptive equilibrium toward compensatory equilibrium, thus promoting physiological stabilization (Erickson *et al* 1983).

The proposed conceptual model is an outgrowth of the nursing theory of modelling and role-modelling. To the degree that it is empirically validated, the model offers nurses a way to understand client experiences, predict outcomes and choose appropriate nursing interventions. Further, because of its rich theoretical orientation and its potential utility in nursing practice, the model offers an exciting framework for nursing research.

## CONCLUSION

The purpose of this paper was to propose a theoretical framework for nursing practice and research pertaining to clients with a chronic physical illness. The nursing theory of modelling and role-modelling provided the foundation for this work. The psychophysiological processes of stress in people with a chronic physical illness were described, predicting outcomes in terms of psychosocial status and the use of health care services. The conceptual model proposed here is easily adapted to healthy persons, with acute illness rather than exacerbations an eventual outcome of maladaptation or impoverishment, and equilibrium rather than compensatory equilibrium the desired non-stress state conducive to holistic health and personal growth. If further research continues to support the model, its incorporation into nursing practice should improve the processes and the outcomes of nursing practice.



## Acknowledgements

The authors gratefully acknowledge Helen C Erickson RN, PhD of the University of Texas at Austin for her comments on an earlier version of this paper. The creation of this theoretical framework and conceptual model was supported, in part, by a National Research Service Award (Grant F-5-F31-NU05758) and a Professional Nurse Traineeship (Grant 2A11-NU00222), Department of Health and Human Services, United States Public Health Service.

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