Theoretical model of coping among relatives of patients in intensive care units: a simultaneous concept analysis

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Aim. This paper reports the development of a theoretical model of relatives’ coping approaches during the patient’s intensive care unit stay and subsequent recovery at home by performing an analysis of concepts generated from two empirically grounded, theoretical studies in this area.

Background. When supporting relatives of intensive care unit patients, it is important that nurses have access to evidence-based knowledge of relatives’ coping approaches during the period of illness and recovery.

Method. Simultaneous concept analysis was used to refine and combine multiple coping concepts into a theoretical model of coping. The concepts were generated in two previous empirical studies of relatives’ coping approaches during mechanically ventilated patients’ intensive care unit stays and recovery at home.

Findings. The theoretical model was developed in 2004–2005 and illustrates the effectiveness of different coping approaches in relation to each other and to social support. Definitions summarizing each coping approach and containing the knowledge gained through the simultaneous concept analysis method were also formulated.

Conclusion. This middle-range theory of relatives’ coping approaches may make a valuable contribution to international intensive care unit nursing practice, especially as it is based on empirical studies and may therefore serve as a basis for the
development of future clinical guidelines. However, the theoretical model needs to be empirically validated before it can be used.

Keywords: coping, critical care, family, nursing, simultaneous concept analysis, theoretical model

Introduction

Relatives of patients cared for in an intensive care unit (ICU) are expected to assume responsibility for a great deal of the patient’s long-term need for observation, encouragement and practical assistance after discharge from hospital (Johnson et al. 2001, Swoboda & Lipsett 2002, Foster & Chaboyer 2003). As the relatives have had a difficult and trying experience at the hospital, during (Van Horn & Tesh 2000) and after ICU-care, it is essential that, from the outset, nurses start to promote and support the relatives’ coping ability. This support is vital, since relatives need strength to cope with the responsibility of caring for a mentally and physically impaired next-of-kin (Brooks et al. 1997, Chaboyer & Elliott 2000, Lipsett et al. 2000, Chaboyer et al. 2002, Chaboyer & Grace 2003). These circumstances accentuate the need for an understanding of the factors behind relatives’ coping, such as mental and physical resources, throughout the intensive care period and the recovery period at home. A holistic nursing perspective encompassing both these periods is therefore required when evaluating relatives’ coping ability as well as the ability to provide appropriate supervision and care for the patient.

Models of coping applicable to relatives

Models of coping applicable to relatives can be found in the research literature. The transactional model presented by Lazarus (Lazarus & Folkman 1984, Lazarus 1993) has been used in nursing research and practice (Baldree et al. 1982, Jalowiec et al. 1984, Hansson & Ahlström 1999, Widar et al. 2004). Within the discipline of nursing, several transactional models have been developed with the focus on relatives and family, including the Resiliency Model of Family Stress, Adjustment and Adaptation (McCubbin & McCubbin 1996), the Developmental Health Model (Allen 1983), the Framework of Systemic Organization (Friedemann 1995), the Roy Adaptation Model (Roy & Andrews 1999) and the Neuman Systems Model (Neuman & Fawcett 2002). However, these are general, theoretical models that do not focus specifically or only on coping processes used by hospitalized patients and their relatives. Recent empirical studies investigating the relatives of critically ill patients have detected a significant variation in situation-specific coping (Johansson et al. 2002, 2004).

The importance of supporting relatives’ ability to manage the ICU and the recovery period highlights the need for the development of an evidence-based theoretical model in this nursing domain. Knowledge of the demands on relatives, the resources available to meet these demands and choice of coping approaches as well as knowledge of coping outcomes will, when combined, provide nurses with important information. An increased understanding of relatives’ coping during the acute stage of the patient’s illness may make it possible to predict and thus prevent problems during the recovery period. Therefore, both the ICU-stay and recovery at home need to be included in a theoretical model of coping that can facilitate the identification of possible ineffective coping patterns and assist in the selection of optimal nursing interventions.

The study

Aim

The aim of the study was to develop a theoretical model of relatives’ coping approaches during the patient’s ICU stay and subsequent recovery at home by performing an analysis of concepts generated from two empirically grounded, theoretical studies in this area.

Methodology

In this study, a relative was defined as a close relative or close friend. The theoretical model of relatives’ coping approaches was inductively derived during the period 2004–2005 based on concepts generated from the two above-mentioned empirical studies, which describe how relatives cope during the patient’s ICU-stay (Johansson et al. 2002) and recovery at home (Johansson et al. 2004). These earlier studies were approved by a university ethics committee. The inclusion criterion was adult relatives of adult patients who had been on mechanical ventilation in an ICU. When developing the theoretical model, our study employed simultaneous concept analysis (SCA) in accordance with Haase et al. (1992, 2000) in order to refine and combine multiple coping concepts from
Nursing theory and concept development or analysis

both the ICU-stay and the recovery period in a single theoretical model of coping.

Data analysis

The purpose of SCA is ‘to clarify all concepts simultaneously, offering mutually exclusive theoretical definitions for each concept while highlighting their interrelationships and distinguishing characteristics’ (Haase et al. 1992, p. 141). The analysis involved the following procedures:

- Development of a consensus group comprising individuals who could contribute a certain expertise and were willing to compromise and assist in the development of a theoretical model of coping. In addition to the main researcher, the group consisted of four experts in the area of critical care nursing, coping research and qualitative methods. One of the experts was not a nursing researcher, but instead contributed knowledge from a health promotion perspective.
- The concept clarification strategy involved deciding which specific concept clarification method should be used with regard to the concepts of coping selected from the two empirical studies (Johansson et al. 2002, 2004). The concept of ‘excluding feelings’ in one of the studies (Johansson et al. 2002) was omitted owing to the fact that the users of this coping approach were relatives of patients who had not been on mechanical ventilation. The consensus group decided to use Wilson’s (1969) concept clarification method.
- Clarification of individual concepts. Initially, each researcher made a critical and independent examination of all the concepts from the two earlier studies (Johansson et al. 2002, 2004). Thereafter, in the course of regular group meetings, these coping concepts were clarified with the aid of an organizational framework, which included identification of the defining characteristics or critical attributes of the coping concept, the cause or antecedents of those attributes and the consequences or outcomes. In line with Haase et al. (2000), the consensus group also determined the enablers that facilitated the development of the attributes. A matrix chart was then formulated for each of the coping concepts in the earlier studies, including the four features of the concept clarification method mentioned above. The matrix chart was discussed and continually reformulated until the group members were satisfied with the refined concepts, i.e. until consensus was achieved.
- Development of validity matrices. A validity matrix compares similarities and differences between concepts. For instance, attributes identified in the analysed concepts in the present study were placed in the same validity matrix in order to make it possible to compare them. The antecedents, enablers and outcomes were similarly placed in separate validity matrices. Factors common to all the concepts were then extracted from each validity matrix (Haase et al. 2000).
- Further clarification of individual concepts. The consensus group re-evaluated the clarity of the identified antecedents, enablers, attributes and outcomes, as well as the interrelationships and differences that existed across concepts. At this stage of the analysis, the refined concepts were validated against the empirical data that constituted the basis of the study.
- Validation against the literature, formulation of definitions and re-examination of the validity matrices. With the help of an experienced librarian, two of the researchers systematically searched through the coping literature. Thereafter, each author in the consensus group was assigned the task of further investigating the meaning of one or several concepts, taking existing empirical data as well as the literature into consideration. Refinement of the maturing concept was thus achieved and a summarizing definition formulated. As a result of the refinements, the concept of ‘modulating the situation’ (coping approach during recovery) was collapsed with ‘mastering feelings’ (coping approach during the patient’s ICU stay) under the label ‘mastering’, because the concepts were almost identical. The concept of ‘accepting the situation’ was relabelled ‘acquiescing’ because, in the research literature, accepting has a positive connotation, which was not the case in this study (Johnson & Webb 1995, Nichols & Riegel 2002). Group discussions, including examination and re-examination of the validity matrices, were a characteristic feature of the attempt to clarify the concepts. The group made every effort to avoid additions to the concepts that were not based on empirical data; when the final concepts were formulated, it was deemed important not to force them to accord with theoretical ideas that already exist in the coping literature. Moreover, it was essential to consider the terminology when expressing the concepts, and therefore a contemporary English dictionary was consulted (Bullon et al. 2003).
- Developing and summarizing the process matrix. When all the validity matrices for antecedents, enablers, attributes and outcomes were completely clarified, they were combined into a single process matrix (Johansson 2006, pp. 37–39). This matrix was then used to further examine both the consistency and the pattern among concepts, as well as new concepts that emerged (Haase et al. 2000), in order to gain further insight into the concepts and relations between
them. This process matrix should be seen as an analytical tool and a precursor of theory (Haase et al. 2000).

- **Defining and illustrating the theoretical foundations of the theoretical model of coping.** In the subsequent examination of the process matrix, it became obvious that some coping approaches were more successful than others. These were further analysed by the consensus group and a hypothesis was developed with regard to their effectiveness. Definitions and relational statements were developed in order to provide the hypothesis with a foundation or structure, and the effectiveness of the different coping approaches was illustrated in the theoretical model of coping.

- **Submission of the process matrix and the theoretical model of coping to peers for critical comment.** In order to validate the findings, the consensus group attended seminars with two groups comprising both nurse researchers and doctoral students with the aim of obtaining critical comment. These researchers were asked to primarily consider whether the terms in the process matrix were consistent across concepts, whether the theoretical model of coping was logical and of potential value for nursing practice. The concept of ‘recycling feelings’ was initially renamed ‘chewing’ but, as a result of the first seminar, it was labelled ‘preoccupying’ since ‘chewing’ was deemed an ambiguous and vague concept.

### Findings

**Definitions of the refined coping concepts**

In order to provide a complete picture of the characteristics of each coping approach, summarizing definitions of the different approaches are presented below. These definitions contain, in essence, all the knowledge gained through the concept analysis using the SCA method.

**Mastering**

These relatives were masters of the situation owing to the fact that they had sufficient internal and external resources, which they used in an economical way, carefully planning their involvement in their next-of-kin’s critical illness, being flexible and/or assertive if necessary. This coping approach was characterized by a composure based on perceived self-control in terms of involvement; previous caring experience had taught them how best to deal with the situation. They were conscious of their experiences and emotional reactions, their capacity, limitations and needs. They followed a plan where work, hospital visits, relaxation and stimulation were alternated in order to make optimal use of their resources when meeting the various demands of the situation. Flexibility means having the ability to change to the most appropriate action and behaviour in the context of having a critically ill next-of-kin in hospital and subsequently at home. It also means that the relatives learned to live with and control their distress through an active learning process. They asserted their influence over the situation when necessary, in an effort to gain some degree of control over it, which implies that they were less restrained by the threatening circumstances. All of these strategies were complemented by strong family relations and an adequate social network, as well as support from the nurses. As a result, the ‘mastering’ individual grew to a state of control and confidence over the situation, which represented an optimal way of coping.

**Alleviating**

This coping approach means that relatives used distraction, verbalization, communication and the creation of hope in order to alleviate the overwhelming and chaotic situation of having a next-of-kin with a critical illness. One form of distraction was a tendency to refuse to face the bitter reality and to isolate and suppress their own feelings in order to avoid collapse in a situation they found very taxing and restraining. Other forms were to find an activity to divert the mind and to do something peaceful in order to obtain some temporary relief from the mental and physical weariness. Solid family relations, communication with friends and nurses, and prayer relieved the relatives’ feelings and gave them a new perspective on the situation. When they verbalized their thoughts and sorrows, they were able to give vent to their feelings, which made it easier for them to see their own situation more clearly. Their strong social network provided them with solace, security, confirmation and support, which helped them to achieve a more optimal coping approach. In addition, their environment, where social resources were readily available, easily inspired hopes of a positive outcome.

**Volunteering**

The characteristic of relatives who applied the approach of volunteering was that they considered it a matter of course that they should participate in the care of their next-of-kin. They willingly offered their help, but were unaware of the demands that would be placed upon them. They received moderate lay support. The patients were not dependent on being cared for by those particular next-of-kin, but the latter felt that they were indebted to the patients. Their choice was thus restricted by their indebtedness, and they chose to commit themselves to caring for the patient at home. However, this commitment was limited or determined by their socio-economic situation, which means that
they were not always available to look after the patient. The attitude of the relatives was based on the future-oriented assumption that the patient would gradually return to a normal level of functioning, or at least live as independently as possible. However, they lacked experience of such situations and were unaware of the importance of not overlooking their own needs during the illness period in order to prevent deterioration in their well-being. The relatives felt worried and their state of health tended to vary, which means that the satisfaction of having done something good for one's next-of-kin may have negative implications for the carer.

**Acquiescing**

The attributes of this approach were enduring the situation and redefining it in an effort to cope, even if it means having to relinquish one's own mental and physical well-being. Each relative was faced with a burdensome situation, since the next-of-kin was emotionally dependent on their constant presence at home. They accepted the role of carer despite the feelings of being caught in a situation from which they could not escape. The patient’s mental health had already suffered because of the critical illness in combination with the ICU care. This did not allow the relative any possibility to relax or take part in recreational activities. However, because of the social obligation involved in being a relative of a person with a critical illness, they did not hesitate to accept the situation and were willing to care for the person at home during the recovery phase. They received only sporadic lay social support. Therefore, the main strategy for enduring was to redefine the experience in order to render it more meaningful. The relative believed that the situation ought to improve over time, that there was a time for everything and that the main priority now was the recovery of their next-of-kin. Individuals with this coping approach suffered physical and mental fatigue and had varying physical symptoms. However, since they had a future-oriented coping approach, they anticipated that their next-of-kin would gradually recover, which gave them some sense of meaning.

**Sacrificing**

This coping approach was characterized by conflicting interests, and the relatives had to choose between their own needs and the patient's need for care and attention. ‘To sacrifice oneself’ was a fitting metaphor when one was suddenly thrown into an inescapable situation and had to assume the role of carer. They felt compelled and victimized and offered their services with reluctance. These relatives suffered both physically and mentally during the patient’s ICU-stay and needed relaxation and time for themselves, but the patient’s needs had precedence since they were mentally dependent upon the next-of-kin in the aftermath of the acute illness. They only received sporadic lay support and strived to make the best of their situation since they had a genuine desire to help their next-of-kin because it was the only humane alternative. However, they experienced a great strain, which affected their mood in a negative way. In addition, they exhibited diffuse pain and muscle tension. These relatives experienced caring for the patient as an extended period of suffering and were mentally and physically exhausted.

**Preoccupying**

Relatives who adopted this coping approach constantly dwelled upon and went through the precarious circumstances, mulling over their feelings again and again. They were in a very vulnerable condition and experienced agitated emotions and withdrawal from people due to being encumbered by the next-of-kin’s acute critical illness. The distress served as a trigger for feelings of anger and sadness, which were magnified. As a result, the relatives had varying physical symptoms. They were withdrawn and restrained, having been hurt by previous tragedies and traumas and were only concerned with their own feelings and thoughts about the patient’s condition. These relatives had weak family relations and a poor social network. They rejected support from their friends and professionals for fear of draining themselves of energy if forced to communicate with others in a situation in which they had intense and overwhelming feelings. This coping approach created numbness in feelings and behaviour, which was suboptimal when trying to cope with having a critically ill next-of-kin.

**Theoretical foundations of the theoretical model of coping**

The relationship between the different coping approaches showed differences in the effectiveness of handling the stressful situation of being the relative of a patient during the ICU-stay and the subsequent period of recovery at home. An effective or successful coping approach resulted in a more balanced state of mind and well-being. The effectiveness of coping was defined as follows:

- Coping is effective when the individual's way of managing the situation brings relief to the individual. Highly effective coping is associated with a strong experience of social support, buffering caring experience, and use of other available internal and external resources.
- Coping is ineffective when the individual's way of managing the situation makes the individual's situation even
more difficult. Less effective coping is associated with a weak experience of social support, lack of buffering experience, lack of physical/mental strength and lack of other internal and external resources.

The most appropriate form of coping support for relatives was considered to be emotional support during the ICU-stay and both emotional and practical support during the recovery period at home.

These findings are presented in the theoretical model of coping, which illustrates the different coping approaches in graphic form (Figure 1). Two axes define the theoretical model of coping: the horizontal axis shows coping (including the use of internal as well as external resources), from ineffective to effective, and the vertical axis indicates social support, from weak to strong. This dual perspective, comprising these two dimensions, was a tentative attempt to illustrate the relationship between the different coping approaches, thus making it possible to visualize the effectiveness of each approach in relation to the others with reference to their relative distance or position in the theoretical model. Mastering implies that the person has a high degree of effective coping and strong social support. Preoccupying shows an ineffective approach combined with weak social support, in other words a suboptimal type of coping. Between Mastering and Preoccupying, and in decreasing order of well-being, are the Alleviating, Volunteering, Acquiescing and Sacrificing approaches.

Discussion

Methodological aspects

In this study, relatives’ coping in terms of demands, resources and the outcome of the ICU-stay and recovery at home was identified, investigated and compiled into an overall theoretical model of coping in addition to summarizing definitions of each coping concept based on the SCA method. In addition, the underlying factors identified by the theoretical model highlighted the intricate interplay between psychological, psychosocial and physical conditions in the coping process (Figure 1).

The SCA method is designed to achieve a conceptual definition, greater understanding of the meaning of individual concepts such as coping and the processes that may underlie their antecedents and outcomes (Haase et al. 2000). This clear delineation of concepts will provide nurses with a conceptual basis to effectively develop, implement, evaluate and compare support interventions (Dennis 2003). Therefore, the SCA method was deemed appropriate for our study, especially as its aim was to combine concepts of relatives’ coping approaches during the patient’s acute illness and recovery (Johansson et al. 2002, 2004) into a single theoretical model. Furthermore, the SCA method includes continuous validation of the concepts during the analysis (Haase et al. 2000). In our study, the coping approaches investigated

![Figure 1 The theoretical model of coping describing the effectiveness of the coping approaches used by relatives of critically ill patients in intensive care units.](image-url)
What is already known about this topic

- Nursing theoretical models aimed at enhancing nurses’ support for an individual or family group can be found in the literature.
- There is a lack of theoretical models of coping specifically directed towards improving nurses’ support for relatives of intensive care unit patients, both during patients’ intensive care unit stay and their subsequent recovery at home.

What this paper adds

- A theoretical model of coping is developed illustrating the effectiveness of relatives’ coping approaches during mechanically ventilated patients’ stays in intensive care units and recovery at home.
- Definitions of each coping concept within the theoretical model are provided.
- A basis is provided for a future clinical guideline for supporting relatives’ coping during patients’ intensive care unit stay and subsequent recovery at home.

Aspects of the findings

The summarizing definitions of the refined coping concepts are detailed descriptions of distinctive features and outcomes of each coping approach, making it possible to identify what kind of approach a relative uses. This knowledge may then be used to understand the relative’s coping approach in order to provide the necessary support. The theoretical model of relatives’ coping is illustrative, thus making it easy to visualize the effectiveness of each coping approach, and presents information about coping and its relation to the degree of social support experienced. Based on the analysis of the present empirical material, the most effective coping approach was considered to be Mastering and the least effective Preoccupying. In the case of Preoccupying, a strained mental state was associated with the acute illness period in the ICU, a weak social network and previous trauma. An ICU nurse will probably quite clearly recognize that a relative is under severe pressure but that, without systematized knowledge, no clear nursing intervention may be initiated.

The Mastering and Preoccupying approaches are in agreement with the coping positions of victor and victim as described by White (1995), who outlined the successful path to mastery for chronically ill patients. A coping approach similar to Preoccupying was used by families of critically ill trauma patients who had motor vehicle accidents or gunshot wounds in the study by Leske and Jiricka (1998), which placed them in a vulnerable situation without adequate resources to meet the demands of the situation. Our theoretical model of relatives’ coping and the definitions of each coping concept may together serve as a basis for the development of a clinical nursing guideline to support the relatives of these critically ill patients.

Our theoretical model of coping was specifically aimed at providing nurses with the clinical tools necessary to support the coping efforts of a specific population, namely, the relatives of ICU patients. The theoretical model uses the ineffective-effective coping continuum to show the degree of coping effectiveness. These factors have a theoretical similarity both with the Resiliency Model of Family Stress, Adjustment and Adaptation (McCubbin & McCubbin 1996) and the Roy Adaptation Model (Roy & Andrews 1999), where the concept of adaptation is the end-product in a stress and coping process. An additional strength is that our theoretical model of coping was empirically grounded in data from studies of relatives of critical care patients, which is important when focusing on the provision of support to this group. The coping concepts in these empirical studies were derived from qualitative analysis using grounded theory (Johansson et al. 2002, 2004), where individual coping tendencies were summarized as an overall approach in either the acute illness or recovery stage. Although this way of describing coping may imply a static concept, it was the actual situation in the ICU or at home that gave rise to a specific approach. This is in agreement with Lazarus’ coping paradigm, in which coping is viewed as a situational process (Lazarus 1993). In fact, the theoretical model developed in this study deepens the description of the coping process of the relative along the patient’s illness trajectory, as it follows the relative from the critical and acute stage of the illness to the recovery stage in the home.

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Conclusion

Intensive care units are currently advocating nursing interventions for patients’ relatives. Our middle-range theory of relatives’ coping contributes new knowledge to international ICU nursing practice, especially as it was explicitly developed in order to enable nurses to provide appropriate coping support for relatives of ICU patients, during both the ICU-stay and the recovery period at home. In clinical practice, when nurses communicate with relatives about their coping, this tentative theoretical model has the potential to make it possible to visualize the effectiveness of the coping approaches used. However, the theoretical model needs to be empirically tested and validated before it can be applied in ICU settings.

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Author contributions

IJ, CH, SW, BF and GA were responsible for the study conception and design and drafting of the manuscript. IJ performed the data collection and data analysis. IJ, CH, SW, BF and GA made critical revisions to the paper. CH, BF and GA supervised the study.

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