

Alternative explanations of coping with stressful experiences associated with physical illness

This article contains a review of the components of four theories (emotional-drive, self-regulation, cognitive appraisal, and self-efficacy) relevant to explanations of the relationship between informational interventions and coping with stressful experiences associated with physical illness. Data from recent clinical studies are used to illustrate the process of evaluating alternative hypotheses about mediating processes from each of the theories. Hypotheses from emotional-drive theory are not supported. Hypotheses from self-regulation theory are supported when the outcome measure is returned to usual activities. Additional analyses reveal the limitations of cognitive appraisal and self-efficacy theories.

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EMPIRICALLY validated theories of coping with stressful experiences associated with physical illness provide a rationale for the selection of nursing interventions that enhance patients' coping. Useful theories provide suggestions for types of interventions, observable coping outcomes, and processes that explain why the intervention affects outcomes. The use of preparatory information interventions to enhance patients' ability to cope is consistent with several theories of coping. However, the theories differ with respect to the

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variables that mediate the effects of information on coping outcomes.

In this article, alternative hypotheses about why specific types of preparatory information interventions affect coping outcomes are presented and evaluated with data from recent research projects. The hypotheses are derived from four theories, each of which may explain the effectiveness of preparatory interventions. The focus is on coping with specific stressful treatment experiences that are a part of physical illness. Although these theories may be relevant to coping with other aspects of having a physical illness, such as receiving a diagnosis of a life-threatening disease or living with a chronic illness, the application of the theories to those aspects will not be included.

Emotional-drive theory and self-regulation theory are presented first. A recent study of the effects of a preparatory information intervention on coping with radiation therapy for cancer in which hypotheses from these two theories were tested is described. Cognitive appraisal theory and self-efficacy theory are then presented. The usefulness of these theories to explain the effects of preparatory information on patients' coping is evaluated by drawing on prior and current research. Emphasis is on the differences among the theories that are relevant to selecting the type of information most apt to bolster patients' ability to cope. Data are used to illustrate the process of testing alternative hypotheses about mediating variables that explain the relationship between independent and dependent variables.¹ Most of the data referred to have been previously published in more detail than will be presented here.

EMOTIONAL-DRIVE THEORY

Emotional-drive theory was first published in 1958.² A psychoanalytical orientation to explaining human behavior and methods similar to those used by Freud were used to develop the theory. Janis based his theory on data generated from psychoanalytical sessions with a patient whose surgery coincided with the course of analysis. The theory was also influenced by data from interviews and questionnaires of general surgical and dental surgical patients.

In this theory, anxiety or fear experienced by patients prior to a threatening experience motivates one's preparation. This preparation consists of thinking about what the experience will include and how to cope with it. This mental work is called the "work of worry." A moderate level of anxiety creates an effective level of motivation in preparation for an impending experience. High levels of anxiety prior to the experience are believed to be secondary to neurosis or misinformation about the experience. Although highly anxious patients may think and worry about the impending experience, the mental work does not produce effective plans for coping. Patients with low levels of anxiety are not motivated to prepare themselves for the impending stressful experience.

Janis hypothesized that information prior to a threatening experience could be used to modify patients' levels of anxiety, thus enabling them to achieve optimum levels of motivation to do the work of worry; that is, information could be used to increase anxiety in some patients and lower it in others. That process could

explain the effects of preparatory information interventions on patients' coping. Hypotheses derived from the emotional-drive theory about the effects of the preparatory information differ by patients' preexperience anxiety levels.

For patients moderately anxious prior to treatment, the expectation is that the intervention will not change their anxiety level and that preparatory information will not affect the coping outcomes. Patients with low anxiety prior to therapy will be expected to have their anxiety increased by the preparatory information because it makes them aware of the impending dangers; thus, they will be motivated to engage in self-preparatory mental activity. It is expected that preparatory information will have a positive effect on coping outcomes in the low-anxiety group because they will then do the productive work of worry. The expectation for patients whose anxiety is high prior to therapy is that preparatory information will reduce anxiety, especially if it is due to misinformation, because the information will allow them to view the impending experience more realistically and to engage in productive preparatory mental activities. Thus, in the high-anxiety group the preparatory information is expected to have a positive effect on coping outcomes by reducing patients' anxiety and allowing them to worry productively.

SELF-REGULATION THEORY

Self-regulation theory is a cognitive theory that relies on informational processing ideas for explanations of human behavior.^{3,4} A central concept of self-regulation

theory, as applied to coping with receiving treatment for a physical illness, is that of a schema. A schema is a cognitive structure of complex knowledge that is abstracted from experience. Schemata guide the focus of attention, the organization of incoming information, the retrieval of stored information, and goal-directed behavior.^{5,6} Preparatory information, as well as other experiences, can influence the composition of the schema that patients have of an impending health care experience.

The components of an experience to which the schema directs the person's attention have emerged as important variables in the coping process. Suls and Fletcher⁷ concluded from an analysis of the literature that there was considerable support for the hypothesis that focusing attention on objective features of an experience instead of the subjective emotional and evaluative reactions is an effective means of coping with stressful experiences.

Other functions of a schema can also affect coping. The processing of incoming information as the experience unfolds could be facilitated by a schema that is clear and unambiguous, because the actual experience would probably be similar to the schema. The facilitation of processing incoming information could enhance understanding and interpretation of the experience. In addition, the reduction of an abstract experience to specific elements could foster problem-solving approaches to coping. The patient may have previously encountered and dealt with these specific elements and this could increase confidence in the effectiveness of one's ability to cope with new experiences.

Self-regulation theory has been exam-

ined in a series of studies of stressful events. It has been repeatedly demonstrated that a particular type of preparatory information, concrete objective information, facilitated coping. Concrete objective information is believed to facilitate coping by influencing the composition of the schema of the impending experience. The unique characteristics of concrete objective information include descriptions of the physical sensations experienced by most individuals in concrete objective terms (that which can be expected to be seen, heard, felt, smelled, and tasted), the environmental features, the temporal characteristics (duration of procedures and sequence of events), and the cause of sensations or experiences when it is not self-evident. Thus, concrete objective information contributes to the formation of a schema composed of clear, unambiguous elements that could guide attention to the concrete objective elements of the experience, facilitate the organization and interpretation of incoming information, guide retrieval of relevant information from past experiences, and support goal-directed behavior.

Based on self-regulation theory, preparatory informational interventions are expected to have a positive effect on coping outcomes because they decrease the discrepancy between expectations and actual experience and they increase patients' understanding of their experience.

COPING AND COPING OUTCOMES

Coping occurs whenever a person encounters an event or a situation that requires some special effort to deal with or

handle it. This definition does not require that the person be emotionally upset by the event or situation, only that effort will be required to deal with it.

Coping outcomes are important because only through measuring outcomes can caregivers determine whether interventions achieve the expected effects on patients' behaviors and responses. Studies only of coping processes or outcomes make limited contributions because they address just one part of the entire model of coping.

Coping outcomes are directly related to the functions of coping. It is generally accepted that there are two functions of coping. One function is concerned with regulating emotional response and the other is concerned with regulating goal-directed behaviors or problem-solving activities. For people experiencing stressful health care situations, the functions are relevant to patients trying to manage or control their emotions and trying to minimize the negative impact the situations have on their lives.

The ability of patients to regulate emotional response will be reflected in how emotionally distressed or how emotionally comfortable they are. The ability of patients to regulate problem-solving activities will be reflected in the degree to which they resolve problems in order to achieve

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goals. Most patients want to minimize the disruption to their usual activities caused by the illness and associated experiences. Therefore, maintenance of or return to usual activities can be a meaningful measure of coping outcome in some health care situations. The functions of coping may be supported by different processes. A theory may explain one of the coping functions and not the other. The use of outcome measures for both functions of coping will help to clarify this issue.

Another important theoretical and pragmatic issue with respect to outcomes of coping with physical illness is the time in the course of the experience when outcomes are assessed. The effects of an intervention in the short term may be different from the effects over the long term and theories will be expected to explain these differences.^{7,8} Pragmatically, interventions that achieve the short-term outcome of patients' early discharge from the acute care setting reduce hospitalization costs. But, the cost savings will disappear unless the long-term outcome of patients' ability to maintain themselves at home and avoid readmission is achieved.

RADIATION THERAPY STUDY

A study of prostate cancer patients coping with radiation therapy⁹ will be used to illustrate testing of alternative hypotheses about the coping process. Receiving radiation therapy is a taxing experience. After the patient has agreed to accept radiation therapy, the first step of the therapy process is a simulation procedure to plan radiation therapy. Following the planning activities, the five-day-a-week treatments begin and, for prostate cancer patients,

continue for six to seven weeks. From the patient's perspective, the radiation therapy experience can be divided into four sequential segments: treatment planning activities, beginning of treatments, onset of side effects of radiation therapy, and decline of side effects.

The design tested the effects of concrete objective preparatory information on coping outcomes in the short term and long term as well as the coping process hypotheses from emotional-drive and self-regulation theory.

Patients who received radiation therapy for localized prostate cancer were selected because they were homogeneous with respect to clinical variables that, if not controlled, can make it difficult to draw conclusions about what caused the effects observed. Most of the patients were retired, married, and had at least a high school education. They were randomly assigned to one of two groups both containing 42 patients.

INTERVENTIONS

The experimental information intervention was delivered by tape-recorded messages during the four phases of the radiation therapy experience. The first message informed the patients about the treatment planning procedures: it was delivered immediately before the procedure and said that the patients would lie on a narrow, hard table and would see red lights coming from the walls of the room. The second message (delivered before the first treatment) described the experience of receiving a radiation treatment and included information about the size and location of the treatment room, the sound of the

treatment machine, and the length of treatment. The third message (delivered at the time of the fifth treatment) presented information about the nature, timing, and pattern of side effects of treatment. The fourth message (delivered during the last week of treatment) included a description of changes in side effects following the completion of treatments.

A comparison group of patients did not listen to the tape-recorded messages. They were contacted by a research staff member at the same time that the tape recordings were played for the experimental patients. The contact consisted of general inquiry about the patient's well-being and social conversation.

All study patients received the usual care provided in the radiation therapy department, including weekly visits with the radiation oncologist and at least weekly visits with a registered nurse for problem resolution and instruction about self-care. Daily treatments were administered by radiation therapy technologists.

OUTCOME MEASURES

Outcome measures reflected the two functions of coping. The indicator of emotional distress was the total score for the subscales of anxiety, anger, and depression from the Profile of Mood States (POMS).¹⁰ The POMS consists of a list of adjectives that describe mood states. Patients indicate on a scale how well each adjective describes their mood.

The indicator of the outcome maintenance of usual life activities was the recreation and pasttime (RP) category from the Sickness Impact Profile (SIP).¹¹ The SIP measures the degree of disruption caused

by illness and its treatment in 12 categories of usual activities. The RP category was selected for the analysis to be presented here because it was free of disruptions caused by self-care activities, such as change in eating habits. An example of an item from the RP category is, "I am not doing any of my usual physical recreational activities." If a patient said that was true and the disruption was because of radiation therapy, it was counted as a disruption. The score generated from the SIP reflects the percentage of disruption of activities.

The outcome measures were taken the first, third, and last weeks of treatment, and the first and third months posttreatment.

PROCESS VARIABLES

A test of the process of coping based on the emotional-drive theory required patients' anxiety to be measured at entry into the radiation therapy situation. Preanxiety was measured by administering a POMS prior to simulation procedure and before assignment to study group. The anxiety scale scores from the POMS were used to divide the patients into three approximately equal-sized groups representing low, medium, and high preanxiety.

The process variables relevant to self-regulation theory were the similarities between expectations and experience, and understanding of the experience. These process variables were measured immediately after the treatment planning session and after the first treatment. Patients were asked two questions: "How similar was the simulation (or treatment) experience to what you expected?" and "How much did you understand what was happening dur-

ing your simulation (or treatment) experience?" Patients responded to the questions on a seven-point scale ranging from "not at all similar" and "did not understand at all" to "very similar" and "understood completely." The responses to the two similarity questions were summed to form a similarity score and the responses to the two understanding questions were summed to form an understanding score.

RESULTS

For the outcome of emotional distress, there were no significant effects for the intervention. The amount of negative mood reported was quite low in both groups of patients. It is not surprising that these patients display little emotional distress. They had an excellent prognosis, had known they had cancer for six to eight weeks before starting radiation therapy, and were older; all of which are related to lower levels of emotional distress in cancer patients.^{12,13} In addition, the most common side effects the men in the study had to cope with were diarrhea, urinary symptoms, and fatigue. It seems reasonable that the elderly men in the sample were not particularly upset emotionally when they experienced these symptoms because they probably had experienced them in the past.

For the outcome RP activities, the study group significantly affected the RP activity scores, which were measured in degrees of scores, ($F[1,82] = 6.57, p < .02$). The experimental group of patients had less disruption in their RP activities than the comparison group. The pattern of differences between groups was the same over times of measurement, (Group \times Time $F[4,328] = 1.07$ not significant).

If the outcome measures had been limited to emotional distress, it would have been concluded that the intervention had no effect on coping outcomes, when in fact the disruption in usual activities could be important to the quality of life of these patients. Disruption in usual activities may be especially relevant for patients when the health care experience continues over a number of weeks, even months, as is true with radiation therapy.

In terms of short- and long-range effects, the data suggest that the intervention effects begin early in the experience and continue until demands for coping are minimal. The differences between study groups were greatest for the measures

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taken during treatments and one month posttreatment. By three months posttreatment most patients were experiencing few disruptions in activities because of having received radiation therapy.

PROCESS ANALYSES

To test the hypothesis from emotional-drive theory, that the intervention had a differential effect on RP scores depending on entry level of anxiety, a repeated measures analysis of variance (ANOVA) was used. The independent variables were preanxiety level, study group, and time of measurement. Support of the hypothesis

required a significant interaction between preanxiety level and study group. Neither the F -ratio for the interaction between anxiety level and study group nor the three-way interaction with time was significant. Therefore, there was no need to test the specific hypotheses relevant to each level of preanxiety. It was concluded that the effect of the intervention on RP scores could not be attributed to the process proposed in the emotional-drive theory.

Negative mood scores were also analyzed using the ANOVA design. Even though there was no main effect for the study groups on negative mood scores, the intervention could have had an effect on negative mood through an interaction between preanxiety and the study groups, as predicted by the emotional-drive theory. The results of this analysis showed that the interaction between the preanxiety groups and the study groups was not significant. Again it was concluded that the process from emotional-drive theory was not supported when the outcome measure was negative mood.

There was a significant main effect on negative mood for preanxiety group ($F[2,78] = 6.42, p < .01$). The mean negative mood scores for the low- and moderate-preanxiety groups were essentially equal to each other across times of measurement during and after treatment. The means for the high-preanxiety group remained elevated during and after treatments. Thus, people entering with some degree of anxiety continued to experience some negative mood; those entering with lower anxiety continued to maintain that lower level of negative mood.

Regression analysis was used to test the hypothesis from self-regulation theory that similarity between expectations and experi-

ence, and understanding of the experience mediated the effects of the intervention on RP scores. The absence of an interaction between study groups and times of measurements allowed one RP score to be calculated for each patient by summing scores over the times measurements were taken. The first step in the analysis was to determine whether the intervention explained a significant amount of variance in similarity scores and understanding scores. Study group explained 10.2% of the variance in understanding scores ($F[1,82] = 9.28, p < .001$), and 19.2% of the variance in similarity scores ($F[1,82] = 19.46, p < .001$). The experimental patients had higher scores on both process variables than the comparison group.

If the intervention effect on RP scores was because the intervention increased understanding and similarity between expectations and experience, then the effect of intervention on RP scores should no longer be significant when the effects of the hypothesized process variables are removed. A multiple regression showed that to be true. The amount of variance in RP scores associated with intervention was reduced from a significant amount of 7.5% to a nonsignificant amount of 3.3% after the variance associated with the mediating variables, similarity and understanding, was removed. Understanding explained a major portion of the mediating effect and therefore may be a more important mediating variable than similarity between expectation and experience.

INTERPRETATIONS

The lack of support for the emotional-drive theory process is consistent with results from a number of studies of surgi-

cal patients.⁴ A major problem for tests of emotional-drive theory is the criteria for classifying patients into low-, medium-, and high-anxiety groups. There are no standard scores or norms that can be universally applied. In the current study of prostate cancer patients, the overall low level of negative mood suggests that there were no truly high-anxiety patients; thus, the hypothesis that the intervention could achieve results by reducing anxiety probably could not be tested. However, it can be argued that the study provided a test for the hypothesis that the intervention would increase anxiety in patients who had little or no pretreatment anxiety, and would thereby motivate patients to engage in the work of worry. There was no support for that hypothesis.

The emotional-drive theory of Janis² has received only minimal support in the 30 years since it was published. Recently researchers at the University of Iowa, Andersen and Tewfik,¹⁴ have published studies of radiation therapy patients in which they concluded that there was support for the emotional-drive theory. These researchers showed that patients low on entry-level anxiety showed increased anxiety by the last week of therapy; moderate entry-level anxiety patients did not change; and high entry-level anxiety patients had decreased anxiety by the last week of therapy.

The use of anxiety as both the process variable and outcome variable is problematic. It is difficult to determine whether changes are due to the hypothesized theoretical process or to the function of "regression to the mean," which can occur when the same variable is repeatedly measured. Although the changes in anxiety from entry to the last week of therapy are

consistent with expectations from emotional-drive theory, no data are presented to support the claim that the process of work of worry brought about the changes.

There are important implications for patients of clinicians using emotional-drive theory to guide their practice. If this theory offered a valid explanation for the coping process, the relevant criterion for selecting preparatory information would be its fear-arousing ability. Clinicians would provide patients who were not anxious with increasingly frightening information until they reached a level of anxiety that would motivate them to engage in the work of worrying. Moderately anxious patients would be provided with no information because they already possess the necessary motivation for worrying. Highly anxious patients would be offered whatever type of information necessary to lower their fear.

Clinical experience and research results suggest that those approaches based on emotional-drive theory would be ineffective at best and would probably be harmful for low-anxiety patients. The use of information to raise patients' anxiety would probably focus their attention on the frightening dimensions of the experience. It has been clearly shown in laboratory experiments how information that focused subjects' attention on emotional reactions to a stressful experience caused subjects to be more distressed than subjects who were given no information about the experience.¹⁵ The current knowledge from research suggests that clinicians should not use interventions that focus the patient's attention on the emotional or reactive dimensions of an impending experience, and the characteristic of fear arousal should not be the basis for selecting information to bolster patients' coping.

Explanations derived from the self-regulation theory as to why information intervention affected the coping outcome received support. The description of the process is that concrete objective information leads patients to form an intelligible cognitive schema of the impending experience. This type of schema focuses attention on the concrete objective characteristics of the experience. The schema facilitates interpretation of the experience as it unfolds and enhances understanding, which can increase confidence in being able to handle the problems encountered. The observation that the effects of preparatory information on the disruption of usual activities during and after radiation treatments was mediated by similarity and understanding, provides considerable support for the explanation offered by self-regulation theory.

Suggestions for future research based on self-regulation theory are

1. to study patients who are more emotionally distressed than the prostate cancer patients were,
2. to test different types of interventions that could direct attention away from the emotional components of a stressful health care experience and/or toward the objective concrete components,
3. to use different methods to facilitate patients' sense of understanding of their experience,
4. to develop methods to measure the foci of patients' attention,
5. to replicate the mediating effects demonstrated in the study of radiation therapy patients, and
6. to determine whether the intervention can be incorporated into ongoing

care activities and still achieve the effects on patient outcomes.

Because the theory is not fully developed, creative thinking and designed research will challenge present ideas and uncover the theory's limits. As self-regulation theory is reformulated, its usefulness for selecting interventions that bolster patients' ability to cope with physical illness will expand.

OTHER THEORIES

Two other theories of stress and coping explain why information interventions might facilitate coping with physical illness; they are cognitive appraisal theory and social learning theory.

Cognitive appraisal theory

Cognitive appraisal processes are central to a theoretical perspective of stress and coping developed by Lazarus and colleagues.¹⁶⁻¹⁸ In this theory, cognitive appraisal of the stressful experience and coping strategies used are posited as mediators of coping outcomes. Cognitive appraisal refers to a process of evaluating a situation with respect to its significance for well-being and resources available for dealing with it. In cognitive appraisal theory, appraisal is the evaluation of a stressful experience as characterized by harm-loss, threat, or challenge. Appraisal is influenced not only by the individual's perspective of the nature of the situation but also by his or her evaluation of the adequacy of available coping resources.

It is possible that the effects of the preparatory information intervention in the study of patients receiving radiation ther-

apy could have occurred because of the influence of information on patients' appraisal of the impending experience. The intervention could have lessened ambiguity and reduced appraisals of threat. Perhaps the lessened ambiguity could also have increased confidence in the existing coping repertoire, which in turn reduced the appraisal of threat.

A specific measure of patients' appraisals was not included in the study of coping with radiation therapy; therefore, a direct test of the hypothesis about the intervention's effect on the appraisal process could not be performed. However, negative mood has been used as an indicator of threat appraisal in some of the research on coping based on cognitive appraisal theory. In the study of coping with radiation therapy, the intervention did not significantly reduce negative mood, which would suggest that perhaps it did not reduce threat appraisal.

Examination of the relationship between threat appraisal, as indicated by negative mood, and the coping outcome, disruption in usual activities, within each intervention group showed some interesting results (J.E. Johnson, unpublished data). Because the measures of negative mood and disruption of usual activity were taken repeatedly, the correlations between scores could be calculated for each of the times measures were taken and from one time of measurement to another time.

There was a consistency among the correlations, regardless of how scores were paired for analysis. In the experimental group, the correlation coefficients for negative mood scores and disruption in RP scores were nonsignificant and most were zero. Insofar as negative moods reflected

threat appraisal, there was no significant relationship between appraisal and the disruption in usual activities in the experimental group. In the comparison group, the correlation coefficients were nearly all significant with a number of correlations in the .4 and .5 range. In contrast to no relationship in the experimental group, the comparison group demonstrated that the higher the appraisal of threat, as reflected by negative mood, the greater the disruption in usual activities. These results for the comparison group are consistent with expectations from cognitive appraisal theory, but the results for the experimental group are not.

Self-regulation theory provides an explanation for these findings from studies that were not planned before this study was conducted. The positive correlation between disruption in usual activities and negative mood in the comparison group suggests that patients in that group who were experiencing some emotional distress when they entered the situation focused their attention on the emotional components of the experience, which reduced their ability to minimize disruption in usual activities. On the other hand, comparison group patients who were experiencing low levels of negative mood may not have focused on the emotional components. Their attentional focus may have been similar to the experimental patients and

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thus as effective as the experimental group in minimizing disruption in usual activities. Attention focus could explain the differences between the experimental and comparison groups in relationships between negative mood and disruption in activity scores.

In conclusion, because the intervention did not have a significant effect on negative mood or the measure of appraisal, an explanation based on an appraisal process is less plausible than explanations about focus of attention. Such speculation may be going beyond the data and therefore may be suspect. However, the differences in relationships between variables in the experimental and comparison groups highlight how various conclusions about coping process can be drawn from studies that rely on measurement of variables *v* studies that manipulate variables.

Social learning theory

The last process to be related to preparatory information and coping is based on social learning theory.¹⁹ In that theory, perceived self-efficacy is proposed as a psychological process with respect to coping and its outcomes. Perceived self-efficacy is concerned with people's judgments of their abilities to execute specific behaviors that could result in control over events. Perceived self-efficacy affects the actions people use, the effort they put forth, and the length of time they persevere. In social learning theory, judgments of self-efficacy refer not to generalized feelings of competence, success, or control, but rather to judgments of how well a person believes he or she will perform in specified settings. The effects on coping

outcomes of interventions that consist of instruction in self-care activities for specific experiences that patients encounter during physical illness may be mediated by self-efficacy processes.

Many studies have been described in which the impact on outcome of instructing patients in self-care activities has been evaluated. Frequently, instructions have been directed at specific problems encountered during an acute phase of an illness experience. Because self-efficacy theory is concerned with judgments concerning competence in specific situations, the theory may explain why the frequently employed instructional interventions are effective.

Interventions that enhance feelings of self-efficacy on coping with specific problems would be expected to be limited to those problems. However, in situations where problems vary among patients or change over time, feelings of self-efficacy that are problem-specific may not be as useful as generalized feelings of confidence. It is possible that the specific feelings of self-efficacy generated by instructions could undermine patients' confidence in their preexisting coping abilities. They could become dependent on care providers to instruct them in self-care activities for the illness-related problems instead of relying on coping techniques and self-care activities that they have previously found to be effective.

Studies of surgical patients have shown that specific instruction in coping techniques directed at problems encountered in the hospital had positive effects on coping outcomes during hospitalization, but no effects or negative effects on coping outcomes after discharge from the hos-

pitals.²⁰⁻²² We surmised that instructions for coping with specific problems occurring during hospitalization could undermine patients' confidence in their ability to deal with the problems they encountered after discharge. Few researchers have followed patients beyond the impact of the specific problems that were the focus of instructions for self-care; thus little is known about the long-term effects of frequently used coping and self-care instruction intervention.

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It has been argued that theoretical explanations of coping processes are critical to sound clinical decisions when selecting information for interventions with patients.

Theories that offer explanations of intervention effects and that have been empirically validated in studies of patients are needed for sound clinical decisions. The clarification of explanatory processes and the specific circumstances under which such processes explain coping has just begun. Clarification of theoretical processes will be especially useful to guide research on differences among individuals and situations and how these variables might interact with interventions or process variables. Nurses now have theories to guide research, appropriate methodologies to test theories, and prior research to build on. Rapid refinement of the knowledge about an area central to the profession, coping with the stresses of illness, is bound to occur.

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