

## The effect of critical care hospitalization on family members: Stress and responses

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### **Abstract:**

Family members of intensive care patients may experience stressors that threaten both personal health and family integrity. This study found that family members endure multiple concurrent stressors and exhibit numerous behavioral responses, including changes in eating, sleeping, activity, and family roles and responsibilities. Nurses can promote family integrity with interventions that address these behavioral changes and promote normal behavior patterns.

### **Article:**

Severely ill or injured patients in intensive care units (ICUs) today can survive lengthy illnesses of unpredictable course. The seriousness, uncertainty, and suddenness of a family member's critical illness or injury can cause overwhelming stress for families. Stressors may accumulate, as a response to one stressor often creates another. The accumulation of many stressors may lead to unhealthy behavior patterns that can threaten family integrity.<sup>1</sup>

Families provide essential support to patients during and after hospitalization. With the trend toward earlier discharge of more acutely ill patients, families are often required to provide for the patient's health care needs after discharge.<sup>2</sup> Families must receive support during the patient's hospitalization, and nurses are in a key position to provide this support. Through family interventions, nurses can support adaptive behaviors and divert unhealthy behaviors that may lead to maladaptation.<sup>3</sup>

### **LITERATURE REVIEW**

Nursing research on family members of ICU patients, conducted since the 1970s, has focused primarily on [anti]lies' self-perceived needs and satisfaction levels based on needs.<sup>4-7</sup> The literature has also focused on strategies to meet families' self-perceived needs.<sup>8-11</sup> Research reveals that family members identify their priority needs in relation to the patient and frequently do not perceive personal needs as priorities.<sup>5,7,12</sup> Nursing interventions to meet families' perceived needs are often

**TABLE 1**  
**Stress response scores (SRSs) for family members of ICU patients**

	Sleep patterns	Eating patterns	Activity patterns	Family roles and responsibilities	Total
Possible score range	0-11	0-16	0-15	0-8	0-50
Respondents' score range	0-11	0-13	0-14	1-8	6-42
<b>Mean scores (SD) by age group</b>					
• All respondents	6.7 (2.9)	5.3 (3.5)	7.3 (4.1)	4.0 (1.8)	23.3 (9.1)
• 19-29	7.8 (2.3)	6.4 (1.3)	10.0 (3.1)	4.6 (1.5)	28.8 (4.1)
• 30-39	8.4 (2.4)	8.7 (3.4)	9.2 (3.4)	4.5 (1.3)	30.8 (8.1)
• 40-49	6.2 (2.8)	5.4 (3.0)	6.8 (4.7)	4.2 (1.3)	22.5 (9.2)
• 50-59	6.6 (2.9)	3.0 (2.7)	7.0 (3.9)	4.0 (1.7)	20.6 (8.0)
• 60-70	4.8 (2.9)	3.0 (2.4)	4.7 (3.6)	2.7 (2.5)	15.2 (4.9)
Correlation with age (r value)	-0.3049	-0.5220	-0.3989	-0.3626	-0.5679
Comments	Difference in SRSs between males and females was minimal (0.6).	Men had a mean SRS of 4.5 (SD=3.6) and women 5.7 (SD=3.5), indicating that women experienced more changes on average than men in eating behavior.	Men had a slightly lower mean activity SRS (6.2; SD=3.2) than women (7.8; SD=4.4).	Women exhibited a higher average family SRS of 4.2 (SD=1.7) compared with 3.4 (SD=1.8) for men.	Women had higher average total SRSs (24.6; SD=9.0) than men (20.3; SD=9.0).

based on untested assumptions regarding family members' affective and behavioral responses and may lead to harmful, or benign yet ineffective, outcomes.<sup>13</sup>

To design effective nursing interventions for families, nurses need information about family members' affective and behavioral responses, not just their perceived needs. Studies have examined the physical, emotional, and psychological effects of critical care hospitalization on family members and family members' coping strategies. Koller's descriptive study explored needs and coping behaviors when families were faced with a member's critical illness.<sup>6</sup> The most frequently employed coping methods included maintaining hope, praying, thinking of alternative coping methods, and viewing problems objectively.<sup>13</sup>

Titler and colleagues, in a phenomenological study of critical care patients and their spouses, children, and nurses identified themes concerning lack of communication among family members, protection of children from anxiety-provoking information, feelings of overriding threat including vulnerability and uncertainty, intense emotions, disruption of home routines, changes in relationships, role conflict, and physical illness, especially among patients' children.<sup>14</sup> Nurses' understanding of these effects was limited. Nurses were unaware of the physical effects of a family member's serious illness on children and the role conflict experienced by patients' spouses as they strove to be close to the patient and maintain a normal home routine.

In a study that examined behavioral responses, Halm and colleagues found that family members of ICU patients reported changes in many behaviors, including sleeping, eating, activity, and use of cigarettes, alcohol, and medications.<sup>13</sup> However, only one member per family participated in the study, and the study's longitudinal design excluded family members who were unable to be present every day of the patient's first week of hospitalization.

## PURPOSE

Few studies have examined the changes in family members' daily living experiences during a family member's critical care hospitalization. Identifying these responses is a necessary precursor to developing nursing interventions that help family members cope during this stressful time. The purposes of this study were to explore the behavioral responses of adult family members to the critical care hospitalization of a family member and to identify other life events that might be concurrent stressors.

This study was based on complementary concepts found in von Bertalanffy's general systems theory and McCubbin and Patterson's Double ABCX Model of Adjustment and Adaptation.<sup>15,16</sup> Systems theory concepts relevant to this study include wholeness, feedback, and evolution of systems to greater complexity. Families can be viewed as open systems that have boundaries and interactions among members inside these boundaries.

When applied to families, wholeness suggests that the behavior of one individual may be best understood when viewed in the context of the family as a whole. Feedback implies that events occurring within the family affect every member. Thus, one family member's critical illness has an effect on every member, and nursing interventions directed at any member may affect the entire family.

Evolution of systems to greater complexity is exemplified by families developing new, more complex coping strategies in response to stressors or challenges. Families and family members are capable of growth and development through crisis management.

The Double ABCX Model of Adjustment and Adaptation examines family crises in terms of family stressors, family coping resources, and family perception of stressors. These factors may lead to a family crisis—disruption or disorganization in the family that demands change to regain stability. The model also incorporates factors that influence the family after the crisis has occurred, including the accumulation of stressors (called pileup) in response to the crisis, family adaptive resources, and the definition and meaning of the crisis to the family. These factors influence a family's movement to successful or failed adaptation.<sup>16</sup>

Families, as systems, interact with and respond to crises. Families experience stressors daily, have existing resources, and define their stressors. The extreme stress of a critically ill or injured family member requires significant family responses. This study examined these responses by noting changes in daily behavior patterns. Nurses intervening with family members precrisis and postcrisis may use this information to facilitate family adaptation. For a discussion of the methods used in this study, see Research Methods.

## RESEARCH METHODS

The study design was a nonexperimental, cross-sectional, descriptive survey of critical care patients' family members.

### **Setting and sample**

The study took place at a medical research center that serves as a tertiary referral center in the southeast United States. Institutional review boards of the university and medical center approved the study.

The nonprobability sample was drawn from adult visitors in the waiting rooms of a 16-bed, Level I surgical/trauma intensive care unit (SICU) and a 20-bed cardiothoracic intensive care unit (CTICU) that is part of a major heart center. The investigator approached family members in the waiting areas of the SICU and the CTICU. Twelve percent of persons approached declined to participate in the study. Respondents had to be at least 18 years old, able to read English, and family members of patients in the designated ICUs.

The sample consisted of 50 people (35 women and 15 men) representing 28 families. A maximum of four subjects per family were surveyed. Most respondents were children of patients (44%). Other relationships included spouse (18%), sibling (10%), parent (10%), and in-law (6%). Respondents' ages ranged from 19 to 70, with a mean age of 46.3 (SD=13.2). The majority of respondents were married (78%), white (64%), and high school (52%) or college (34%) graduates. Other ethnic groups included African-American (10%) and Native American (4%). Eleven participants (22%) did not respond to the question regarding ethnicity or entered unusable answers (for example, U.S. citizen).

Respondents lived varying distances from the institution, ranging from 6 to 3,000 miles. Thirty-two subjects (64%) lived less than 100 miles from the hospital, 13 (26%) lived 100 to 500 miles away, and the remaining 5 (10%) lived more than 1,000 miles away. On the day of survey completion, respondents had traveled an average of 37.6 (SD=44.8) miles to the hospital with a maximum of 225 miles. Twenty-three (46%) respondents were surveyed in the SICU waiting room and 27 (54%) in the CTICU waiting room. Unplanned events and emergencies accounted for 50% of patients' admissions. At the time of survey, most patients (74%) had stays of 10 days or less, and 54% had stays of 2 days or less.

Subjects completed surveys anonymously and returned them to a box in each waiting area. Return of a completed survey constituted consent to participate. Data collection occurred during a 2-week period between 8 a.m. and 8 p.m., including weekdays and weekends. The usable return rate for surveys was 85%.

## Instrument

### **Instruments**

We used two survey instruments and one demographic form for data collection. The first survey was a modified version of the Iowa ICU Family Scale (IIFS), which contains 61 Likert-type items plus structured and open-ended items to explore behavior changes in sleep, eating, activity, family roles, and support systems. The IIFS asks family members to report whether a specific behavior increased, decreased, or remained the same when compared with the time before the family members' admission to the ICU. The Family Intervention Research team, a group of content and methodological experts in the field of families and critical care nursing, established content validity. Ten critical care nurses also evaluated the tool for clarity and completeness.<sup>1</sup>

We made minor revisions to the IIFS for this study, including changes in wording for clarity and to make the instrument less institution-specific. Expert panel review established the revised instrument's content validity. The revised instrument subscales' internal consistency reliabilities ranged from 0.73 to 0.82, with the exception of family roles and responsibilities, which had an internal consistency reliability of 0.41. This lower value may be due to the shorter length of this subscale. Internal consistency reliability for total stress response scores (SRSs) was 0.86.

We used data from the revised IIFS to calculate each respondent's SRSs. We calculated the SRSs by scoring a zero for a response not indicative of stress and a one for a response indicative of stress. We totaled the item scores to obtain an SRS for each survey category of sleeping, eating, activity, and family roles and responsibilities. Maximum possible values varied by category, with higher scores indicating more stress. We calculated a total SRS by adding a respondent's scores for the categories.

The second instrument we used was the Social Readjustment Rating Scale (SRRS), which consists of a list of 43 life events, both desirable and undesirable, that are considered stressful and are associated with the onset of illness.<sup>2</sup> The extensive use of the SRRS in subsequent research supports its validity. Reliability of ranking of stressors was established as  $r \geq 0.82$  for all groups examined. Kendall's coefficient of concordance was 0.477, significant at  $P < 0.0005$ .<sup>2</sup> Respondents place a check mark beside each event that has occurred in their lives in the last 2 years. Each event experienced is assigned a value of life change units (LCUs), which we calculated by summing the total points awarded to each identified stressor. The maximum possible LCU score was 1,466, which would indicate the highest possible number of life events and the most stress. However, a score of 1,466 would indicate a change in the past 2 years in all of the 43 listed life events—highly unlikely for any individual.

### **Investigator**

For more information or to replicate this study, contact Elizabeth Van Horn, RN, CCRN, MSN, 3813 Zenith Place, Durham, NC 27705; E-mail: vanhorn@acpub.duke.edu.

### **References**

- Halm, et al. Behavioral responses of family members during critical illness. *Clinical Nursing Research* 1993;2(4):414-37.
- Holmes TH, Rahe RH. The social readjustment rating scale. *Journal of Psychosomatic Research* 1967;11(2):213-8.

### **FINDINGS**

A statistical summary of the findings can be found in Table I.

### **Sleeping patterns**

The majority of respondents had spent the previous night at home (56%). Other lodgings identified by respondents included a local hotel (24%) and the ICU waiting room (10%). Respondents reported a variety of changes in sleeping behaviors (see Table 2). Most respondents experienced fewer hours of sleep and poorer sleep quality: about half had fewer and shorter naps. Twenty-six respondents reported sleeping in the waiting room at some time during the patient's hospitalization. Thirteen of these stated they were awakened by noise. on average, 3.8 times during the night.

### Eating patterns

Respondents reported changes in eating patterns and types of food eaten. They also reported symptoms associated with changes in eating patterns. The largest percentage of respondents reported eating the same amount of breakfast (42%) and less lunch (44%). dinner (48%). and snacks (44%). (See Table 2 for other factors associated with changes in eating.) Thirty percent of respondents noted that they had changed their diets somewhat. They had added foods such as bagels, breakfast food in general, junk food, fast food, fruit, and ice cream, and they had stopped eating full-course meals and vegetables. One respondent reported that she had fasted for 4 days. Half of all respondents reported diminished appetite, and many reported more stomach upset than usual.

### Activity patterns

Respondents reported changes in many activities. They experienced increases in waiting and thinking (78%). praying or meditating (66%). talking with friends (58%). and visiting the patient (58%). They reported decreases in watching television (64%). jogging or other strenuous exercise (26%). and walking (26%). The most common responses to an open-ended question regarding other activities revealed that family members spent more time driving or riding and making phone calls to family or friends and less time with children at home or working. Single responses regarding activities included increases in nail biting, visiting other patients. spending time at the motel, worrying, and engaging in family togetherness: respondents reported decreases in outdoor activities (such as gardening), going to church, and being with pets.

We asked family members to rate their energy levels since patients' admissions to the ICUs. The most com-

Scale item	More (%)	Less (%)	Same (%)	No response (%)
<b>Sleep behaviors</b>				
Hours of sleep	1 (2)	40 (80)	9 (18)	0 (0)
Quality of sleep	7 (14)	35 (70)	8 (16)	0 (0)
Number of naps	16 (32)	24 (48)	8 (16)	2 (4)
Length of naps	4 (8)	33 (66)	8 (16)	5 (10)
Use of sleeping aids	10 (20)	6 (12)	29 (58)	5 (10)
Difficulty falling asleep	24 (48)	7 (14)	15 (30)	4 (8)
Early morning awakening	25 (50)	3 (6)	18 (36)	4 (8)
Difficulty remaining asleep	28 (56)	5 (10)	13 (26)	4 (8)
Not feeling rested after sleep	27 (54)	8 (16)	12 (24)	3 (6)
<b>Associated factors</b>				
Appetite	6 (12)	25 (50)	15 (30)	4 (8)
Nausea/vomiting	9 (18)	2 (4)	20 (40)	19 (38)
Stomach upset	18 (36)	3 (6)	15 (30)	14 (28)
Indigestion	9 (18)	2 (4)	19 (38)	20 (40)

mon response was "very tired" (58%). followed by "exhausted" (26%). A few respondents reported "no different than usual" (4%) or more energy than usual" (4%).

Comparisons of mean activity stress response scores (SRSs) and specific activities revealed that family members who visited more or prayed more had higher mean total SRSs when we tabulated all stressors. Family members who did not report visiting the patient had the lowest SRSs. Family members who did not report praying had lower average SRSs than those who prayed (see Table 3).

### **Family, roles and responsibilities**

A majority of respondents (56%) experienced changes in family roles or responsibilities. Family and friends helping at home with responsibilities and child care was a major theme described by II respondents. Other responses included feelings of stress related to interactions with extended family, the need for proximity to the patient, being out of work or working less, having to put personal family duties on hold, and feeling a heavy responsibility or having to make difficult decisions.

Positive changes identified included family support, maintaining a positive attitude, church member support and prayers, and more family togetherness. One respondent described the burdens of her personal experience by stating, "I feel I have been given total responsibility for everything. I have spent only one night at my home since my mom's admission. Everyone looks to me for Mom's getting better."

Respondents also rated a list of other factors that might have caused their lives to be more stressful since the patient's admission to intensive care. Factors rated highly included emotional strain (74%), distance from home (68%), employment concerns (48%), and financial concerns (44%). Other stressful factors identified included uncertainty of events, patient medical complications, uncaring hospital staff, and loneliness. One respondent reported that her home had been burglarized during the hospitalization.

### **Emotional support**

The final section of the survey asked about emotional support. Respondents identified friends and other family members (84%) as their greatest sources of support. Other sources included nurse (44%); other ICU visitor (38%); physician (38%); chaplain, minister, or priest (38%); and neighbor (32%).

The survey asked family members to describe what they found supportive in others' behavior. Nine respondents commented on the provision of information: five mentioned others' prayers and concerns: four stated that the visitors supported each other: three remarked on the company of others, conversation, and "being there." Other responses included frank discussion, offers of help, kindness, caring, understanding, and validating feelings.

When asked what else could be done to provide support, respondents' common responses included permitting more visitation and flexibility with visiting times, clearer information and expected outcomes, and more time with the physicians. Requests concerning the waiting room included better and more comfortable chairs, a larger room, a cleaner room, a place for privacy, blankets, better communication over the intercom system, and a telephone line for computer modems. Four respondents felt that nothing more could be done to support them.

Stress response score and life change units

We calculated a total SRS for each respondent by adding the respondent's SRS for each category (see Table 1). Family members who anticipated a planned surgery for the patient had an average total SRS of 23.0 (SD=10.8),

**TABLE 3**  
**Family members' mean stress response scores (SRSs) according to hours spent visiting or praying\***

Visiting, in hours	n**	Mean SRS	SD
0	18	18.4	8.0
0.25-2	24	26.3	9.6
3-4	4	25.5	5.7
5-9	0	—	—
10	2	27.5	6.4
Praying, in hours	n	Mean SRS	SD
0	21	20.3	9.1
0.5-3	17	25.6	9.8
4-7	0	—	—
8-10	3	25.3	11.5
11-23	0	—	—
24	5	24.0	6.8

\*Praying responses of "all day" were given a numeric value of 24 hours.  
\*\* Two answers for visiting and four for praying were uncodable.

compared with family members of patients who were admitted for an unplanned event, who had a slightly higher average total SRS of 24.6 (SD=7.2). Length of patient stay (LOS) at the time of survey completion also affected total SRS. A general increase in mean total SRS developed as patient LOS increased. Mean total SRS decreased as patient LOS reached or exceeded 20 days (see Table 4).

The most common event family members identified in response to the Social Readjustment Rating Scale was a change in a family member's health. Other frequently identified events included changes in sleeping habits, eating habits, responsibilities at work and work hours, and financial states: personal injury or illness: and death of a close family member. Respondents identified an average of eight changes (SD=5.4). Respondents scored an average of 244.1 (SD=160.1) life change units (LCUs), with a minimum of 25, a maximum of 638, and a median of 210.5. Respondents' scores can be categorized according to the life crisis levels Rahe defined:<sup>17</sup>

- no life crisis ( LCU <150)-15 respondents
- mild life crisis (LCU 150 to 199)— eight respondents.
- moderate life crisis (LCU 200 to 299)-13 respondents
- major life crisis (LCU > 300)-14 respondents.

The risk of illness increases at successively higher levels of life crisis.

Age and LCU score were negatively correlated (Pearson's  $r=-0.4841$ ). Stress response scores and LCUs were positively correlated (Pearson's  $r=0.4792$ ). Women had higher average total SRS and LCU scores than men, indicating higher overall stress and increased probability of illness. Women scored an average total SRS of 24.6 (SD=9.0) compared with 20.3 (SD=9.0) for men, and women had an average LCU score of 255.4 (SD=163.7) compared with 217.9 (SD=153.4) for men.

## DISCUSSION

Family members on average reported behavioral changes in nearly 50% of the areas the survey examined. The 30-to-39 age-group experienced the most changes in sleeping and eating patterns and the second highest number of changes in activity patterns and family roles and responsibilities. The 19-to-29 age-group had only slightly higher scores in the latter two categories. Correlations between age and SRSs were consistently negative. The 60-to-70 age-group had the fewest changes in all patterns. Women had higher average LCU and SRS scores than men in all categories. Finally, family members' SRSs generally increased as patient LOS

increased. In light of these findings, family members may be at risk for disruption of personal health and family integrity.

Stress response scores declined slightly after patient LOS reached or exceeded 20 days, possibly indicating that some family members adapted to the situation and resumed previous roles and functions.

This study suggests that family members are at high risk for sleep deprivation during a relative's hospitalization because of frequently interrupted sleep as well as decreased quantity or quality of sleep. These findings are consistent with Halm and colleagues.<sup>13</sup> Family members who sleep in the waiting room may experience both poorer quality of sleep and interrupted sleep. The need to remain close to the patient is a major reason family members choose to sleep in the waiting rooms.<sup>7,18,19</sup> Economic constraints and the lack of overnight accommodations also contribute.<sup>18</sup> The numerous ill consequences of sleep deprivation on health, safety, and psychosocial functioning are well recognized: therefore, nurses should try to prevent sleep deprivation in family members. (Suggestions will be discussed under "Nursing Implications.")

Changes in eating behaviors also may have detrimental effects on family members. Decreased consumption of lunch, dinner, and snacks: decreased appetite and increased stomach upset place family members at risk for inadequate nutrition. Family members in this study and in Halm's study reportedly ate the same amount of breakfast but less lunch).<sup>13</sup> Both studies identified the addition of junk food and fast food to family members' diets. This study also found that decreased activity, financial strain, and emotional strain may have contributed to poorer eating habits.

Poor nutritional intake increases family members' risk of infection, as the body's ability to make protein-based antibodies is decreased. Fasting may cause the body to catabolize muscle proteins for energy, altering the body's natural metabolism. Family members who changed their diets frequently reported eating more junk food and fast food. A diet largely composed of starch, sugar, and fat, as found in snack foods, may result in family members consuming many nutritionally empty calories. The result may be weight gain and a diet missing essential nutrients.

Family members reported changes in a variety of activities. Many noted that they spent increased time driving or riding because of the distances they had to travel to get to the hospital. Results of this study and Halm's study support that talking with friends and visiting the patient indicate the use of family and friends as social support.<sup>13</sup> Respondents' reports of IOW energy levels in both this study and Halm's study may be related to sleep deprivation, nutritional changes, and decreased exercise.<sup>13</sup> Finally, less time at work may cause increased financial strain.

Results regarding visitation and praying were unexpected. In general, as visitation increased, so did average SRSs. It is unclear if family members who experience increased stress visit more often or if visiting more often increased SRSs. In general, family members who prayed more also reported higher average SRSs. Again, it is unclear if family members who pray more experience more stress or if highly stressed family members pray more. The type of prayer may also be relevant to family members' SRSs. Prayer and rumination are different activities that family members might confuse and that may affect their stress levels. These findings warrant further investigation.

Changes in family roles and responsibilities can have devastating effects because these changes affect the entire family. The qualitative data in this survey suggest that as family members provide support to patients at the hospital, their absence in their own homes affects all family members. Johnson and colleagues also found fragmentation of families to be a major theme.<sup>20</sup> In their study, family members reported feeling torn between being at the hospital and at home. As family members respond to the patient's hospitalization, they create additional stressors by causing changes in their home lives. These combined stressors become the pile up of stressors identified by the Double ABCX Model of Adjustment and Adaptation.<sup>16</sup>



The 19-to-29 and 30-to-39 age- groups reported the most changes in family roles and responsibilities. These two groups are the most likely to have young children (and possibly also aging parents) in their care. Women reported more changes in this area as well. Women are more likely to be responsible for child care and the home and are also more likely to care for ill or disabled family members.

Family members' positive responses included the assistance of family members and friends, increased family togetherness, and church member support. These findings are consistent with those of Johnson and colleagues.<sup>20</sup> The Double ABCX Model of Adjustment and Adaptation states that families use new and existing resources to both prevent a crisis and regain stability after a crisis.<sup>16</sup> McCubbin and Patterson describe social support as a primary family resource.<sup>16</sup> The results of this study are consistent with this assessment.

Respondents reported that friends and family members provided the most emotional support. Respondents also considered nurses and other ICU visitors highly supportive. The perception of supportive behavior by those other than family and friends may relate to the provision of information, as family members consistently rank this as a high priority." In this study, family members revealed that ICU visitors supported each other and shared information. This may be a result of having a common experience over time with others in proximity ("same boat" phenomenon). Respondents' comments suggested that regardless of the source, providing information was considered

**TABLE 4**  
**Days since patients' ICU admissions and mean total stress response scores (SRSs) for family member respondents**  
 (n=50)

Length of stay	n	Mean SRS	SD
Day of admission	9	18.0	7.5
Day 1	12	22.9	8.2
Days 2-4	7	20.1	9.5
Days 5-6	0	0	0
Days 7-10	9	27.3	8.2
Days 11-19	8	28.2	7.7
Days 20-30	5	23.4	13.4

very helpful. These data also suggest that the need for information is closely linked to family members' perceptions of being supported.

Age had a negative correlation with both SRS and LCU scores. These results may indicate that elderly family members adjust better to stressful situations or that they encounter fewer stressors and life changes. In contrast, the 30-to-39 age-group reported the highest average SRS scores, with women often having higher scores than men. These findings imply that the 30-to-39 age-group and women in general experience more stressors and require more support from nurses and others to maintain their health and family integrity. Several possible explanations exist for the differences in SRS and LCU scores related to age and sex. The 30-to-39 age-group and women are more likely to have many family responsibilities, so they may have more stressors. Also, respondents in the 60-to-70 age-group may not be typical of people this age. For example, those who come to the ICU waiting rooms may do so because they are healthier, are more functional, or have more support (family, financial, and social) than those who do not come.

In their longitudinal study, Halm and colleagues found total SRS peaked on day 1, decreased steadily until day 5, then plateaued until after day 21, when it declined again." The results of this study revealed that total SRS generally increased as patient LOS increased." Stress scores decreased after patient LOS reached or exceeded 20 days. Other results revealed that the reason for patients' admissions, planned or unplanned, made little difference in family members' stress scores. This study did not support the assumption that family members who have time to prepare for an event of great magnitude experience lower stress. Families most likely viewed

scheduled surgeries as urgently needed, and time to prepare was probably minimal. These findings suggest family members need daily support during a crisis, whether the event was planned or unplanned.

Increased LCU is another indicator of the additive nature of stressors, some of which may have long-term effects and require a lengthy recovery. The results of this study indicate that 84% of the family members surveyed are at increased risk for physical illness. The average LCU score (244) places family members in the moderate life crisis category, with a 51% chance of illness. In addition, 14 (28%) family members' scores placed them in the major life crisis category, indicating several events with a severe impact and a 79% chance of illness.<sup>17</sup> The correlation between SRS and LCU scores was positive, indicating that family members with higher stress have more life changes, or vice versa.

## NURSING IMPLICATIONS

Nurses should focus on early assessment of the changes family members experience in eating, sleeping, activity, and roles and responsibilities. Ensuring adequate sleep—both in quantity and quality—as well as adequate nutrition are essential to helping family members maintain their health. Consult a social worker for family members who need affordable accommodations or other financial assistance and a psychiatric advanced practice nurse, family nurse liaison, or clergy member for family members requiring additional emotional support. Early use of these resources may help families prevent stressors from accumulating.

Nurses should educate family members about the consequences of sleep deprivation and inadequate nutrition. Discuss the increased risk of injury, especially while driving, associated with sleep deprivation. Emphasize the importance of eating a well-balanced diet and resisting the urge to skip meals or fast. Encourage family members to eat healthful snacks.

Promote family members' nutrition by advocating for a small refrigerator and a microwave oven for family use. Leftovers could be safely stored and reheated, thereby decreasing expense, waste, and the potential for spoilage and contamination. Family members could bring boxed lunches from home and safely store them. To promote better sleep for family members, nurses could advocate for large, comfortable chairs and recliners for those who choose to sleep in the waiting room.

Nurses should also encourage family members to maintain normal activity patterns and to exercise in moderation, as sudden decreases in activity may have physiologic effects, such as changes in energy levels and bowel function. Adequate activity during the day will also help family members sleep better at night. Taking breaks to get fresh air, walk to the hospital gift shop, or visit nearby attractions can provide a brief distraction and some exercise.

Nurses should also be aware of family members' potential for irritability, moodiness, and decreased attentiveness. The effects of sleep deprivation may affect family members' interactions with health care providers, the patient, and other family members, which may also threaten family integrity. Nurses must understand that family members may need information repeated frequently and that their comprehension may be decreased. Family members also may need to talk to an attentive listener.

In helping families manage responsibilities, nurses can direct families to available resources and encourage them to spread caregiving among friends and other family. By sharing their responsibilities with others, family members reduce their burdens and accumulate social support. Families can resist a crisis or restore family integrity after one has occurred by using existing resources and acquiring new ones.<sup>16</sup> Nurses can be an essential and daily part of families' support in this process.

Finally, concurrent stressors have the potential to negatively affect family members' health. Nurses should discuss with family members the negative effects of multiple stressors on health and the advisability of minimizing additional life changes at this time and in the near future. This knowledge may help family members avoid acquiring additional stressors and increasing their chance of illness.

## FUTURE RESEARCH

These findings have many implications for future research, which could focus on family members' reasons for sleeplessness, reasons family members chose to sleep in ICU waiting rooms, specific effects of sleep deprivation on family members, and identification of effective methods to promote adequate sleep. Areas for future research regarding eating behavior changes may include assessing family members' knowledge of the importance of adequate nutrition and the effects of financial strain on dietary patterns. Researchers should examine the specific effects of changes in nutrition and interventions to promote adequate nutrition.

Future research in family roles and responsibilities should examine the long-term effects of a family member's critical care hospitalization on the patient's family. The implications for major changes in family functioning are great. Family restructuring—major changes in roles, or changes in family structure such as divorce—is likely to occur if a family experiences a crisis as a result of overwhelming stressors.<sup>16</sup> Examining this adjustment and adaptation may help families withstand a crisis, maintain family integrity, and reach a higher level of family functioning.

Improved family functioning may be manifested as enhanced family independence, improved integration of the family into the community, or family support of individual family members' growth.

## SUMMARY

Family members of ICU patients endure multiple concurrent stressors that can threaten family integrity. Maintaining family integrity and healthy family functioning is important to patients, as they will ultimately return to their family's care. The concept of feedback, found in general systems theory, implies that nurses can have an effect on families through interactions with individual members).<sup>16</sup>

Although nursing has long recognized the basic needs this study's respondents exhibited (such as sleep, nutrition, and psychosocial support), the results emphasize the need to develop effective interventions for family members. Nursing support of families should be studied and developed because maintaining family systems is an important aspect of holistic nursing care of patients.

## REFERENCES

1. Kleeman KM. Family systems adaptation. In Cardona VD. et al-eds. Trauma Nursing: From resuscitation through rehabilitation. Philadelphia. Saunders Co.. 1994;199-219.
2. McShane RE. Family theoretical perspectives and implications for nursing practice. AACN Clinical issues in Critical Care Nursing 1991; 2(2)210-9.
3. McClowry SG. Family functioning during a critical illness: A systems theory perspective. Family Issues in Critical Care 1992;4(4)559-64.
4. Curry S. Identifying family needs and stresses in the intensive care unit. British Journal of Nursing 1995;4(11):15-9.
5. Kleinpell RM. Powers M3. Needs of family members of intensive care unit patients. Applied Nursing Research 1992;5(112-8).
6. Koller PA. Family needs and coping strategies during illness crisis. AACN Clinical Issues in Critical Care Nursing 1991;2(2)338-15.
7. Molter NC. Needs of relatives of critically ill patients: A descriptive study. Hears & Lung 1979;8(2)4332-9.
8. Clarke SP. Increasing the quality of family visits to the ICU. Dimensions of Critical Care Nursing 1995;14(41:200-12).
9. Harvey C. et al. Support group for families of trauma patients: A unique approach. Critical Care Nurse 1995;15(4)59-63.
10. Henneman EA. et al. An evaluation of interventions for meeting the information needs of families of critically ill patients. American Journal of Critical Care 1992;1(3):85-93. 11.
11. Krapohl GL Visiting hours in the adult intensive care unit: Using research to develop a system that works. Dimensions of Critical Care Nursing 1995;14(51:245.58).
12. Plowright Cl. Needs of visitors in the intensive care unit. British Journal of Nursing 1995;4(111):10441-3.

13. Halm MA. et al. Behavioral responses of family members during critical illness. *Clinical Nursing Research* 1993;2(4):414-37.
14. Titler MG. et al. Impact of adult critical care hospitalization: Perceptions of patients, spouses, children, and nurses. *Heart & Lung* 1991;21(2):174-82.
15. Von Bertalanffy L. General systems theory. In Ruben B. Kim eds. *General, systems theory and human communication*. Rochelle Park, NJ.: Hayden Book. 1975:6-211.
16. McCubbin HI. Patterson 351. The family stress process: The double ABCX model of adjustment and adaptation. In McCubbin HI. et al., eds. *Social stress and the family: Advances and developments in family stress theory and research*. New York, N.Y.: Haworth Press, Inc., 1983:7-37.
17. Rabe RH. Life crisis and health change. In May PRA, Wittenborn JR, eds. *Psychotropic drug response*. Springfield, Ill.: Charles C Thomas. 1969:92-125.
18. Lopez-Fagin L. Critical care family needs inventory: A cognitive research utilization approach. *Critical Care Nurse* 1995;15(4):421-6.
19. Wilkinson P. A qualitative study reestablish the self-perceived needs of family members of patients in a general intensive care unit, intensive and Critical Care Nursing 1995; 11(2):774-16.
20. Johnson SK. et al. Perceived changes in adult family members' roles and responsibilities during critical illness. *Image: The Journal of Nursing Scholarship* 1995;27(3):238-43.