

Turbulent Waiting: Rural Families Experiencing Chemotherapy-Induced Neutropenia

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Purpose/Objectives: To explore how rural families understand and manage the chemotherapy-induced neutropenia (CIN) experience.

Design: Qualitative, inductive approach using family interviews.

Setting: Family homes in a rural community in the midwestern United States.

Participants: A convenience sample (7 families [21 people] who had a family member experiencing CIN) recruited from a regional cancer treatment center.

Methods: Semistructured family interviews that were recorded on audiotape occurred along with constant, comparative analysis over 12 months. An interdisciplinary research team analyzed the transcribed data using grounded theory methodology.

Main Research Variable: The family experience of CIN.

Findings: An overall family process of turbulent waiting with intensified connections was revealed. Families in the study experienced a sense of vulnerability in response to the diagnosis of CIN. Intensified connections existed within and beyond the families to nurses, physicians, and community members, emphasizing the value of relationships for rural families and highlighting trust in their care providers. Waiting for chemotherapy to resume created a sense of turbulence, an unsettling time described by families as “being on a roller coaster” or “dangling.” To manage the period of waiting and protect the neutropenic patient, families developed family caring strategies, including inquiry, vigilance, and balancing. The process of turbulent waiting with intensified connections led families to a reframed family integrity that included an expanded capacity for caring and protecting.

Conclusions: Rural families understand and manage CIN in a context of vulnerability. The threat posed by cancer is heightened by CIN. Family waiting is a rich, interactive process by which families reemphasize relationships to manage neutropenia and is a process that healthcare professionals should acknowledge.

Implications for Nursing: Findings suggest the need for further investigation of family caring strategies and for the development of family-level assessment measures in the instance of CIN. Findings contribute to theory development regarding family cancer care and suggest a need to develop an intervention protocol constructed from the perspective of a family-professional partnership.

The family cancer experience involves perceptions across all points of the continuum: prevention and early detection, diagnosis and treatment, survivorship, and palliative care. Attention to best practices of care for families calls for nurses to acknowledge family responses during all phases of the life-threatening, chronic illness. Research that focuses on including the family as an integral agent of healing in cancer care is vital (Given, 2001). One of the phases that

Key Points . . .

- The central phenomenon revealed by the families was the social process of turbulent waiting with intensified connections.
- The rural families in this study experienced a sense of vulnerability in response to the diagnosis of chemotherapy-induced neutropenia that threatened the control families previously may have perceived over their situations.
- Families developed family caring strategies to manage the period of waiting.
- A reframed family integrity emerged that included an expanded capacity for caring and protecting.

requires attention is that of chemotherapy-induced neutropenia (CIN), a side effect commonly associated with many treatment protocols. Yet the family’s experience and role in managing CIN have received sparse attention in the literature.

Because the primary goal of cancer treatment is cure and cessation of abnormal cell growth, chemotherapy protocols increasingly have been targeted to interrupt multiple stages of rapid cell growth (Hayes, 2001). With the recognition that chemotherapy dosing and dose intensity can make a difference in survival rates for patients with cancer, practitioners are challenged to find methods to increase the percentage of patients treated with at least 85% of the planned chemotherapy dose

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(Bonadonna, Valagussa, Moliterni, Zambetti, & Brambilla, 1995). Neutrophil growth-stimulating factors have become an integral part of cancer treatment to maintain dose intensity. Although the use of such growth factors has met the goal of shortening hematopoietic system recovery in many cases, CIN continues to be an important and potentially life-threatening side effect of treatment (Hayes).

Historically, CIN and its sequelae were managed during inpatient hospital stays with protective isolation procedures and IV antibiotic therapy. The advent of ambulatory care options for IV delivery of antibiotic and colony-stimulating factors has reduced the incidence of inpatient care for CIN monitored by healthcare professionals. The underlying assumption of healthcare delivery systems is that patients and families now can manage CIN with little change in their normal daily activities. However, little is known about the entire family's management of neutropenia. This is a particularly significant assumption when considering rural patients, who have decreased access to information and support needed for symptom management of CIN (Winstead-Fry, 1992). A family's understanding of treatment protocol, symptom identification, and symptom management can be a major factor in treatment adherence (Champion, 2001; Gillespie, 2001; Hayes, 2001). Yet rural patients and families will continue to assume a significant role in adherence to therapy. Knowledge development with a focus on understanding neutropenic events from the family's perspective will enhance the ability of the healthcare community to respond to family needs as they evolve with challenging treatment protocols (Anderson & Tomlinson, 1992; Friedman, 1998).

The purpose of this study was to obtain a beginning perception of rural families' experience when a family member is managing CIN. Specific aims of the study were to (a) describe the process that rural families use to manage the neutropenic experience caused by cancer chemotherapy and (b) contribute to theory development regarding the family cancer experience.

Background

Families in rural areas define health, access health care, and share in treatment for illness in unique ways. Rural dwellers tend to define health as being able to do work. As a result, symptoms that do not decrease activity may be ignored until they absolutely need to be addressed. Treatment of illness may be influenced by the self-reliant nature of rural families. Conversely, rural family members may be reluctant to share in the treatment of illness because of perceptions that healthcare providers have greater positions of power and status (Winstead-Fry, 1992). Studies of rural families who had a member with cancer demonstrated that the family members had greater needs than the member with cancer (Buehler & Lee, 1992). Resources that support family coping are fewer in rural environments, and traveling distances for treatment and cancer care can become burdensome (Coward, 1990).

Medical research of CIN in the 1990s focused on managing its untoward effects, yet family involvement in the studies is not evident (Paganini et al., 2000). Tice (1998) suggested that chances of infection involving resistant bacteria appear to be reduced with outpatient parenteral antibiotic therapy. In addition, costs of treatment are reduced. Groundbreaking work in the area of granulocyte-colony-stimulating factors

(G-CSFs) revealed that critical hematologic monitoring is an integral part of growth-factor therapies (Oshita et al., 2000). Beginning efforts at collaborative monitoring and treatment of good-risk patients with febrile neutropenia in the home have been reported (Turgeon-Lanes & Randolph, 2000).

Patients with cancer report the role of family social support as significant to their healing and quality of life (Ebright & Lyon, 2002; Zacharias, Gilg, & Foxall, 1994). Levels of hope and coping are related to the ability to continue active involvement in role performance in the socially supportive family environment (Herth, 1989). In turn, family members state that they are more able to provide this significant social support to the patient with cancer when they are supported by healthcare providers (Yoder, O'Rourke, Etyre, Spears, & Brown, 1997). When supported by healthcare providers, family members choose a wider variety of coping strategies (Yoder et al.), including keeping busy, thinking positively, inquiring about the problem, providing physical help to the patient, and talking with family and friends (Raleigh, 1992; Steele & Fitch, 1996).

White, Given, and Devoss (1996) identified the family's need for information about the disease process and chemotherapy. Hull (1989) identified informational needs related to the disease, treatment, and care approaches such as comfort measures and ambulating techniques. Caregivers of patients with cancer being cared for at home (N = 15) also identified the need for support from family or friends, hope, and a sense of the future (Hileman & Lackey, 1990).

Theoretical Framework

This study was conducted in the frameworks of family systems theory and symbolic interactionism. In these theoretical frameworks, families are viewed as complex, interrelated systems that derive meaning through interaction among those in the family and between the family and the environment (Burgess, 1926; Handel, 1965, 1985). Connections exist between family systems theory and symbolic interactionist theory, particularly in how the interactions in families shape meaning. Boundaries in and around families, as well as power and control issues, addressed by family systems theory have implications for meaning derived through interactions. This may be important specifically to rural families. Study of the family's view of the world derived from the symbolic interactionism perspective has been an important element of ongoing study of families and illness (Reiss, Steinglass, & Howe, 1993).

Methods

A qualitative, cross-sectional approach with grounded theory methodology was used to learn how rural families understand and manage the neutropenic experience caused by cancer chemotherapy (Glaser & Strauss, 1967). Because knowledge in the area of family-level oncology nursing is in its infancy, analysis of the family social process surrounding CIN was an appropriate focus for this research.

Sample and Settings

The patients in the seven families studied ranged in age from 30–76 and were in various stages of the following types of cancer: non-Hodgkin lymphoma, multiple myeloma, leukemia, or

breast, peritoneal, or ovarian cancer. Families were interviewed in groups and included spouses, children, grandchildren, siblings, in-laws, and parents of the person with CIN. The family sample was 55% male and 45% female with an age range of 19–77 years. The average annual family income in the sample was \$55,000 (range = \$20,000–\$100,000). The majority of families lived in four rural counties in small towns with populations of less than 10,000.

The setting for recruitment was a regional cancer center in the midwestern United States. Eligible participants were rural family members aged 18 and older than who understood and spoke English. Families were eligible if a family member recently had been diagnosed with CIN that interrupted ongoing treatment for at least a brief period of time. The patient with neutropenia was included as a family member.

Neutropenia, for purposes of this study, was defined as a neutrophil count of less than 500 mm³. Family was defined as whomever the patient defined as family. Families were considered rural if they lived in a nine-county area in the midwestern state that did not contain a city with a population of 50,000 or more and did not live in urban areas of at least 50,000 (Office of Management and Budget, 1983).

Procedure

A staff triage nurse at the regional cancer center identified eligible families and submitted family names and contact information to the interview coordinator. The interview coordinator contacted each family, described the project, described human subjects procedures, and solicited involvement. If a family agreed to participate, the recruitment coordinator gave the family contact information to the university faculty member who arranged the interview schedule. The interview was scheduled within 10 days of the beginning of the chemotherapy cycle after the neutropenic event.

Ten families of rural patients being treated at the regional cancer center were enrolled in the study. Three patients died prior to the interviews; therefore, the families were not interviewed. This resulted in a sample of seven families represented by 21 individuals. Families, including the people experiencing CIN, were interviewed in the home setting.

Theoretic sampling was achieved by specifically targeting the full range of management processes used by families through various phases of treatment for CIN. Sampling and analysis proceeded in tandem so that the researchers discovered concepts that were present repeatedly or markedly absent when compared across families (Strauss & Corbin, 1990). The researchers remained flexible to examining new and unexplored areas throughout the process to guide the sampling in an effort to garner the greatest theoretical return. In this manner, the researchers remained focused on obtaining the full range of categories describing the process of understanding and managing CIN.

Two university researchers with expertise in interviewing techniques and caring for families conducted the interviews. One of the researchers explained the informed consent process, obtained signatures on consent and assent forms, and facilitated completion of the biographical information form for each family. The second researcher took the leadership role in initiating the interview after testing audiorecording equipment.

Protection of Human Subjects

Permission was obtained from the human subjects institutional review board at the university and the clinical setting. All partici-

pants were assured of confidentiality of responses. Confidential reporting of the findings was guaranteed to families. Because a potential existed for stimulating family process difficulties as a result of the interview process, the counseling services of either a family psychologist or a pastoral counselor were available for one family session after the research interview if deemed necessary by the research interviewers. Successive counseling sessions would have been the responsibility of the family. No counseling services were required by the study families.

Interviews

Interviews were conducted using a semistructured, interactive approach (see Figure 1). They lasted one to two hours and were recorded on audiotape. Both interviewers engaged in the interactive interviews with a focus on exploring the entire process of managing CIN.

The researchers recorded field notes after leaving a family home to note features of the interview experience such as facial expressions and body movements that enhanced data analysis and interpretation. When appropriate, follow-up dialogue was arranged with family members who were unable to attend the initial interview to incorporate their responses.

The audiotapes were processed into 432 pages of data text following a framework for coding and identifying nonlanguage elements such as laughter and pauses determined by the researchers (Sandelowski, 1995). Verbal accuracy was determined by having the interview researchers validate the transcripts.

Analysis

Data text from interview transcripts was analyzed following the constant, comparative analysis process described by Strauss and Corbin (1990). All researchers read the transcript of the first family interviewed; each researcher labeled phenomena identified in the data text as suggested by the evidence. Researcher dyads then met to review the broad array of conceptual labels each had generated and to validate interpretations. Labels were based on the immediate evidence revealed by the families about their experiences. The entire research team reviewed the labeling performed by the three dyads and assembled the labels into categories of processes, recognizing the properties of the categories and identifying the different dimensions of the properties in the categories (Strauss & Corbin). Labeling was performed to facilitate understanding of the emerging theory by nursing and medical personnel. For instance, if researchers identified a specific phenomenon but disagreed about its definition, the use of the phenomenon was investigated through review of etymologic references and the use of the term in extant literature. In this manner, the labels were analytic and sensitizing so that healthcare professionals can apply the emerging theory to their own practice

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1. Please share a bit of your family story of cancer with us.
 2. Describe what it is like to go through neutropenia as a family.
 3. What is it like to make family life modifications because of neutropenia (e.g., dietary restrictions, protective environment, ongoing evaluation of signs and symptoms, alterations in family events)?
 4. What is it like to make family decisions regarding neutropenia?
 5. Please tell a story of a significant interaction you have had as a family during the treatment time.
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Figure 1. Semistructured Interview Questions

experiences (Glaser & Strauss, 1967). In an iterative process, interview questioning and further analysis focused on evolving categories according to a theoretical sampling approach. All transcripts were reviewed on an interview-by-interview basis and data collection respectively adjusted until all pages of data text were analyzed. Group discussions regarding labels and categories were recorded into a word-processing program to track decision making regarding ongoing theory development.

Throughout the analysis, similarities, differences, and relationships among themes and categories were identified. The data then were subjected to the process of axial coding (Strauss & Corbin, 1990). Each research team member completed extensive memos and notes to highlight exemplary statements, exploring the relationships among categories. Finally, a core category, the central phenomenon around which all other categories were integrated, was identified. At this point, the analysis in the form of evolving theory was shared with a random sample of three families chosen from the interviewed families to determine the confirmability of the findings. Adjustments to the analysis were made based on the families' feedback. Finally, full research-team discussion occurred to determine how the findings could be used to formulate an assessment tool and potential family intervention protocol for use in the process of managing CIN.

Attention was directed toward establishing rigor in this study through the measures of transferability, credibility, dependability, and confirmability as detailed by Lincoln and Guba (1991). Credibility was achieved through sharing of findings with participants at several points in the analysis. Review of data text by a dyad of researchers followed by team analysis served to clarify and confirm categories. This process aided the team in the process of remaining true to the data text. In addition, conducting family interviews in the naturalistic setting of the home enhanced the credibility of the data.

All members of the research team discussed the core category and reached consensus on codes, categories, and relationships among categories. The researchers confirmed these relationships with an expert in grounded theory analysis.

Findings

The core variable, or central phenomenon, revealed by the families was the social process of turbulent waiting with intensified connections (see Figure 2). Descriptors of the families' experiences are displayed in Figure 3. The rural families in this study experienced a sense of vulnerability in response to the diagnosis of CIN that threatened the control families previously may have perceived over their situations. The forced interruption in treatment was a time to reemphasize family relationships as important because CIN was a clear reminder of potential mortality and the need for family to be connected. Families developed family caring strategies to manage the period of waiting. These strategies included family inquiry, family vigilance, and family balancing. The process of turbulent waiting with intensified connections led families to new ways of understanding themselves. Ultimately, a reframed family integrity emerged that included an expanded capacity for caring and protecting.

Neutropenia as Vulnerability to Cancer

Families described the experience of CIN as a time of heightened awareness with an increased sense of vulnerability. CIN meant that hope for a cure was tempered. They learned

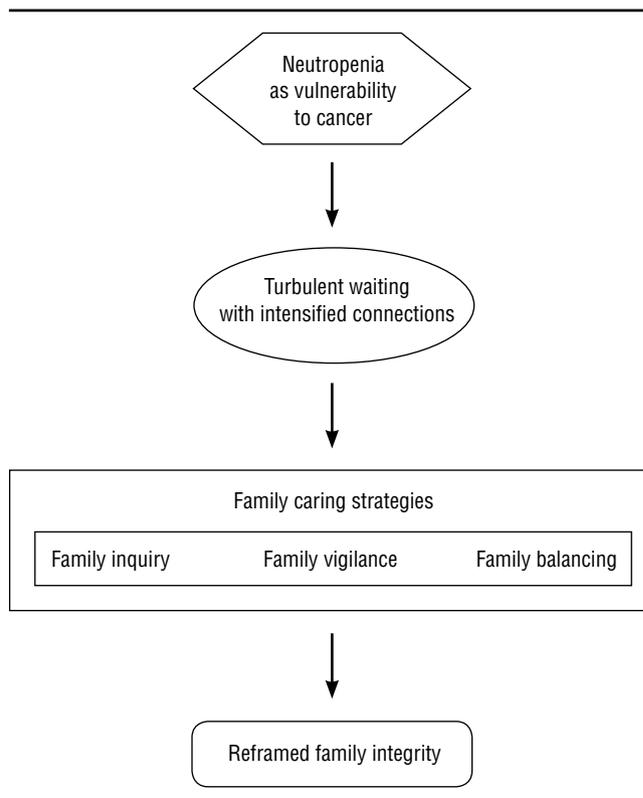


Figure 2. Model of Families Experiencing Chemotherapy-Induced Neutropenia

about what low counts meant and about the need to “wait with chemo until the counts were up.” A neutropenia diagnosis meant that families temporarily had to readjust their “hopes for the future.” While the patients were “sailing through” “the lifeline” chemotherapy protocol, families were able to keep the threat of cancer at bay. Once neutropenia was diagnosed and chemotherapy was interrupted, however, families and patients were “living under a cloud” and “waiting for the other shoe to drop.” “Waiting for the lab draw” and “failing the lab draw” were common experiences that prompted families to mobilize and attempt to control their sense of vulnerability. Families learned what a “good count” was as interpreted by their healthcare providers and when patients were able to resume chemotherapy. Families also shared feelings of powerlessness over the patient’s responses to the pattern of CIN, which included “exhaustion,” “wearing down,” “feeling down,” fever, transient “memory loss,” and the fall and rise of cell counts in response to chemotherapy.

A 60-year-old man shared that he had felt bad when he had his first neutropenic episode. He wondered, “What did I do wrong?” He was somewhat reassured when the nurses told him that the chemotherapy caused the neutropenia, not anything he was doing wrong.

Turbulent Family Waiting With Intensified Connections

Families described turbulence in their family systems as an unsettling time of uncertainty that presented itself as “being on a roller coaster” and “dangling.” Waiting often required changes in existing family processes and patterns that created a sense of turbulence. While waiting, families

Neutropenia as vulnerability to cancer

- Heightened awareness
- Powerlessness
- Mobilized attempts to control

Turbulent waiting with intensified connections

- Unsettling time of uncertainty
- Changes in existing family processes
- Connecting intensely
- Deepened trust

Family caring strategies

- To gain control
- To formulate understanding
- To establish a protective environment
- Family inquiry
 - Information seeking
 - Appraising meaning
 - Hindered access
- Family vigilance
 - Monitoring symptoms
 - Protection rituals
 - Conflict with work role
- Family balancing
 - Ongoing roles with needs for changes during low counts
 - Activities with low counts
 - Uncertainty with understanding

Reframed family integrity

- Honest expression
- Enhanced sense of humor
- Desire to help other families
- Strengthened spirituality
- Enhanced self-sufficiency and ability to protect

Figure 3. Descriptors of Families Experiencing Neutropenia

described connecting intensely by telephone, e-mail, going to movies together, and developing rituals that surrounded the patient while waiting to “get the counts done.” One family described going to the city bookstore after each treatment or laboratory count as their ritual, regardless of the outcome. Furthermore, families reported using telephone conversations to share news regarding CIN with members who lived far away. Families also gave detailed descriptions of connections with their oncology doctors and nurses and of forming partnerships in caring. These were people they came to trust, who helped them through their waiting. Having a consistent person for a family to connect with in the healthcare setting enhanced the family’s trust and contributed to the understanding of treatment for CIN. Intensified connections extended beyond the family to community members who served as a resource to help the family manage. For instance, some families appreciated “being prayed for.” Friends, work colleagues, neighbors, nurses and doctors, and social groups maintained connections with the neutropenic patients.

Family Caring Strategies

Three major social processes were devised as family caring strategies to manage the period of waiting: inquiry, vigilance, and balancing. The goal of family caring strategies was to gain control, formulate understanding, and establish a protective environment while preserving the integrity of the family.

Family inquiry: All families exhibited forms of inquiry, including information seeking, questioning healthcare provid-

ers, questioning other families dealing with neutropenia, and appraising the meaning of situations. Appraising sometimes meant intellectualizing the situation, critiquing the quality of care, weighing the chances for survival or death, and searching out what diagnostic information meant. Inquiry was affected by the need to travel to multiple clinics for different aspects of care (e.g., one clinic for the blood draw, another for chemotherapy). This made connecting with one consistent information-giving team difficult. Families described the difficulty in accessing the healthcare setting to have the patients’ low counts monitored frequently because of the rural setting. The ineffectiveness of technologic communication (e.g., phone, electronic) also was a barrier to inquiry. Families also demonstrated appraising by altering goals or finding new ways to pursue dreams in the presence of CIN while hoping for a positive outcome. For instance, one family kept a journal of all counts and symptoms and then recommended a change in treatment protocol to maximize freedom to travel.

Family vigilance: Family vigilance emerged as a strong family process to protect the family member with cancer. Strategies of vigilance were such things as monitoring symptoms, planning activities, protecting from outside threats of illness, and persistently advocating for effective neutropenia management. Families protected patients by maintaining the physical family boundary when patients were afraid of getting an infection. Families developed mild to intense rituals of protecting, such as “washing all the doorknobs after the grandkids left,” “not eating at salad bars,” “walking out of a room if someone was coughing or had a drippy nose,” and being “under house arrest.” One family member acknowledged that the patient “wearing the mask” wore it as a “badge of courage” and that it helped to identify the patient “as sick as she feels.” Going to the movies meant choosing to go in the afternoon instead of the evening because matinees are less crowded and, therefore, potentially less germ-laden. Some families reported that the neutropenic patient’s “need to work” or “be productive” sometimes created family conflict. Even though the work role provided purpose and enhanced coping for the patient, the family felt powerless to protect the patient.

Family balancing: Family members enacted a variety of roles to balance the situation. For instance, one brother described being the “social coordinator,” providing “at-home entertainment” for his sister during neutropenia so that she did not need to go out but could experience home as enjoyable. Patients with CIN described having overwhelming energy depletion, and families drew together to support the daily physical and household needs of the patients. Families maintained family functions during low counts and “learned the lingo of counts” so that they could track neutropenia and what it meant for activity planning. Some families took the lead in recording the ongoing neutropenia so they could plan short vacations around the anticipation of “when the counts would be up.”

Uncertainty arose and balance was threatened when nurses did not attend to the families’ needs to understand their roles in CIN. When they understood their roles, they were more confident about managing the illness, which contributed to their ongoing independence and is crucial to the rural family’s identity. Receipt of inconsistent messages regarding neutropenia treatment strategies compromised the families’ sense of confidence. They were relieved when nurses socialized them to their roles in managing CIN. Families reported

that when they learned their roles, such as understanding the norms, “learning the lingo of counts,” and maintaining family functions during low counts, they were more confident in managing CIN in their rural settings.

Reframed Family Integrity

Families related “coming closer together” as a result of the experience prompted by CIN and their ability to “challenge the cancer,” “embrace life,” and “find [their] way back from losing time.” Families recognized the value of honest expression as an outcome of the experience, even though facing mortality was difficult. They described strengthened spirituality, an enhanced sense of humor, and a desire to help other families, particularly with symptom control. These new ways of viewing themselves contributed to their sense of self-sufficiency and the ability to protect in a context of vulnerability.

Discussion and Implications

This study identified several pertinent family variables. A discussion follows regarding how the variables contribute to the development of theory for family nursing with a specific focus on the CIN situation surrounding rural families experiencing cancer. In addition, the study findings support and extend research in the family arena and suggest directions for nursing practice and research.

Vulnerability

Vulnerability at the individual level has been defined as a state of being unprotected and unguarded; managing vulnerability has been labeled as a psychosocial process that nurses have used to assist vulnerable individuals (Chenitz, 1989). Chenitz concluded that managing vulnerability requires ongoing monitoring and control of the nurse-client interaction by the nurse. The building of trust between nurse and client is central to such management. This study extends Chenitz’s work to the family level. If families are declaring a sense of vulnerability with the CIN experience, then managing vulnerability may be essential in the provision of family care in this population. If a family needs to manage vulnerability, a nurse could focus interventions on issues of assistance to vulnerable individuals such as monitoring, problem solving, and limiting setting to stabilize the routine surrounding treatment.

Waiting

Jewell and Abate (2001) defined waiting as deferring action until some event occurs, which is congruent with the findings of the current study. Critical attributes of waiting found in research literature are uncertainty and loss of control (Irvin, 2001; Locsin & Matua, 2002). The roller coaster metaphor identified by families in the current study is similar to the constant changes and uncertainty described by Brown and Powell-Cope (1991).

Intensified Connections

The intensified connections identified in this study have similar properties to the caring partnerships in families described by Lynam (1995) as family work. In addition, intensified connections as described in the current study between families and their oncology nurses and physicians are similar to the caring partnerships described by Harvath et al. (1994).

This is contrary to the belief that rural families may distrust healthcare providers because of power or status issues. The connections created through interactions between family members and their care providers had a positive influence on the families’ management of CIN. The intensified connections relate to Meiers and Tomlinson’s (2003) description of significant interactions between nurses and families in a pediatric intensive care setting, a phenomenon of family-nurse co-construction of meaning. Healthcare professionals who acknowledge the importance of these connections will create more effective family interventions that have the potential to enhance family management of neutropenia.

Family Caring Strategies

Families in this study found that developing family caring strategies was necessary to help their systems manage the waiting of CIN. Findings suggest that inquiry is a central process of caring enacted by families to manage neutropenia. Inquiry was highlighted by Wuest and Stern (1990) as a central process used by a family managing a child’s illness. Furthermore, Jerrett (1994) illuminated “struggling to know” (p. 1053) and “taking charge” (p. 1054) in the process of parents learning to care for their chronically ill children. Appraising the meaning of the neutropenic situation by families in the current study as an aspect of inquiry is not unlike families’ construction of meanings in illness (Hartman, 1995; Yates, 1999). Nursing approaches that support family inquiry may enhance the ability of families to care for the neutropenic member.

Vigilance is a family process that is evident in acute healthcare settings (Carr & Clarke, 1997; Carr & Fogarty, 1999). The interpretation of vigilance in the current study is not unlike the commitment to caring described by Carr and Clark and Carr and Fogarty. The current study extends the understanding of family vigilance beyond the acute care setting to the ambulatory care setting.

Family actions of balancing are directed at preserving the integrity of the family while honoring the needs of the affected individual family member. This is similar to other terms in the literature: family management (Knafl, Breitmayer, Gallo, & Zoeller, 1996), negotiating the journey (Bunting, 1996), and family work (Lynam, 1995). Families experiencing CIN also chose balancing actions that were targeted specifically at the sense of vulnerability felt in turbulent waiting. Of note is the families’ ability to balance low counts and the threat they present to normal family roles and social functioning.

Reframed Family Integrity

Reframed family integrity in this study is similar to the idea of the family’s ongoing construction of reality described by Reiss (1981). Construction of reality surrounding family management of illness is evident in the works of Mishel and Murdaugh (1987) and Clarke-Steffen (1997). The authors indicated that families change perceptions of normal to meet the challenge of living with the long-term unpredictability of illness. Of importance is that families continued to be guided by rural values of work and productivity.

Implications for future research include investigation of the family caring strategies used by the participants of this study to reframe family integrity. Specific types of family waiting may exist, and understanding these types would support targeted family assessment. Family-level assessment instruments

and family cancer care protocols should be developed and evaluated. A randomized clinical trial designed to evaluate family-level interventions for symptom management of CIN has potential for enhancing family management. Further investigation of interactions between families and healthcare providers has the potential to illuminate the factors that promote family management of the illness experience and barriers that hinder such management. Continued effort is needed in the area of symptom management in cancer care, and approaching symptom management from a family-professional partnership perspective may enhance excellence in cancer care.

Limitations

The sampling criteria that required that a patient have a neutrophil count of less than 500 mm³ may have identified a sample not representative of many patients experiencing CIN. In addition, the mean income of participant families was \$55,000, whereas the average family income is \$35,000.

Finally, the sample had a limited number of families with young children.

Conclusion

Rural families understand and manage CIN in a context of vulnerability. They understand the ever-present threat posed by cancer and heightened by CIN. Turbulent family waiting emerged as a process used by families to manage CIN. Healthcare providers who give consistent support and information are valued and trusted by rural families. Connections with healthcare providers have a positive influence on a family's sense of trust in cancer care. Nurses who are sensitive to these factors can enhance the excellence of symptom management in cancer care for rural families.

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