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# Creativity in the Practicing Home Care Nurse: An Exploratory Descriptive Study

by

Barbara L. Tarnowski

A Thesis

Submitted to the Faculty of Graduate Studies and Research

in partial fulfillment of the requirements for the degree of

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Faculty of Graduate Studies and Research

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research for acceptance, a thesis entitled **Creativity in the Practicing Home Care Nurse: An Exploratory Descriptive Study** submitted by Barbara Tarnowski in partial fulfillment of the requirements for the degree of Master of Nursing.

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**Abstract**

An exploratory descriptive study using a qualitative research design was conducted to study creativity specific to the domain of nursing practice. Six practicing home care nurses in rural Alberta were interviewed to gather examples of clinical experiences that the nurses thought were creative. Transcripts of the audiotaped interviews were analyzed using concept analysis (Avant, 1993; Walker & Avant, 1995) and open, axial, and selective coding (Strauss & Corbin, 1990) techniques.

The nurses' creative experiences arose from diverse, ambiguous situations where client characteristics and limited resources prevented routine or conventional approaches. In devising strategies to solve these problems, the nurses employed creative problem-solving behaviors that required balancing interacting intrinsic and extrinsic factors appropriate to the situation and task. Intrinsic conditions conducive to creativity were skill in a wide range of thought processes; knowledge acquired through clinical, educational, and personal life experiences; and personality dimensions of openness, inclination toward diversity, confidence, personal balance, sensitivity, and intrinsic motivation. Facilitative extrinsic conditions included the presence of creative challenge, as well as an open, flexible climate that tolerated risks and provided unexpected, appropriates rewards; time; opportunity to collaborate; and exposure to creative role models.

The strategies resulting from creative problem solving were unique, practical adaptations or syntheses of elements drawn from past experience. Personal and professional growth and enhanced work satisfaction were indirect outcomes of the creative experience. Further research as well as recognition and support of creativity can benefit client care outcomes, nurse satisfaction, and the advancement of clinically relevant nursing knowledge.

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No achievement is truly the sole claim of one individual, for it is through the cumulative experience, knowledge, and support of others that not only are possibilities realized, but realizations are also enriched. Thus, I was not alone in the accomplishment of this thesis, but was privileged to receive encouragement and help from many people. Some of the people who share in my achievement merit special recognition.

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I am also grateful to the University of Alberta Faculty of Nursing and the Alberta Association of Registered Nurses who, in the provision of funding, not only eased the financial burden, but also validated the merit of research related to creativity in nursing. Also, I am grateful for the expertise

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# CHAPTER 1

# INTRODUCTION

We often associate creativity with eccentricity and genius, with the artist, novelist, or scientist. However, creativity permeates our lives in many facets. Margaret Mead stated: "To the extent that a person makes, invents or thinks something that is new to him *[sic],* he may be said to have performed a creative act" (Grainger, 1991, p. 14). Creativity can be found in many aspects of our daily lives, in acts of discovery, change, adaptation, and problem-solving. Our lives are changing radically in modern times. Burgeoning knowledge and technology, declining resources, and a global village that is more easily and rapidly accessible have hurled us into times of rapid change and increasing complexity, times of "permanent white water" (Vaille; as cited in Winslow & Solomon, 1993, p. 75). Flexibility, independence, and creativity are among the attributes that futurists and leaders predict will be necessary for success in these times (Holbert & Thomas, 1988). Nursing as a discipline is not isolated from these trends. With the direction in health care shifting away from the institution to the community (Banning, 1993; Hammond & Gourlay, 1993), toward more holistic, individualized care, and toward increased independence in practice (Alberta Nurses Association, 1993; Hammond & Gourlay), creativity takes on expanded and new importance for nurses.

## Theoretical Development of the Concept of Creativity

The concept of creativity has been considered most extensively in the disciplines of philosophy, psychology, education, sociology, and anthropology (Piirto, 1992). In an attempt to understand the concept of creativity theoretically, a multiplicity of perspectives, definitions, and explanations has evolved. Researchers, in approaching the study of

creativity, have predominantly focused on one or more of the following frames of reference, commonly recognized among creativity theorists as the four Ps: *product, process, person,* and *press*. Although in the past these components have been studied separately, the most comprehensive and reasonable approaches to understanding creativity integrate the four components in a dynamic, nonlinear way.

Creativity is most easily recognized and observed through its *product*. Products of creativity represent the tangible, observable results of an illusive and intangible process and as such have often been the focus of many creativity studies (Amabile, 1989; Torrance, 1994). The *process* of creativity has been studied in terms of the physiological as well as operational behaviors or activities that have resulted in creative works. A perspective focusing on the *person* involves an examination of the distinct traits and faculties that make up the creative individual. The final P, *press*, represents the contextual or environmental influences on creativity. Two dimensions relating to environmental influences on creativity are apparent: (a) the conditions conducive or inhibitory to creativity, and (b) the role of the culture, society, or discipline in determining that a product or person is creative.

Many theorists and academics have agreed that creativity is domain specific, which means that it is largely defined, encouraged, and judged by the social or cultural environment in which it exists (Amabile, 1983, 1989, 1990; Csikszentmihalyi, 1990; Harrington, 1990; Magyari-Beck, 1990). The delineation of what constitutes creativity in the person or what is a valuable and excellent creative outcome is primarily based on the current values, norms, and standards of the relevant culture, whether that be an organization or group, a discipline, or a society. Csikszentmihalyi recognized

the power of the social environment in determining which persons shall be deemed creative when he stated that "creativity is not an attribute of individuals but of social systems making judgments about individuals" (p. 198). About the creative product, Amabile (1983) wrote: "Creativity is culturally determined, with the degree of creativity of a product being dependent on its acceptability and value to the individual and to society" (p. 31).

## Theoretical Development of the Concept in Nursing

Creativity as it relates to nursing evolved as an interest of mine after I undertook studies in the visual arts. I perceived similarities between how I approached my artwork and how I approached my work as a nurse. I saw parallels between the experiences involved in creating a painting and those in caring for clients: the intensity of involvement; the powerful, exciting moments of discovery within each unique situation; the interplay of mental processes between those that were spontaneous, intuitive, and emotional and those that were rational, analytical, and logical. I also believe that my experiences in the arts enhanced my nursing practice by enabling me to understand and appreciate more fully the client's perspective and situation in that I could better appreciate complexity and diversity. It also seemed that in being able to appreciate the complexities of caring for clients, to recognize continually that which was new or unique in a situation, I found my nursing practice more interesting and satisfying. I wondered if these perceptions were shared by other nurses. What exactly is the nurse's perspective on creativity in clinical practice? What is it that nurses do that is creative?

It is apparent from the literature that creativity is a quality that is needed and desired for present and future nurses to provide optimal,

individualized care and to cope with the realities of economic constraint, health care reform, and turbulent times. Cournoyer (1990) stated that "the issue of creativity and professional nursing practice is an area urgently requiring further investigation" (p. 582). Although much has been written about how creativity can be promoted in nursing education and practice, and many viewpoints have expressed the benefits of creativity to nursing, the concept of creativity as it specifically applies to the discipline of nursing remains virtually unexplored. Many of the ideas about creativity in the nursing literature have been adopted carte blanche from other disciplines. Given the domain-specific nature of creativity, it seems imperative that the concept of creativity be examined from a nursing perspective.

Furthermore, little is known about creativity as it is exercised in clinical nursing practice. Cournoyer (1990) cited a review of nursing research on creative problem solving by Eisenhauer and Gendrop that illustrated the paucity of studies involving clinical nurses. Of 21 investigations regarding creativity in nursing conducted between 1953 and 1988, only 144 of a total of 5,456 subjects were registered nurses. The only other study found that pertained to registered nurses was a quantitative study conducted by Pesut (1988) to determine the self-perception of creativity in nurses. As well, there has been no evidence in the research literature that creativity in nursing has been explored from an emic perspective, as viewed from the experiences of clinical nurses. This perspective would elucidate creativity as it is applied and defined in clinical nursing practice.

Morse (1994b) noted that nursing knowledge has been largely adopted from other disciplines and urged that nursing must develop a theoretical base that is appropriate and meaningful to the realities of the

clinical setting. Benner and Wrubel (1982) also asserted that clinical knowledge gained from the lived experience of nursing practice needs to be recognized, valued, and shared by nurses. Such knowledge about the creative experiences of nurses would have implications for nursing practice in promoting, utilizing, and enhancing the creative ways that nurses deliver care; for nursing education in preparing creative practitioners; and for nursing administration in providing environments that are conducive to creative activity.

Sternberg (1988) advised that when a concept is poorly understood, initial exploration of people's implicit theories or conceptions of the phenomenon is helpful in defining the core and boundaries of the concept. A clear understanding of how nurses conceive creativity is needed to provide a specific, sound basis for the development and evaluation of approaches and theories that enhance and promote creativity in the discipline.

The purpose of this study, therefore, is to explore how creativity is manifested in nursing practice, as it is perceived by home care nurses.

## Research Questions

Based on the above discussion and defined problem, the research question for this study is:

In what ways does creativity manifest itself in the experiences of practicing home care nurses?

Underlying questions include:

How do home care nurses define creativity ?

What types of situations or outcomes demonstrate creativity in home care nursing practice (the creative product)?

What components in the nurses' creative experience can be identified (the process)?

What intrinsic factors influence creativity (person)?

What extrinsic factors influence creativity (press)?

## Research Design

### Method

Qualitative research is useful when little is known about a phenomenon, when an emic perspective is desired, and when one wishes to view all aspects of the phenomenon, including the context in which it is found (Field & Morse, 1985). Therefore, an exploratory descriptive approach, using qualitative research methods of data collection and analysis, was utilized to examine this research problem and question. A general description of the research design and implementation follows, with more specific information provided in the succeeding chapters.

### Selection of Participants

Investigation of creativity in a mixed group of nurses would introduce a multiplicity of variables. Furthermore, creativity may be experienced and defined differently by different subspecialties within the discipline of nursing. Therefore, to maintain the data at a manageable, comprehensible level, a single subspecialty, home care nursing, was chosen for the study. The decision to explore creativity in home care nurses was made for a number of reasons. One objective of participant selection in qualitative research is to obtain participants who will provide a rich resource for data (Field & Morse, 1985; Robertson & Boyle, 1984). Because the home care nurse is faced with a unique situation within each home visited, there is great opportunity to be creative in planning and delivering nursing care (Demetrulias & Shaw, 1985). Boyle and Letourneau (1995) listed as primary competencies in community-based nursing practice skills that deal with diversity and high levels of ambiguity, skills that are closely linked to

creativity. Also, as a result of the present radical health care reform in Alberta that includes an increasing incidence of early discharge and a shift of care from the hospital to community settings, the opportunities for creativity in home care nursing have taken on new, expanded dimensions. In that the nurses targeted for this study worked in rural and small-town settings, it was perceived that they might face additional creative challenges in terms of less availability of the conventional health resources that could be found in urban centers.

Selection of home care nurses for the study was also advantageous in relation to this researcher's relative lack of familiarity with home care nursing. Spradley (1979) recommended that ethnographers study unfamiliar cultures in order to be sensitive to what might be taken for granted by someone within the culture. As well, participants might be more willing to teach the naive researcher about the culture. On the other hand, this lack of experience could have potentially hindered my acceptance into the group because I may have been viewed as an outsider to the culture (Morse, 1994a). However, this did not appear to be a barrier. My long-term status as a nurse in acute care and nursing-education settings gave me credibility and background knowledge that was instrumental in understanding the terminology and common experiences shared in all areas of nursing. My background also allowed me to comprehend the nurses' descriptions of their experiences in home care in comparison to those found in hospital settings.

Selection of participants for this study was done on a voluntary basis. Criteria for participation in the study included:

1. Home care nurses who were currently providing direct care to clients for at least 50% of their workload. Spradley (1979) recommended current involvement as a criterion for participants, because their knowledge

of the cultural phenomena is easily recalled and their perception remains consistent with the current culture being studied.

2. Participants who were willing to express their experiences and ideas openly and fully. Although it was expected that the home care nurses who volunteered for the study would meet this criterion, those who could reflect upon their experiences and express themselves well would be the participants of choice. It should be noted, however, that this criterion was not intended to exclude those nurses who were quiet and reflective. A mixture of verbal and outgoing as well as quiet and thoughtful participants would ideally be sampled for this study (Field & Morse, 1985).

3. Participants were registered nurses with at least six months of experience in home care nursing. Benner and Wrubel (1982) suggested that experience is not gained through a measure of time, but rather, through encounters with actual practical situations. Therefore, it is difficult to set a concrete time frame to define *experience* operationally for this investigation. Because it is perceived that it takes a minimum of six months for a nurse entering the field of community nursing to practice effectively (Boyle & Letourneau, 1995), setting the criteria at six months was intended to exclude personnel who were not yet sufficiently familiar with the field of home care nursing.

Once administrative permission for the study was obtained and ethical review cleared (see Appendices A & B), two nursing supervisors, contacted by telephone, willingly agreed to distribute letters of invitation (Appendix C) to individual home care nurses in seven offices in one health care region outside the city of Edmonton. Because no response was elicited by the letters of invitation, an oral presentation explaining the study was also offered at six sites within the same region. Brief information about the

purpose and nature of the study as well as the anticipated expectations of participants was shared during these sessions. Interested participants could choose to volunteer at that time or contact me by telephone.

**Sample**

During the presentations, many nurses expressed an interest in the topic of creativity, offering their ideas and referring the names of nurses whom they thought were creative. Six nurses volunteered to participate at the time of the presentations and one nurse who had not attended a presentation but had heard about the study from a colleague telephoned to volunteer later.

All seven volunteers met the criteria for the study. The six participants chosen for the study worked in five different offices with a rural and small-town clientele who spanned a wide range of socioeconomic and situational backgrounds. The nurses ranged in age from 27 to 47 and had 1 to 14 years of home care experience. Three of the participants were employed full-time in home care and three, part-time. All had previous and/or current experience in other areas of nursing, including acute care hospital settings, administration, psychiatry, rehabilitation, midwifery, pediatrics, and extended care facilities. The total number of years each participant worked in nursing ranged from 5 to 25 years. Three of the participants had attained nursing diplomas, and three had undergraduate nursing degrees. None had pursued formal education at a graduate level or in fields outside of nursing. See Appendix G for full demographic information.

All participants expressed a keen interest in participating in the study, stressing that they perceived this to be an important topic. However, the two nurses who had worked in home care for the shortest length of time

expressed uncertainty about their ability to contribute because of their lack of experience. They proved to be valuable sources of data, providing a different perspective from those of nurses with extensive experience.

## Data Collection

Although questions varied during the interviews to allow freedom for participant responses and flexibility in accordance to the needs of data analysis, general guiding questions (see Appendix D) ensured comprehensive exploration of significant aspects of the research problem and efficient use of interview time (Field & Morse, 1985). Interview techniques and descriptive, structural, and contrast questions as described by Spradley (1979) were utilized. Questions focused on participants' descriptions of situations where creativity was applied. Spradley emphasized the importance of asking questions about use, rather than meaning, to elicit more detailed descriptions and information about relationships between phenomena. As the processes of data collection and analysis progressed, questions were changed or added, and follow-up interviews were arranged to expand upon or to clarify or verify information emerging from data analysis. Prior to interviewing the participants, the interview techniques and questions were practiced and tested on a friend who had recently worked in the field of home care nursing.

Participants were involved in two face-to-face interviews, with each interview lasting approximately 60 to 120 minutes. All interviews were tape recorded. The place of interview was decided by the participants. Although the majority of interviews occurred in the respective home care offices, three interviews took place in participants' homes and one, at the request of the participant, in a quiet restaurant. Initial interviews focused on the nurses' descriptions of their creative experiences. Second interviews

expanded and clarified specific aspects, explored atypical experiences, and validated findings that arose from the data.

Prior to the first interview, written consent was obtained (see Appendix E), and the participants were requested to complete a structured form outlining potentially relevant demographic information (see Appendix F). Field notes, or written accounts of my observations and thoughts while collecting data, were maintained for the duration of the study in order to provide information about nonverbal events and contexts (Field & Morse, 1985). Also, a diary of my subjective reflections, biases, and impressions was kept. This diary assisted me in becoming aware of and accounting for intuitive thoughts and personal, subjective factors during analysis and interpretation of the data. As well, it was of particular value in keeping track of possible biases resulting from my own experiences and beliefs about creativity.

**Data Analysis**

Spradley (1979) defined *qualitative analysis* as "the search for the parts of a culture and their relationships as conceptualized by informants" (p. 93). In this particular investigation the parts of the culture explored were the situations, behaviors, and surrounding circumstances found in the examples of creative nursing practice described by home care nurses. Following verbatim transcription of interviews, analysis was begun by reviewing the transcripts with the audiotapes to ensure accuracy, taking note of relevant nonverbal information. By doing so, with concurrent review of the other sources of data (demographics, field notes, researcher diary), I gained familiarity with the data. Patterns and recurring themes were noted. The interviews were then coded and analyzed with the aid of a

computerized word processing program, *Word Perfect 5.1* (Field & Morse, 1985; Norman, 1989, Weitzman & Miles, 1995).

Coding involved line-by-line examination, marking, and extracting of the transcript data into recurrent themes and phrases. As analysis progressed, categories were defined, refined, and further divided; and relationships between the categories were investigated. Data analysis and collection occurred simultaneously so that information sought in the interviews built upon what was being discovered during analysis. The process of constant comparison, which is the continuous examination of the data for differences and similarities within and between data sources, was an integral aspect of the analysis (Field & Morse, 1985). Comparisons and links were also made with theories and information found in the literature. By the end of the second round of interviews, no new categories of significance were emerging from the data.

Although it was clearly not the intent of this study to create a grounded theory, certain aspects of grounded theory described by Strauss and Corbin (1990) were instrumental in understanding the concept of creativity as related to the experiences of the home care nurses. Open coding techniques were instrumental in identifying themes emerging from the data as categories and subcategories. In order to discover relationships between the categories and subcategories, axial coding methods were used to organize the categories and subcategories into the grounded theory paradigm model. This paradigm model is comprised of the following components: (a) antecedent conditions, or those circumstances that give rise to the phenomena; (b) action/interactional strategies, which are the events that occur in response to the antecedent conditions; (c) context, the conditions and factors within the immediate situation in which the

phenomena occur; (d) intervening variables, conditions within the broader context within which the phenomenon occurs; and (e) consequences or outcomes of the situation. Some aspects of selective coding, such as storyline writing, also were instrumental in reintegrating the themes into an integrated description of the nurses' creative experience in order to define core or central patterns and motifs.

Prior to the study I conducted a concept analysis of creativity in nursing, using techniques described by Avant (1993) and Walker and Avant (1995), based on an extensive literature review and personal experiences (Tarnowski, 1995). This concept analysis was helpful in bracketing my own beliefs and viewpoints, better enabling the identification of researcher bias during data analysis. Concept analysis techniques were also instrumental during earlier stages of the data analysis in identifying the defining attributes or properties of creativity, as well as identifying antecedent conditions and consequences in the nurses' experiences. Near the completion of data analysis, the concept analysis was again reviewed and compared to the findings of the study to identify any gaps that required further exploration and to determine if the findings were reasonable and theoretically supported by the literature.

Writing is a powerful tool for analysis. Spradley (1979) actually referred to writing as "a refined process of analysis" (p. 94). Memos, or written accounts of the thought processes that have driven the analysis, were utilized as one technique of analysis through writing. I found that articulating the findings and discussion in written form for the purposes of this thesis resulted in major thought, rethought, and clarification of what had been previously found during coding and categorization of the data.

This proved to be most valuable for critically examining and concretizing the research findings into meaningful, accurate conclusions.

**Methodological Rigor (Reliability and Validity)**

Methodological rigor was considered in terms of *credibility, fittingness, consistency,* and *confirmability,* as described by Sandelowski (1986). Credibility, or the faithful interpretation and representation of the participants' experiences in the research, was maintained by (a) conducting a pilot interview to test the merit of the questions and my capabilities as an interviewer; (b) avoiding premature categorization; (c) grounding categories and exemplars in terms that are directly quoted from the data as much as possible; (d) constantly comparing data across all sources; (e) tracking researcher biases and influences by way of a researcher diary, memos, and concept analysis; and (f) utilizing thesis supervisors and committee members as content and research methods experts to guide and verify procedures and interpretations. Knowledge of my background in fine arts was a factor that potentially could influence participant responses by spurring preconceptions that creativity is a phenomenon exclusive to the realm of fine arts. Therefore, this information was withheld from the sample population during data collection.

Fittingness is achieved when the research findings "fit" or are meaningful and applicable in contexts outside the study situation (Guba & Lincoln, 1981; Sandelowski, 1986). The following measures were carried out in order to achieve fittingness: (a) One member of the thesis committee who has extensive background in home care nursing was periodically consulted during the study and reviewed the findings to ensure relativity of the findings to the field of home care nursing; and (b) nursing colleagues

and other members of the thesis committee were consulted regarding the fittingness of findings in relation to the general discipline of nursing.

Sandelowski (1986) described consistency in terms of auditability. Auditability represents the ability of other researchers to understand and follow the decision trail of the research and to come to similar conclusions. A clear and comprehensive audit trail was developed through contextual, methodological, analytic, and personal response documentation, as suggested by Rogers and Cowles (1993). This involved dating and preserving all significant materials generated throughout the research process (audiotapes, participants' diaries, transcripts, structured forms, coded and categorized materials, and the researcher's diary). Categorized data and lists of categories included memo comments as refinements and changes occurred. Additional memos summarizing the findings and ideas in relation to the literature, as well as field notes and diary entries, were compiled in a notebook. The consistent keeping of diaries and memos was one area where I felt most challenged. I found it difficult to break from the intense and interesting process of data analysis to record what was happening and how I was feeling during the process. Also, as a novice researcher, it was difficult to discern what thoughts and feelings were significant enough to note, and I had not established a systematic approach to organizing memo and journal entries. Often, thoughts written on scraps of paper during data analysis scattered the floor of my den, and memo notes remained within computer files, rather than being transferred to the pages of my notebook. It is hoped that the dating and saving of categorized data and category lists on an ongoing basis and the inclusion of memo comments that rationalized and justified refinements and changes provided a retrievable audit trail.

Confirmability is the qualitative counterpart of neutrality or objectivity in quantitative research. According to Sandelowski (1986), measures to ensure credibility, fittingness, and auditability, as discussed above, will establish confirmability.

**Ethical Considerations**

Ethical clearance for the study was completed prior to beginning the investigation (Appendix B). Because participation in the study was voluntary and informal verbal consent to participate was established prior to each contact with the participants, the risk of coercion was low. Informed consent was obtained from all participants in the study. This involved provision of written and verbal information that described the purpose and procedures of the study, what was expected of participants, and the potential risks and benefits (Appendices C and E). The information also emphasized that participation was continuously voluntary in that participants had the right to ask questions, refuse to answer particular questions, or terminate participation at any point during the study. This information was provided during initial contact with the sample population and to interested volunteers prior to written consent (see Appendix E for consent form, which includes the written information given to participants).

Confidentiality of the participants was maintained in that only the transcriber, thesis committee members, and I had access to the raw data (structured forms, interview tapes, transcriptions, field notes, researcher diary, schedules, and coding information). Consent forms and other documents that may have identified the participants were kept solely by me. All materials will be kept for seven years, then will be destroyed. Anonymity was achieved by the use of pseudonyms or coded numbers for the transcripts, data analysis records, and final reports. Anonymity of the

agency was similarly maintained by withholding its name and specific location in transcripts and reports.

There are no perceived risks to the participants of this study. Benefits arising from the study will be elaborated upon in subsequent sections of this thesis. Although many benefits arising from the research will most likely be indirect, some participants felt that their involvement in the study and discussion of creativity with their colleagues as a result of their participation increased the awareness of creativity within the home care office. Because the literature indicated that self-awareness of creativity enhances creative performance and leads to increased work satisfaction (Pesut, 1988; Petkus, 1996), the nurses involved may derive some positive benefits.

It is hoped that this study will benefit the discipline of nursing by providing information that will add to knowledge about creativity in nursing. A clear understanding of how creativity is defined and demonstrated in one area of nursing practice will begin to build a foundation for the development and evaluation of approaches that enhance and promote creativity. An oral or written summary of the research findings will be offered to the participants as well as to the other personnel in the study settings. Information will be shared with the wider nursing population by the dissemination of the thesis to appropriate locations, by submission of written articles to relevant journals for publication, and by posters and/or oral presentations at relevant nursing events.

## Thesis Presentation of the Study

Because of the need for research literature on this topic, the body of this thesis will be comprised of three papers intended for publication in specific journals. The papers will require further condensing and cutting to be an acceptable length for submission to journals. However, for the

purposes of this thesis, they will be presented in full in order to maintain the richness and integrity of the study's findings.

Although I believe that creativity must be viewed as an integrated whole, the data seemed to divide naturally into the components of product, process, person, and press and thus have been divided similarly for the topics of the papers. In the first paper (Chapter 2), "Creativity as Home Care Nurses See It: Defining the Creative Product," the nature of creativity in nursing practice will be examined as it is defined by the creative outcomes of the nurses' experiences. The focus of the second paper (Chapter 3), "Processes in Creative Home Care Nursing Practice: Pondering the Thoughts of a Baby," is an exploration of the findings relevant to processes or creative behaviors. Because the personal and environmental influences on creativity are highly interactional and interrelated, they are discussed together in the final paper (Chapter 4), "What Do You Need to Dress Backwards? Conditions for Creativity in Home Care Nursing."

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# CHAPTER 2

## CREATIVITY AS HOME CARE NURSES SEE IT: DEFINING THE CREATIVE PRODUCT

Henri Mattise's painting of *The Dance.* Vivaldi's *Four Seasons.* Fleming's discovery of penicillin. Cut-up egg cartons for the self-administration of eye drops. Dressing an old farmer's foot in a field. A home care nurse's daily schedule. There is a common link among these things: They are all products of creativity. Margaret Mead stated: "To the extent that a person makes, invents or thinks something that is new to him *[sic],* he may be said to have performed a creative act" (Grainger, 1991, p. 14). Creativity is a complex and abstract concept. It is a concept that is wide and deep in meaning. Whether we recognize it or not, creativity permeates many facets of our lives and can be found in many areas of endeavor. And like a permeating atmosphere or veil, it is difficult to delineate, to define.

Not only is the concept of creativity abstract and complex, but it is also domain specific, which means that it is largely defined, encouraged, and judged by the social or cultural environment in which it exists (Amabile, 1983, 1989, 1990; Csikszentmihalyi, 1990; Ferguson, 1992; Harrington, 1990; Magyari-Beck, 1990). What is considered a valuable and excellent creative outcome is primarily based on the current values, norms, and standards of the relevant culture, whether that be an organization or group, a discipline, or a society. About the creative product, Amabile (1983) wrote: "Creativity is culturally determined, with the degree of creativity of a product being dependent on its acceptability and value to the individual and to society" (p. 31).

A profusion of definitions having a variety of meanings has emerged from the study of the concept of creativity (Taylor, 1988). One reason for

the diversity and multitude of definitions is that academics from different disciplines have adopted different perspectives, focusing on one or more of the frames of reference commonly recognized as the four Ps. The four Ps are designated as (a) person, the distinct traits and faculties that make up the creative individual; (b) press, the environmental factors that influence creativity; (c) process, the active and intentional behaviors that constitute the creative experience; and (d) product, the outcomes or results of the creative act (Ebert, 1994; Peile & Acton, 1994; Slabbert, 1994). Products of creativity represent the tangible, observable results of an illusive, intangible process and, as such, have often been the focus of many creativity studies (Amabile, 1989; Milgram, 1990; Slabbert; Torrance, 1994). Creative products can be verbal, nonverbal, abstract, or concrete. They may manifest themselves as responses, ideas, solutions, or material objects.

Although much has been written about the necessity for creativity in nursing practice and how it can be promoted, ideas about creativity in nursing have been largely adopted from other disciplines. Little is known about creativity as it is defined and demonstrated in nursing practice. Morse (1994) asserted that nursing knowledge in general has been borrowed from other disciplines and that nursing must generate a theoretical base relevant to its own clinical reality. Given the culturally dependent nature of creativity, exploration of this concept from a clinical nursing perspective is necessary in order to recognize it accurately and promote it in practice.

To come closer to an understanding of creativity as it pertains to nursing practice, a descriptive study using qualitative research methods was conducted to explore the creative experiences of home care nurses in their work. Because creativity is most easily recognized and observed through the creative product and the creative products are the outcomes of creative

experiences, one component of the study, the outcomes of the nurses' stories about creativity, are the focus of this paper.

The central research question for the study is, In what ways does creativity manifest itself in the experiences of practicing nurses? Underlying questions relevant to the focus of this paper are (a) How do nurses define creativity? and (b) What types of situations and outcomes illustrate creativity in nursing practice?

## Design and Methods

### Selection of Participants

In recognition that creativity is culturally specific and in order to limit confounding variables within the study, a specific subculture, home care nursing, was selected. It was perceived that this particular field of nursing could be a rich source of creativity stories because home care nurses work relatively autonomously within unique situations in each home visited and must constantly deal with diversity and ambiguity (Boyle & Letourneau, 1995, Demetrulias & Shaw, 1985). As a result of radical health care reform in Alberta during the time of the study, with a shift of care from the hospital to community settings and with clients being discharged from hospital earlier, the opportunities for creativity in home care nursing had the potential to take on new, expanded dimensions (Boyle & Letourneau). In that the area targeted for this study was rural, the need for creativity might further be heightened because of less availability of the resources that might be found in an urban setting. Additional rationale for choosing home care nurses was based on the understanding that, being relatively unfamiliar with this specialty of nursing, I, as the researcher, might be more sensitive to aspects of the home care nurses' experiences taken for granted by someone working in home care. As well, participants might be more willing and

explicit in relaying their experiences to someone who has limited knowledge about this area of practice (Spradley, 1979).

Home care nurses in offices within one central Alberta health care region were invited to participate by way of form letters and personal presentations by the researcher. Participants in the study were required to be registered nurses employed in home care nursing for at least six months, providing direct client care for at least 50% of their workload during the time of the study. Six participants were selected from five office sites. The nurses worked with rural and small-town clientele, spanning a wide range of demographics and health circumstances. Ranging in age from 27 to 47 years, the nurses had 1 to 14 years of home care experience, three in full-time employment and three, part-time. The number of years that each participant had worked in nursing ranged from 5 to 25 years, with all having previous and/or current experience in other areas, including acute care hospital settings, administration, psychiatry, rehabilitation, midwifery, pediatrics, and extended care facilities. It was evident that many of the participants had discussed the topic of creativity with nursing colleagues in their office prior to the interviews, bringing ideas and examples from the group along with their personal thoughts and reflections.

**Data Collection and Analysis**

Data collection and analysis occurred concurrently so that the findings from the analysis could be further developed, compared, or verified in subsequent interviews. This process took place over the course of approximately one year. Each participant was involved in two face-to-face, tape-recorded interviews. Whereas the focus of the first interviews was to elicit nurses' descriptions of experiences that they thought illustrated creativity in their own or their colleagues' practice, the second interviews

allowed for expansion, clarification, and validation of findings arising from the data.

Data analysis involved contextual and line-by-line examination of interview transcripts for themes and patterns related to creativity. Prior to the study, I conducted a concept analysis of creativity in nursing (Tarnowski, 1995) based on the literature and personal experiences, using the methods described by Avant (1993) and Walker and Avant (1995). Some of the techniques used in the concept analysis also proved to be helpful in interpreting the data in this study. For example, in establishing the attributes or properties that defined creativity, descriptions of the nurses' creative experiences were viewed as model cases and were compared to contrary cases, or those experiences where the nurses felt that creativity had not been employed. Concept analysis techniques also assisted the researcher to conceptualize how various themes emerging from the nurses' stories related to the concept of creativity in terms of antecedents and consequences. During the final stages of data analysis, the findings from the study were compared to my original concept analysis to determine if the findings were reasonable and supported by the literature and theory and if gaps existed that required further exploration. Also, as the concept analysis articulated my beliefs and perceptions about creativity, a review of the findings in light of the concept analysis provided me with the opportunity to discern areas of potential researcher bias.

Coding techniques from grounded theory (Strauss & Corbin, 1990) were also useful in sorting out themes and in understanding the relationships between the themes. *Open coding,* which these authors defined as "the process of breaking down, examining, comparing, conceptualizing, and categorizing data" (p. 61), was helpful in identifying

and characterizing the major types of creative experiences found in the nurses' examples. Axial coding techniques, defined as "procedures whereby data are put back together in new ways by making connections between categories" (p. 96), subdivided themes into categories with related subcategories. These subcategories set out the themes into the paradigm model of grounded theory, comprised of the following components: (a) antecedent conditions, the situations that gave rise to the creative experience; (b) action/interactional strategies, the creative actions or behaviors that occurred in response to the antecedent situation; (c) context, those immediate conditions and factors within which creativity occurred; (d) intervening variables, the broader conditions within which creativity occurred; and (e) consequences or outcomes of the creative experience. It turned out that themes emerging from the data predominantly gathered into the four Ps of creativity and that when plotted into the paradigm model, data related to the four Ps could be conceived to fit as follows: (a) creative process as action/interactional strategies; (b) press, or creative climate primarily as context; (c) creative person primarily as intervening conditions; and (d) creative product as consequences. Because the creative person and the climate are in constant interaction and the person develops over time in response to the environment, some overlap exists within the paradigm between context and intervening variables.

## Findings: What the Nurses Had to Say

To protect the confidentiality of the participants, pseudonyms were used. Figure 2.1 diagrammatically illustrates findings of the study related to the consequences. To provide a frame of reference for the examination of the consequences, antecedent conditions or the situations that stimulated creativity will first be described. In examining how the nurses defined

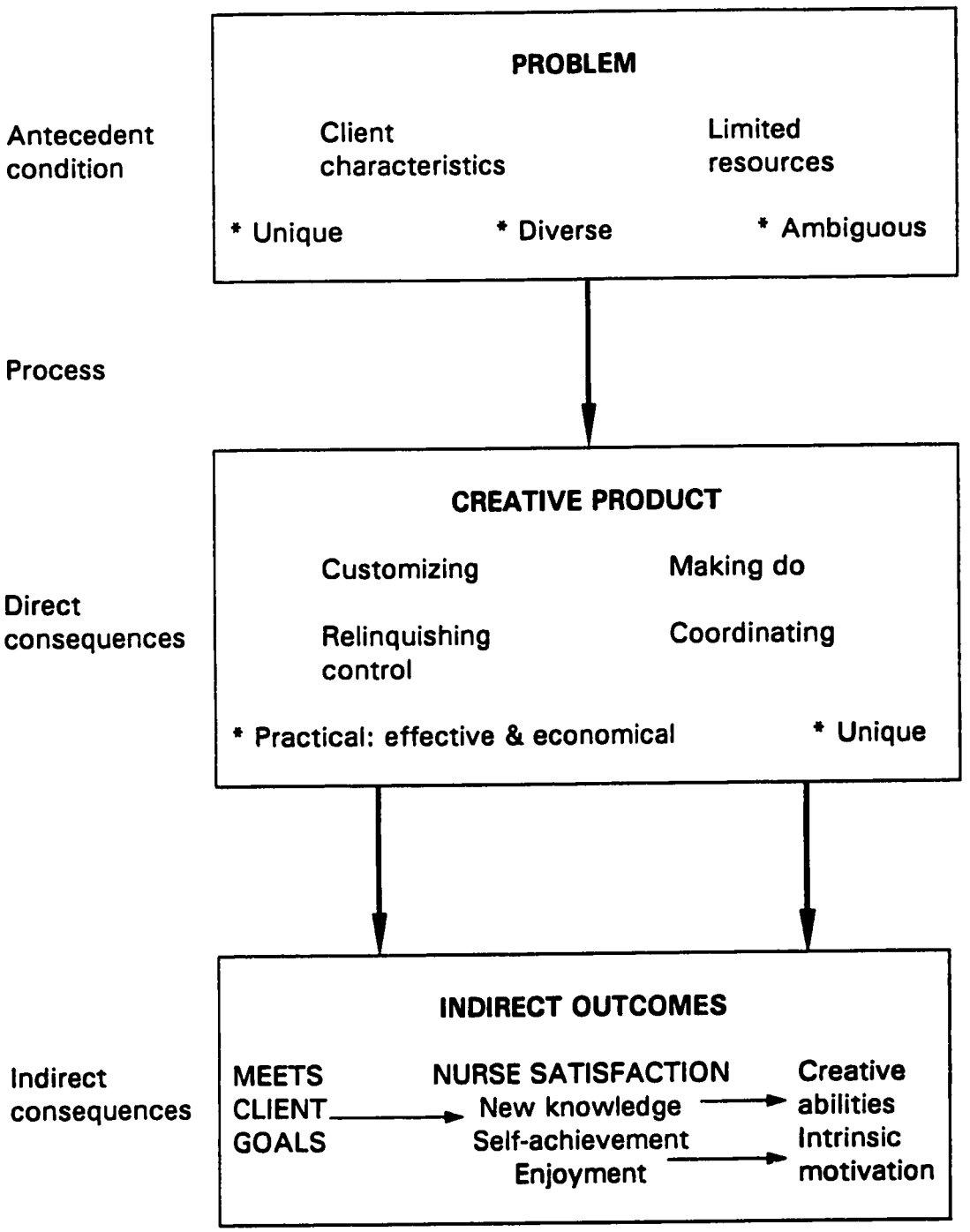


*Figure 2-1.* In the experiences of six home care nurses, antecedent conditions stimulate creative process, resulting in consequences of the creative product and indirect outcomes.

creativity in relation to the consequences of the creative experience, it should be noted that direct as well as indirect consequences arose from the nurses' creative experiences. The *creative products* are distinguished from the other consequences in that they are direct outcomes: the decisions or strategies that the nurses produced through creative processes to manage the antecedent conditions. Other equally important, yet indirect, less intentional consequences will be referred to as *indirect outcomes* of the creative experience.

**Antecedent Conditions: Problems**

The participants unanimously emphasized that creativity was a necessity in home care nursing in adapting nursing care approaches to meet the diverse needs of their clientele. Their creative experiences were largely problem oriented, springing from unique situations that could not be handled in routine or automatic ways. In her description of a colleague's experience, Faith emphasized that a need had to be apparent to stimulate a creative response. Not realizing the nature of the client's problem until arriving at the home, the colleague did not have enema supplies on hand and resorted to rigging up an enema set-up with a detergent bottle, foley catheter, and soapy water:

> You have to have a need before you are going to do something. For instance, this fellow that was [constipated]. She [Faith's colleague] knew there was a problem. She needed to do something about it, so she started to look around and that's what she came up with. Had that not occurred, you wouldn't think that "I have to be creative here. I have to look for something."

To a much lesser extent, creativity arose for the sake of change, or to improve existing yet adequate methods. For example, several nurses mentioned creative efforts in reorganizing roles and learning new skills in response to organizational health care reform initiatives. Others talked of

changing caseloads to avoid becoming stagnant in their work. Carol thought that she was creative when she discovered a charting system that improved her ability to track clients on her caseload. Even though the conventional procedure for wound irrigation had been adequate, Faith and her colleagues tried a different method of irrigating the wound that could potentially cause less tissue damage. Although in these cases a problem may not have been the initial stimulus for creativity, they were problem oriented in that a potential or opportunity introduced a need.

The challenges or problems stimulating creativity in the nurses' stories gathered around the two major categories of *client characteristics* and *limited resources*. Often the situation presented as a combination of some degree of these two elements. *Diversity* and *ambiguity* were characteristics frequently found in these challenging situations.

Client characteristics. It is beyond the intent of this paper to list all the kinds of client characteristics in the nurses' narratives that required creative responses. The types of client characteristics typically involved issues related to the client's perceptions about home care services, client lifestyles, values, or mental and physical capabilities. For example, many of the nurses told stories of clients who refused to allow home care personnel onto their property because of distrust for people in positions of authority and of fiercely independent clients who did not heed the nurses' information and advice. There were stories of clients who did not understand the purpose of their medications or treatments and who could not remember to take their medications or eat their meals, of frail clients trying to maintain independence in their homes, of clients with wounds that would not heal or pain that could not be alleviated.

Limited resources. Resource constriction was also a pervasive theme in the nurses' stories. Limitations of time, money, materials, equipment, and energy constantly challenged the nurses' creativity. All of the nurses contrasted their experiences working in the home environment to working in hospitals where supplies, equipment, and support personnel were readily available. In home care the nurses found that they needed to be creative in meeting the health needs of clients living in dismally unkempt homes lacking running water and electricity. They talked of clients who could not afford, in perception or reality, the costs of medical supplies. They told of how they had to think of ways to help debilitated clients conserve their energy. The nurses were also challenged to meet the demands of their caseload within the time, money, and material constraints of the home care organization. Even when resources were not obviously scarce, the nurses avoided unnecessary expenditure to preserve resources for future needs. Anne talked of economic constraint:

> If you had all the money in the world, you wouldn't be forced to do anything [creative]. The less you use in one situation, the more you have to go to other situations, other families. Most [clients] say, "Well, I know my [health care plan] pays for this, but I still can't stand to see waste. . . . I don't want to take advantage. I want to use some now, and in case I need more later, I want to be thrifty with whatever resource, whether it's dressing supplies, equipment, time. I want to be thrifty now because I'm conscious of tomorrow." So it is rather economically driven a lot of times.

Diversity and ambiguity. Diversity and ambiguity can be seen as two dimensions that heightened the need for creativity in the nurses' experiences. The nurses encountered a diverse range of client-home situations. Edith described the possible extremes of diversity that she faced:

> You have to be completely open to whatever possibility may arise. You may go into one house and it is just perfect, and if they give you tea, it would be in a china cup with a silver spoon and there'll be not a thing out of place and you'll be afraid to eat. It is perfect. And then

> you go into the house next door, and if there is a pathway from the door to the kitchen table, you're ahead of the game.

If diversity can be understood as one dimension that intensifies the need for creativity in home care nursing, ambiguity, or the uncontrollable, unpredictable nature of the home situation, presents another challenge. The nurses worked relatively alone in the home, within a loosely defined structure of policies and procedures. Uncertainty existed in that there were no specific directions for the courses of action to be taken in each situation. Faith reflected this when she made the following two statements:

> In home care you have to be so independent in your thinking, and you are not following somebody's orders all the time, and that's the fun part. It's kind of scary at times.
>
> Not everyone is going to be the same, so it's got to be different for everyone. And there is nothing written in our manuals that says, "For this type of person you use this tactic."

The situation in the home and the needs of the client were not always known. At times, the true nature of the problem was obscure. Below, Edith's comments reflect this sort of ambiguity, and Anne talked of one situation where client needs were obscure:

> Edith: Working in home care, you have no idea of what you are getting yourself into when you step out of your car.
>
> Anne: I'm not really sure why I visit. She's got heart disease and she's asthmatic, but I'm not really sure if taking her blood pressure is doing any good because nothing is going to change if I take her blood pressure. But you just like to keep an eye on how she's doing and let her know that you are there for her. [It's] just a feeling that we should visit every so often and that it makes a difference to her not going into hospital.

As well, ambiguity arose from the client-driven nature of home care nursing, where the nurses found themselves guests in the domain of the client's home. Client responses could not be controlled by the nurse, as Carol explained:

> You go into so many different situations that everything you do, you have to adapt particularly to that person, or else it is not going to work. There is no use saying, "Well, this is the way we do it, this is this; this is that," because they [clients] are just going to say, "There's the door, lady."

How clients responded to nursing care was also less controllable in that home care nurses were unable to monitor the home constantly. Furthermore, because the creative nursing actions were new and had not been tried under the same circumstances before, the results of the nurses' actions were less predictable.

## The Creative Product: Responding to the Challenges

The strategies that the nurses developed and implemented to meet the creative challenges fell into four major categories: *customizing, making do, coordinating,* and *relinquishing control.* Elaboration on these is presented in the following sections.

**Customizing**. The nurses creatively responded to challenges related to diverse and unique client characteristics by *customizing,* adapting their approaches in a manner that suited individual client characteristics. Customizing strategies frequently involved the presentation and implementation of services in ways that were acceptable and comprehensible to the client. Carol expressed this aspect of customizing:

> Obviously everybody is different, so there are different personalities you have to deal with. And basically, I think we use the same solution for everybody. We just have to dress it and present it in different ways.

Customizing appeared to be the strategy of choice in gaining access and in introducing treatment modalities to clients who were distrustful or highly independent. Gloria described one example of customizing in a story about a client who expressed a high need for control:

> She had her urostomy draining into a bleach bottle through an old rubber hose, and she'd done that at nighttime for years. So when I came to present this idea, I told her, "Well, let's do an experiment.

> Let's see, if we use a flow system and if we use a catheter bag and every two nights, the home support workers rinse it out and clean it with vinegar, let's see if your urine will be less full of gunk and mucous after a week of doing that than it is now." So I sort of tried to hook her into being my helper in an experiment, and that worked for a while.

Customizing was also prominent in the nurses' examples of creative client teaching, in presenting information in ways that the client could identify with and understand. Faith provided an example of teaching done by a colleague that illustrated customizing:

> She had this new diabetic, a farmer, and she was trying to explain to him why he needed to eat at this time and what he should eat and that he needs to have the snacks. He still thought that the three meals and the heavy supper were okay because he was used to that. She explained to him, "It's like having your car and fueling up your car. Your car needs fuel to get to your destination, right?" So she compared it to his body needing food. In order for him to do his work during the day and to finish up at the end of the day, he needed that extra snack.

Less frequently, the nurses talked of customizing in relation to more technical nursing interventions. Faith relayed a story in which she customized the treatment of a wound that had a tiny opening:

> We use the duo gel so much and it works so well. I thought, "You know, if I could just get that in there," because normally we . . . use a sterile Q-tip, or something like that, or tongue depressor to put it into the wound. But because it was so small, I didn't want to open it up any more. So . . . we ended up using a syringe.

**Making do and coordinating**. Two major strategies, *making do* and *coordinating,* arose from the nurses' accounts of how they managed the challenges of limited resources. Making do can be defined as using the resources at hand. It involves such activities as substituting, reusing, reducing and fixing up, or fashioning a new product from common household items. Faith's story above of the nurse using a detergent bottle and catheter for an enema is exemplary of making do by substitution. Many nurses also mentioned that they have substituted such items as clean cloths

and feminine hygiene pads for expensive dressing supplies. Diane provided a wonderful example where a client made do by fashioning equipment from materials found around the home:

> [He] had rigged up some old hockey sticks which he cut four inches in length and had an old toilet seat which he nailed to these four hockey sticks and put it on his toilet, and I was just mortified. I said, "For Pete's sake, I know they have raised toilet seats. I'll bring you one." But he was perfectly happy with that. "Why use the government's money for a toilet seat if I can use this one?"

The nurses also found themselves making do in terms of adapting home environments to suit the therapeutic needs of clients, setting up medical home equipment such as rails and poles in ingenious ways, or using common materials for renovations, as described by Diane:

> Sometimes we end up being pretty creative that way, in making other rooms into something that they're not, like making that living room into a bedroom with a blanket around the commode that makes it kind of a private area. And you almost feel like you are making forts in the summer, because you're trying to accommodate spaces, making it into something that's functional for people.

The other strategy used to deal with limited resources, coordinating, involved the nurses' organizing time and personnel for optimal utilization. Coordinating involved activities such as systematically planning home care visits for the day, timing visits so that they were convenient for clients, and arranging and scheduling other services and care givers for clients. Edith noted that organizing her day was an act of creativity:

> Another thing that comes to mind in terms of creativity—and it is a key factor in our job—is, you have to be organized and creative, very creative in planning your route, because you could spend a tremendous amount of time going from A to C to D to B to Z. You have to be organized in that sense. And that is one area where you have to look at your caseload and sort of plot it geographically in conjunction with the people. That's a very important part, and that is being creative too. And every day it changes.

Below, Diane illustrated the complexity involved in coordinating services for a client:

> We're having the daughter-in-law make the meals; they phone each day. The home health aide goes one week to do his bath and put his creams on (he had psoriasis), and the next week, to clean his house. I go the alternate weeks. We monitor his help and try to prevent the psoriasis from being infected, and just try to keep him at home.

**Relinquishing control**. Whereas the nurses employed strategies of customizing to manage issues of diversity, they typically dealt with ambiguity by relinquishing control in the situation. This relinquishing of control was often described by the nurses as "going with whatever happens" and "letting go." Gloria explained letting go in an unpredictable situation:

> If it's something like figuring out whether someone is going to be able to stay at home over the weekend or for longer, or how a couple maybe would continue to manage with each other while somebody's very, very frail, there's times when you have to just let it go and let it happen and see how it works. And you never know until you try.

## Attributes of the Creative Product

In the nurses' descriptions of the strategies they perceived to be creative, two common attributes or qualities are apparent. The creative strategies were practical in that they met individual client problems economically. As well, the strategies were seen as unique in being unusual or new approaches. These themes are expanded below.

**Practicality: Effectiveness and economy**. It is noteworthy that all but two of the nurses' examples of creativity ended in successful solution of the problem. In one of the two contrary cases, the creative idea was not accepted by the client; and in the other case, the idea was rejected by the nursing staff in favor of another more feasible option. However, both nurses relating the two negative cases believed that their creative ideas were viable and might have application in future situations. Thus, it can be inferred that one characteristic that the participants expected from a creative nursing response was that it had useful application in practice. This was reinforced

by many comments in the data that supported any creative approach, as long as it "worked" or "served the purpose," within the boundaries of client safety. In the following statement, Edith appreciated a classic example of creativity in home care practice where the goal was achieved with a very elegant solution:

> There was a lady at the Lodge, and she had a sore on her ear, and we had tried everything. And the doctor had actually taken a biopsy. It just wouldn't heal. The homemaker said to me, "I bet you that if we just turned her bed the other way, because she always lies on that side, it would heal up." And we did. We pulled the bed out and we turned it around the opposite direction, because this woman wanted to face the door. So she was facing the door, turned around, head against the wall. And within a week the ear was all healed up. Very simple. And I just think that is a wonderful example of creativity.

As in Edith's story above, the creative solutions most valued by the nurses were not necessarily fancy, involving complicated procedures or state-of-the-art equipment. Simplicity and economy of time, energy, and money were seen as important qualities. In most circumstances, economy was ultimately necessary for goal achievement because of concomitant resource constrictions. When asked to rate the importance of effectiveness and economy as defining attributes of the creative product, Faith explained the synergistic relationship between the two qualities, but ranked effectiveness as the most important:

> Usually, in our cases though, I find that if it works, it usually is economical because we are thinking economically already. It's not going to work if it's expensive because if it's going to be expensive for us or the client, it's not practical. So those two go hand in hand. Ultimately, I think if it works, you go with it. That would probably be the first priority.

Uniqueness. As well, the nurses talked in terms of uniqueness or newness as a property of the creative product. In that each creative experience was born of a unique interaction between the client, nurse, and environment, every experience and, consequently, the outcomes or

products of that experience were seen as new. Anne's comments reflect this aspect of uniqueness:

> I would compliment my colleagues and say, "I would have never thought of that!" But chances are, I would have thought of something different in the situation. I probably wouldn't have thought of that because it's as unique as the nurse that is dealing with the family—the chemistry [between the nurse and the family].

None of the nurses considered uniqueness in their creative product as something absolutely original, but rather, as novel constructions or adaptations of extractions from past experience. Anne also articulated this notion:

> Creativity is not necessarily genius or divine inspiration from some unknown source. But probably, [it is] more the ability to take experience and knowledge from other places and pull it together into new situations. Synthesize it. Take a variety of different experiences and different knowledge bases and pull it all together in a new way that wasn't necessarily the way you learned to do it.

Frequently, elements from the experiences of others, such as clients, colleagues, and non-nursing health professionals, were borrowed and adapted in the creation of a new idea, as described by Carol:

> I think I am a very good thief in the sense that I see somebody else's idea and think, "Oh, that was wonderful," and adapt it from there.

## Indirect Outcomes of the Creative Experience

The nurses' creative experiences resulted in noteworthy and beneficial consequences that extended beyond meeting client-care challenges to the development of new knowledge and to personal and professional satisfaction for the nurses. Unfortunately, despite its positive consequences, creativity was often left unrecognized.

**Development of new knowledge.** It was evident from the nurses' stories that the ideas born from their creative experiences added to the knowledge base of the nurse and others involved in the situation, becoming

part of the nurse's repertoire of experiences that could be used or adapted in future situations. Creative experiences and ideas were exchanged with other nurses within the same office, as well as between offices during formal and informal discussion of cases and brainstorming sessions. Diane speculated that the idea of using a section from an egg carton with a hole cut in the center for the self-administration of eye drops might have been transmitted from another agency and described how it had disseminated through her office:

> I think the nurse that was here before me showed me, and I don't know whether it was somebody from one of the . . . eye clinics that told her. So we just keep passing along this idea. I have no idea where it came from, but it has been around as long as I've been here.

At times, creative ideas were transferred from one office to another by nurses who worked part-time or casually between two offices. Carol shared such an example where she brought a creative idea from another office where she worked:

> Another idea that a friend [in the other office] had, which I stole, is this charting system . . . This nurse had written out this wonderful sheet. When she has to visit people, there is a pin in and after she sees them, she moves the pin to the next date. All the names and numbers and dates are erasable, and I thought that was a wonderful idea. Now everybody in this office wants one.

**Satisfaction**. As well, the nurses derived much personal satisfaction from working creatively. The nurses expressed great satisfaction in using their creative skills to meet the goals toward improving the well-being of their clients, as was described by Carol:

> Researcher: How does that creativity feel to you?
>
> Carol: Oh, it is a wonderful experience when you go in somebody's home and you do things, things just turn out. It's a heck of an experience. They think that you've improved their life and you've made it so that they can stay at home longer, rather than putting them in a facility, because they don't want to be there in the first place.

All of the participants talked of how they enjoyed the novelty and challenge, describing their creative experiences as fun, exciting, and interesting. Many found emotional gratification in the process itself, depicting it as a "high" or like a game. Anne discussed how creativity enriched her work experience:

> We talked about the ambiguity and the diversity being a bad thing. It sounded like a bad thing. But then, it is also a good thing because there's no mundane routine. Every day is different, and who knows what is going to pop up today? So you thrive on that. . . . You thrive on the ability to be creative. To have fun. And the ambiguity and diversity. It makes things more interesting. Remember when you talk about squelchers outside of home care in other jobs, it is the routine and the mundane things that make life at work not very fun and make it hard to go to work.

The participants also experienced a sense of self-achievement in working independently. They found that stretching their skills and knowledge levels in challenging circumstances contributed to their growth personally and professionally. Faith and Gloria conveyed such feelings:

> Faith: We've been creative. But you know, when you do, it's great; you feel really good about it afterwards. Like you've accomplished something, . . . done it just through you.
>
> Researcher: When you get to be creative at work, when you do have those creative experiences, how do they make you feel?
>
> Gloria: Mm, good. Really, really, really good. . . . I think they make you feel more alive. And it makes you feel like you're stretching, as a person or as a professional. Almost like building something. In grief support and in bereavement literature, they use the butterfly analogy a lot, of how, when your life has been touched by a loss or a tragedy, after you've worked through it you are a different person. And your world is different because someone may be gone, but you are also a different person. And I think that's also true for creativity, that once you've done something creative, it becomes a part of you also, and it makes you a little bit different. A little bit more enriched, a little wiser. Plus it lends something, hopefully, to your nursing practice.

**Creativity taken for granted**. In spite of the necessary role the participants believed that creativity played in home care nursing, and in spite of the beneficial personal and professional outcomes they reported, the

participants saw that creativity was often taken for granted, as a matter of course in their day-to-day functions. Diane expressed these sentiments:

> Things that are in here [referring to a nursing article about pain management] that they [the authors] think of as being creative, we just think of as being, making do. Because that's all we are always doing, is making do. . . . We [the nurses in the office] had talked about [creativity] as a group. We said, "Oh, I guess that is kind of creative." We just do it because we are just making do, because we are in the home and there is not all the equipment or the facilities available there. So we are just making do with what's there, and we don't think of it as being creative.

It is interesting that three of the participants did not consider themselves to be creative persons, yet they recounted numerous examples of creative experiences from their own practice. Several of the participants felt that it was easier to recognize creativity in others than in themselves. This was illustrated during an interview with Carol and Edith, who worked in the same office. Carol admitted that she did not consider herself creative, but simply a good borrower of ideas. Edith challenged Carol's self-perception, and the dialogue concluded with a mutual agreement that Carol was creative and that borrowing and adapting ideas was indeed creative behavior.

## Discussion

The above findings reflect the perspectives and theoretical developments in the literature and in my concept analysis. Relating these findings to the literature ensures that they fit reasonably within the realm of creativity as it is theoretically understood. As well, an examination of the literature points to gaps in the findings that require further exploration and areas in the findings that extend our understanding of creativity beyond the extant literature. In the following discussion, the literature related to the study findings will be explored in terms of the attributes used to define the creative product and other outcomes that are associated with the creative experience.

## Attributes of the Creative Product

Uniqueness and practicality, the two attributes of the creative product clearly evident in the study data, were soundly reflected in the literature. All but one of the defining attributes found in my concept analysis (Tarnowski, 1995) pertained to uniqueness and practicality. The other one, which relates to the efforts involved in creativity, is discussed in the third chapter of this thesis. Simplicity and aesthetic appeal, other qualities associated with creativity in the literature, are not prominent themes in the nurses' descriptions of their creative experience but merit further exploration.

**Uniqueness and practicality**. Uniqueness and practicality represent the two most prevalent criteria of the creative product described in the literature. Uniqueness or novelty is universally acknowledged as the essential quality of the creative product, with adverbs such as *new, original, novel, innovative, unusual,* and *unique* used to convey this characteristic with varying connotations and to varying degrees. Although a handful of scholars allowed for the possibility of absolute originality in the creative product (Demetrulias & Shaw, 1985; Guildford; as cited in Jones, 1983), most current thought, as is reflected by the views of the nurses in this study, leans toward creativity as the negation, adaptation, or combination of previously known entities into something novel (Boden, 1994; Diaz de Chumaceiro, & Yaber O., 1994; Gigerenzer, 1994; Grossman & Wiseman, 1993; Loehle, 1994; Magyari-Beck, 1990; Manion, 1990; Perkins, 1994; Schaffer, 1994; Tarnowski, 1995).

If an original idea is to be recognized, it must cause impact or change. For the change to be valued, it must be seen as useful or applicable in some way, whether that be to an individual or to a larger society (Amabile, 1990; Harrington, 1990; Manion, 1990). Many authors held that applicability is as

essential to the creative product as originality. MacKinnon's (as cited in Harrington, 1990) definition of creativity cited originality and usefulness as two necessary conditions for a response to be considered creative:

> We came easily to agreement that true creativeness . . . involves a response or an idea that is novel or at the very least statistically infrequent. But novelty or originality of thought or action, while a necessary aspect of creativity, is not sufficient. If a response is to lay claim to being a part of the creative process, it must to some extent be adaptive to, or of, reality. It must serve to solve a problem, fit a situation, or accomplish some recognizable goal. (pp. 145-146)

That usefulness or practicality was the attribute most valued by the nurses in the study follows from the problem orientation of their creative experiences. Many authors defined creativity exclusively in terms of problem solving. For instance, Milgram (1990) emphasized a problem orientation in his definition of creativity as "a process of original problem solving" (p. 220), and Magyari-Beck (1990) noted that a new humanistic paradigm of creativity is based on the perspective that human behavior is essentially creative problem solving. For creativity to occur, a tension-producing stimulus by way of a potential need or problem that cannot be solved by conventional approaches must exist (Amabile, 1990; Csikszentmihalyi, 1990; Epstein, 1990; Ferguson, 1992; Grossman & Wiseman, 1993; Manfredi & DeResti, 1981; Torrance, 1994). For the nurses in the study, challenges of diversity, ambiguity, and limited resources required responses beyond what was considered usual or routine. Customizing to diverse client characteristics, coordinating and making do with limited resources, and letting go in uncontrollable, ambiguous situations were appropriate strategies to meet these challenges.

Taylor (1988) classified 50 to 60 definitions of creativity found in the literature into six major groups. Of the six groups, three have direct or indirect associations with the characteristics of creativity mentioned above.

One group, *end product* or *innovation* definitions, focused on creativity in terms of the production of a novel work deemed to be useful, tenable, or satisfying to a particular group. In a second type, termed *Gestalt* definitions, creativity was conceived as the recombination of ideas and perceptions. Although a third grouping, *solution thinking* definitions, emphasized the process as opposed to the product, they were framed within a problem-solving orientation. A fourth group, *aesthetic* or *expressive* definitions, where expression of a unique self is the emphasis, may also have relevance to the findings from this study. Although the nurses did not recall any experiences where creativity directly sprang from an individual nurse's need for self-expression, there was an indication that the positive personal feelings derived from contributing as an individual in solving a challenging problem may become a form of intrinsic motivation for future creative endeavor. However, this notion also needs further investigation and validation.

**Simplicity and aesthetic appeal**. Related to usefulness, the creative product must be acceptable and meaningful to the group in which it exists. Because simplicity and aesthetic appeal are closely associated with acceptability and meaningfulness, some authors included these two criteria in their definition of the creative product (DeGroot, 1988; Feldhusen, 1995; Ferguson, 1992; Murphy, 1985; Siau, 1995). Murphy claimed that simplicity, that which makes the complex clear and uncomplicated, is one quality of the creative scientific work and that simplicity is closely linked with the concept of beauty or elegance. Siau described this as "creative condensation" (p. 206), the unification of complexity and apparent simplicity. It may be that the simpler creative solutions appealed to the nurses and clients in being more natural, uncluttered, and unencumbered

with procedures, equipment, and technology. There is certain aesthetic charm extending beyond mere practicality in stories such as the one told by Edith about the woman with the sore on her ear. The notion of aesthetics as a criteria for creativity in nursing is also worthy of further exploration and thought.

**Other Outcomes of the Creative Experience**

Again, the findings of this study are consistent with views in the literature pertaining to the positive personal and professional outcomes that arise from creativity. Documentation in the nursing literature, supported by literature in other fields, has shown that creativity benefits the delivery of nursing care, the growth and satisfaction of nurses, and the advancement of knowledge in the discipline of nursing.

**Benefits to nursing care**. Pesut (1988) identified several nursing authors who deemed creativity to be "the key value and attribute of the professional nurse" (p. 100). The nurse who is creative is considered to be better able to deal with complexity and to solve problems (Cunningham, 1989; Jones, 1983). Furthermore, many authors asserted that a creative nurse is more likely to provide individualized, situation-responsive care by being able to perceive a situation holistically, empathetically, and sensitively; tolerate divergent values and beliefs; modify responses to suit the context; and coordinate a variety of services (Davies, 1993; Demetrulias & Shaw, 1985; Ferguson, 1992; Holbert & Thomas, 1988; Jones; Sarvimaki, 1988; Skeet, 1985). Furthermore, many authors saw creativity as important for nurses in dealing with change (Holbert & Thomas, 1988; Wilson, 1991) and using available or limited resources to deliver care of high quality (Curran, 1994; Murphy & De Back, 1991; Shamansky, 1992). Davies' model of the creative carer is remarkably reflective of the findings in this study in that the

creative carer was described as a nurse who is able to modify nursing actions in response to diverse and ambiguous situations, using available resources.

Satisfaction and growth. Evidence in the literature also supported the findings in the study that indicate that creativity increases the personal and professional satisfaction and growth of nurses (Aleinikov, 1994; Csikszentmihalyi, 1996; Klaich, 1990; Klinefelter, 1992; Manfredi & DeResti, 1981; McLees, 1988; Moore Schaefer, 1990; Skeet, 1985). Creativity was seen as an important contributor to the general well-being and self-actualization of a person through self-expression, self-improvement, and the realization of one's potential (Duncan, 1987). Because much of life is spent working and work factors strongly in one's self-identity, it follows that creativity can enhance work satisfaction. In her study of the career orientation of nurses, McLees found that several of the respondents who had left nursing sought careers that they perceived offered greater freedom for individuality and creativity.

The positive emotions that the participants of the study experienced during the creative process were also well documented in the literature. Excitement, exhilaration, and joy are among the emotions associated with the moment of creative insight or discovery (Csikszentmihalyi, 1996; Grossman, 1994; Rowland, 1994; Udall, 1996). Creativity begets creativity. The positive feelings and personal growth that it engenders in the creator fire the motivation to be creative in future endeavors (Amabile, 1990). As well, social recognition of creative efforts builds the self-concept of the individual as a creative person. This role identity also increases the internal motivation to be creative (Wesenberg, 1994). Not only does creativity have

an impact on the creator, but creative activity in one individual can also encourage and stimulate creativity in others (DeGroot, 1988).

The advancement of nursing knowledge. Despite the importance attributed to creativity, it is often taken for granted or marginalized, as was the case for the home care nurses in this study. Creativity can be placed on a spectrum, ranging from the rare and greatly ingenious discoveries that have had a great impact on society at large, such as Einstein's theory of relativity, to the more "garden-variety" creativity (Amabile, 1990), where the innovation is a new development for an individual or a few people (Aleinikov, 1994; Ebert, 1994; Gedo, 1990). Harrington (1990) and Slabbert (1994) are among the authors who distinguished between private and subjective creativity, creative acts that are of value and have an impact on only those who produce them; and social or objective creativity, acts that are novel and have value to or substantial impact on people far removed from those who initiate them. If one views subjective creativity in the broadest sense, each time a stimulus is presented and processed, it is to some degree a new, creative experience, occurring as an interaction between a constantly changing person and environment at a specific point in time (Ebert, 1994; Peile & Acton, 1994). Peile and Acton described this perspective as the creative cosmology, where the universe and all parts within it are in a constant, infinite, creative flow. The continuous evolution and spiraling of human knowledge is part and parcel of this creative movement (Ebert).

It would be fair to say that, for the most part, the nurses considered their creative experiences as sitting more closely to the "garden-variety" or subjective end of the creativity spectrum. In their stories of creativity, the nurse, clients, and others involved in the immediate situation were primarily

affected. Thus, creativity was perceived by the home care nurses in the study to be just a part of their work and was dismissed as ordinary or common sense, and not fully recognized or articulated. Yet these experiences are fundamental to the development of practical knowledge, that knowledge gained through clinical experience (Benner & Wrubel, 1982; Titchen & Binnie, 1995). These are the seeds from which nursing knowledge can advance. If they are noticed, harvested, and planted, they have the potential to have an impact upon a broader cross section of nurses and clients and to advance a body of nursing knowledge that is meaningful and based on clinical practice.

The recognition of clinical scholarship as a valid vehicle for the development of nursing knowledge can provide a garden in which these seeds may grow. Clinical scholarship entails making observations and connections in clinical practice; analyzing, developing, and refining the observations in relation to theoretical knowledge; and communicating the developed ideas to others in the discipline (Diers, 1995). Plotting and naming the garden, however, does not grow the seeds. How do we provide nurses such as those in this study with the sun, earth, and water; with the motivation, skills, support, and time that are essential for growth, for clinical scholarship to be fruitful?

## Implications for Practice and Education

"How we think about creativity determines where we look for it, how we measure it, and how we value it" (Powell, 1994, p, 27). Knowing what creativity is to nursing and knowing that it is present and important sets the stage for recognizing, understanding, promoting, and communicating the creative ways that nurses deliver care (Pesut, 1985). Much like it being easier to pick out the soup tin from the grocery shelf if you know what the

label looks like, awareness of the forms of creative products in a particular area of nursing (i.e., the strategies of customizing, making do, coordinating, and relinquishing control for the home care nurses in the study) sets the mind to recognize more easily instances of creativity in the future. Knowing what situations stimulate creative responses and what attributes are valued in the creative product can lead to a better understanding of the processes involved and the development of conditions that facilitate the processes. For example, that creativity arose from problems and that practicality was the quality of creativity most valued by the home care nurses in the study might suggest that creative problem-solving processes are developed and supported in home care nursing. Similarly, that uniqueness was another important attribute associated with the creative product implies that conditions that support and develop originality in home care nurses should be explored and developed. This has bearing beyond the level of the nurse in practice. Awareness of how creativity is defined will help to guide nursing education in fostering and developing specific skills and attitudes needed by the creative practitioner. It will lead nursing administrators to recognize and promote creative activities by providing environments and conditions that are conducive to creativity.

## Future Research

Creativity in nursing represents an area rich with research opportunities. Woodman and Schoenfeldt (1990) likened the scattered approach to studying creativity by the different disciplines to "a passel of blind men describing an elephant" (pp. 16-17). Exploring the creative product with six home care nurses touches only the tip of the tusk of that elephant. It is hoped that this study results in more questions asked than

answers given and that it piques curiosity and interest about creativity in nursing.

For a full understanding of creativity, the multiple facets of the concept—the product, process, person, and context—must be explored and integrated (Slabbert, 1994; Woodman & Schoenfeldt, 1990). In this article only the data related to the creative product are discussed. Because of the small scale of this study, it would be worthwhile to validate and substantiate these findings through replication of this study with other groups of home care nurses. Just as creativity is defined differently by different cultures, it is likely that variations exist between various specialty areas within the field of nursing. Therefore, exploration of creativity in different specialties and settings of nursing practice is warranted.

Although the findings in this study focus on a problem-solving kind of creativity, as was reflected in the participants' experiences, other types of creativity such as artistic self-expression need not be dismissed entirely from the realm of nursing work. Evidence from my personal experience and the literature (Chinn & Watson, 1994) has suggested that artistic interpretation and expression through literary, musical, or visual avenues may potentially add meaning, knowledge, and enrichment to many aspects of nursing. This is also an area worthy of further exploration.

It may also be fruitful to use different research approaches such as focus groups and field observation to gain a deeper and clearer understanding of creativity. Focus groups may provide a way for nurses collectively to consider the concept of creativity from a broader cultural perspective. Also, in a focus group there is less chance of creativity being ignored, because creativity may be more easily recognized by others. Similarly, direct observation of nurses' experiences by an objective

researcher may facilitate the recognition and articulation of what nurses do that is creative. In home care nursing, as in other areas of nursing, the client is a significant partner in creatively meeting health care goals. Nurses gain and learn from clients, as clients do from nurses. Exploration of creativity in clients could benefit not only the client, but nurses and the discipline of nursing as well.

## Conclusion

The nurses in this study truly demonstrated that creativity exists in nursing practice. In order to recognize and promote creativity, it is important first to be able to understand how this abstract and complex concept is defined specifically to nursing practice. The findings of this study suggest that creativity in the practice of these home care nurses revolves around adapting nursing care responses optimally to meet the diverse and sometimes ambiguous needs of clients. To the home care nurse, nursing actions or responses are creative if they are practical in meeting individual client care needs within economic parameters. They are novel in that they are born from unique nurse-client situations and result in a new combination or adaptation of past knowledge and experiences. Because creative nursing practice can lead to optimal nursing care and the growth and satisfaction of nurses, it is important that we recognize and value creativity. Clients and nurses alike would benefit from further research and consideration of this important concept.

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# CHAPTER 3

## PROCESSES IN CREATIVE HOME CARE NURSING PRACTICE: PONDERING THE THOUGHTS OF A BABY

Watching a six-month-old baby take in everything seen, touched, tasted, smelled, heard, one may muse about what is happening inside that disproportionately large head. What is that baby feeling, thinking, doing? Wondering about the creative process is much like pondering the thoughts of the baby. Creativity is an elusive phenomenon, so complex, abstract, and pervasive in our lives that we often do not realize what it is exactly, or even when it is occurring. And perhaps understanding the process is the most difficult aspect of learning about creativity because it involves mental activities that cannot be directly observed. If those behaviors are at all perceptible, they are difficult to articulate.

Creativity increasingly has been promoted as an asset needed by today's nurse in order to cope with a rapidly changing society and health care environment (Ferguson, 1992; Holbert & Thomas, 1988; Manion, 1993). Nurses must be creative to keep abreast of and contribute to a steadily expanding body of knowledge (Cunningham, 1989; Demetrulias & Shaw, 1985; Duldt, 1995; Murphy, 1985; Pesut, 1985). They must adapt to a health care system that is moving toward health promotion and community-based services, where they will find themselves working more independently in diverse settings (Alberta Association of Registered Nurses, 1993; Banning, 1993; Hammond & Gourlay, 1993; Jones, 1983; Shamansky, 1991; Van Tassel, 1993). As well, a knowledgeable, consumer-oriented public is rightfully demanding the creativity of nurses in the delivery of holistic and individualized care (Callahan, 1990; Davies, 1993; Demetrulias & Shaw; Ferguson; Holbert, & Thomas; Jones; Sarvimaki,

1988). Resourcefulness and creativity are also required of nurses as they face economic constraints that challenge the preservation of quality care (Curran, 1994; Demetrulias & Shaw; Murphy & De Back, 1991; Shamansky, 1991). However, as much as creativity is needed, little is understood about this concept as it is experienced in clinical nursing practice. Although the nursing literature has been replete with calls for creativity in nursing and prescriptions as to how creativity can be developed and promoted, most of the knowledge about creativity has been adopted from other disciplines or based on research using nursing student populations (Cournoyer, 1990).

In order to begin to understand creativity as it pertains to nursing, a study using qualitative research methods was undertaken to explore the creative experiences of nurses in their practice. The focus of this paper will be one part of the study: those aspects of the nurses' experiences that are relevant to the creative process, those behaviors or actions in the nurses' stories that characterize the work of being creative.

## Design and Methods

### The Participants

Because creativity means different things to different cultures, one subculture of nursing, home care nursing, was targeted. Participation in the study was voluntary, elicited through invitational letters and personal presentations to home care nurses from five offices within one health care region in central Alberta. The six participants selected for the study were registered nurses who had been employed in home care nursing in full- or part-time positions from 1 to 14 years. Pseudonyms are used in this paper to protect the confidentiality of the participants. All of the participants were involved in providing direct client care in small towns and rural areas during the time of the study. As well, all had previous or current experience in a

variety of other areas of nursing, including acute care, administration, rehabilitation, extended care, psychiatry, midwifery, and pediatrics.

## Data Collection and Analysis

Interviews and data analysis were carried out simultaneously over the course of one year. The participants were interviewed twice, with the interviews focusing on the nurses' descriptions of experiences in their own or their colleagues' practice that they considered to be creative. In explaining or describing creativity, the nurses often contrasted their creative experiences with situations where they felt creativity was not employed. Exploration relevant to the creative process centered on identifying behavioral elements in the nurses' stories that were common to the experiences described as creative and absent in the experiences that they deemed to be not creative. From the inception of the study, I was cautious to adopt an approach that used the term *process* in its broadest sense. Although it was important to learn about the behaviors or actions that constitute a creative experience and bring about a creative product, it was also important to avoid prematurely or falsely pigeon-holing creative behaviors into a step-by-step, linear format. This notion was based on my own experiences where creativity seemed to be a combination of activities and mental processes occurring simultaneously, back and forth, and circularly.

During data analysis, transcripts of the interviews were examined contextually and line by line for themes and patterns. Axial coding techniques as described by Strauss and Corbin (1990) were helpful in conceptualizing the relationships between the major themes arising from the data as (a) causal or antecedent conditions that gave rise to creativity in the nurses' experiences, (b) action/interactional strategies directed at

responding creatively to the antecedent conditions, (c) the consequences or outcomes of the creative responses, (d) the immediate contextual conditions within which the creative response occurred, and (e) the broader intervening variables that influenced the creative experience. Themes that were relevant to the processes of creativity were considered to be action/interactional strategies. Although the creative interventions that resulted from the nurses' creative process were also action oriented, they were consequences, not to be confused with the processes, which were direct responses to the antecedent conditions.

## Findings

The majority of the experiences in which the nurses felt that they had been creative in their practice centered around problems. Their creative experiences sprang from problems in adapting nursing care to unique home-client situations, in dealing with limited resources, in improving existing methods, and in meeting challenges of changing roles within an evolving health care system (see Chapter 2). However, the home care nurses had difficulty articulating the specific events that occurred and the sequence of those events from the moment a problem arose to the time it was resolved. Similarly, during analysis of the interviews it was difficult to extract and delineate a set of behaviors as stages of a creative process separate from what looked like a problem-solving process. Rather, the distinct creative behaviors found in the data were embedded within a problem-solving process.

To present the findings of this study in a manner that can be more easily understood, the findings will be organized under the three major themes emerging from the data that reflected a problem-solving process: *defining the problem, generating options,* and *testing options*. However, it

must be kept in mind that the division and plotting of the nurses' creative behaviors was not clear-cut and did not fit perfectly into linear stages of the problem-solving process. Figure 3-1 presents a diagrammatic representation of the findings pertaining to the processes of creativity. A description of the findings below will begin with the central box of the figure containing the three aforementioned themes. Following that, two aspects of the nurses' experiences that were integral to the entire process, *the involvement of time, energy, and skill;* and *individual as well as collaborative efforts*, as represented by the encompassing frames of the figure, will be delineated.

## Defining the Problem

Many of the nurses emphasized that understanding the true nature of the problem was key in their creative experiences. Edith, who visited a senior citizens' lodge as part of her caseload, eloquently used an analogy of peeling onions to explain this point:

> Be patient, and that is where the creative ability comes in. And then once you get down to the core of the onion and you see what actually the problem is, then it is usually very, very easy to resolve that. We tend to spend so much time focusing on the layers and making an issue out of the layers that we never actually peel them away. You know, human beings are very, very interesting. And they send up these signals, they send out these cries for help that have actually nothing to do with what is going on. Absolutely nothing. You have these women who stop you in the hallway [of the lodge] and want their blood pressure checked, and finally you try to tell them that there is absolutely nothing wrong with their blood pressure, and they're fine. But if you went to their room and spent some time with them, they might tell you that actually . . . think they might have a lump or something, but they are afraid to come right out and say it. That is what I mean by peeling away the layers and getting to the core of the problem.

To discover the core of the problem, the nurses would engage in a lengthy and intense assessment process. The assessment information was analyzed using a variety of methods that would point to the essence of the problem and possible solutions.

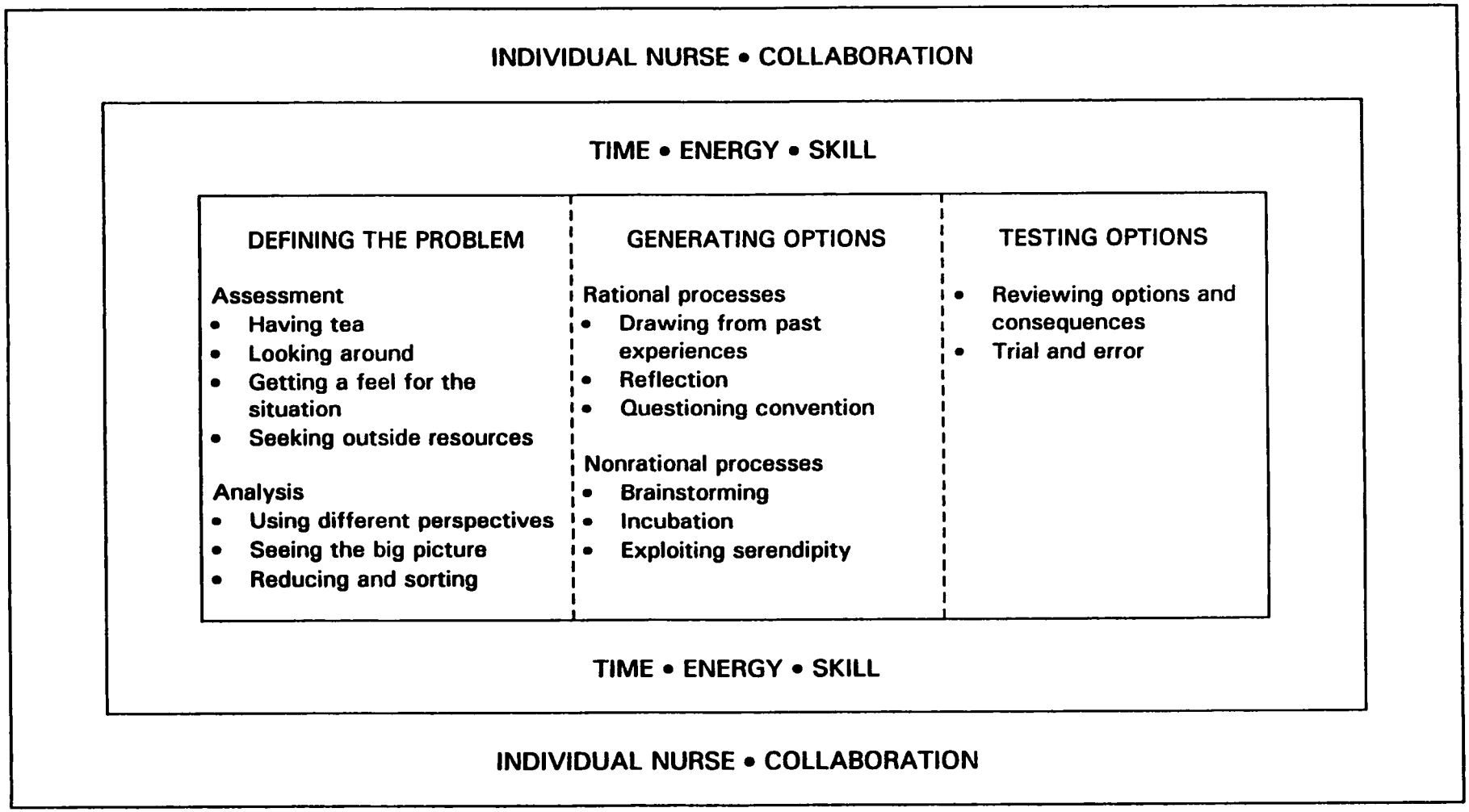


*Figure 3-1.* Creative problem solving: Components arising from the creative experiences of six home care nurses.

**Assessment**

In assessing the situation, the nurses gathered vast amounts of information in a variety of ways from a variety of sources. Although all participants found that a structured assessment tool was helpful in ensuring that they had a comprehensive picture of the situation, they used the tool as a guide or as a method to begin to gather information, rather than as the primary assessment strategy. This was particularly apparent in more complex situations. Gloria outlined the limitations of assessment tools in her experiences:

> [Assessment tools] are fine and good in certain instances, but you can't just globally apply them to every situation. Sometimes they are good as a guideline or as a starting point. But I think it is your creativity and your sensitivity that cues you as to where to modify things and when it isn't appropriate to apply certain objective measurements.

Gloria further stated that reliance on assessment tools could result in a superficial or partial picture of the client situation and that other "devious" or more indirect approaches were required to gain more information. A battery of these less direct, less formal assessment strategies was recurrent in the nurses' stories and were categorized as *having tea*, *looking around*, *getting a feel for the situation*, and *seeking outside resources*.

**Having tea**. *Having tea* was a term coined by Edith in reference to the activity of getting to know clients on a deeper level through informal conversation. All of the nurses emphasized the importance of taking the time to chat informally with clients about things not obviously related to the immediate health issue. This kind of conversation was seen as valuable for a number of reasons. Informal conversation was helpful in creating a nonthreatening climate that allowed the nurses to gain access to the client

and to begin to establish trust. Diane talked of her experiences in sharing small talk with clients:

> Those things [such as small talk] help you get in there. Sometimes the other nurses feel kind of at a disadvantage in that they're not from here. I've been here twenty years now and oftentimes people say, "Well, which Watson are you?" It's not that it really matters that much to them but they want to place me. So if I can say, "Well, I'm Roger Watson's grandson's wife. Roger used to be the [tractor] dealer south of town," "Oh, he sold me a tractor in 1957," . . . then it kind of diffuses the situation, so they're more comfortable. I'm not there visiting; I'm trying to be creative to change that situation so that it can be productive . . . if I can spend three to five minutes making the person feel comfortable and laying a bit of groundwork.

Frequently, the nurses' stories revealed how laying that groundwork, developing a trusting relationship, led to gaining a more holistic view of the client's situation or to uncovering obscure information that was key to understanding the client's problem. Edith related one story of how simply being with a gentleman and talking to him led to the discovery of significant information:

> There's a guy who had a heart lung transplant, and he is only 49 years old, and he is at the Lodge. And he sits there day in, day out, and . . . I went there the other day and I sat there for an hour, just sat with him. . . . I gave myself this time. We talked and we didn't talk, and we sat there and we looked at each other. What I got out of it was that what has to be done for this guy was absolutely nothing medical. His two children that he gave up when they were one and two have to be found.

Diane defended informal conversation as an instrumental method to gain a more holistic assessment of the client situation:

> I have time to sit and talk to somebody about their daughter or how they've been eating, or whatever, because we're not just talking about the gall bladder being removed; we are talking about the whole picture of their health and their family. And some people are having trouble with their spirituality. They've been fighting with somebody at church or something. There's other things that factor into it.

The home care nurses acknowledged that the nature of their work allowed them the advantage of building the client-nurse relationship through

repeated visits over an extended period of time, enabling a more comprehensive and personal assessment, as described below by Anne:

> The building of rapport. And things come out six months later that you never dreamed were a factor. But because you are a guest, a frequent guest in the home, you become privileged to that kind of information.

Sharing and mutuality were themes frequently associated with having tea and getting to know the client. Self-disclosure and emotional involvement on the part of the nurse were necessary elements in establishing a relationship built on respect, courtesy, trust, and mutual gratification. Gloria spoke of the value of being emotionally involved:

> If you're at a distance, I think it's harder to find out what [clients] need because they perceive you in a different place than them. And so they're just sort of listening when you're telling; whereas, if you're involved, you're sharing, I feel. And so, from what they give to you, you can take that and use it and work it into, hopefully, a mutual goal for them.

Diane referred to many of her relationships with clients as *friendships*. She outlined a logic underlying personal involvement and self-disclosure:

> Sometimes the other staff don't really want people to know where they live or what their husbands do, and I understand that. It is important to keep your professional relationship a bit separated, but in home care you're dealing with families and clients in their home, in a very informal setting. . . . That's their home, and you're coming in. . . . You'd be uncomfortable if somebody came to your home and then sat there and didn't disclose anything about themselves. I don't think we need to tell them our life history, but most of the ladies will say, "Well, how many kids do you have?" . . . That's just part of making conversation too. Interesting that when you ask them those things, or when you say, "Well, I've got three kids." they'll say, "Well, you know, I had a girl too, but she died." And [colleagues] will say, "What? I never knew that! They never told me that!" Well, sometimes they don't tell you those things because you haven't asked them directly, but a lot of times you get that information by going around the topic. And yet I always know what I'm getting at.

Diane's commentary further illustrates that informal conversation and self-disclosure are activities that are a valuable use of time, and as unstructured

as they may seem to be, these activities were carried out with direction and intent.

Looking around. Another assessment activity that was prevalent in the nurses' creativity stories was *looking around,* a phrase often used by the nurses to refer to the observational techniques they used to gain information about the situation. The nurses frequently talked of looking around the home for unconventional but potentially useful resources and materials:

> Diane: Oftentimes it's amazing, when you look in the house, [clients] will have things that they don't even realize could be used for—whatever.

In their creative stories the nurses described their observational assessments as taking in, synthesizing, and processing vast amounts of information at a glance. The nurses demonstrated acute perceptiveness in picking up indirect signs and subtle details as clues to the client's condition. The following description by Diane exemplifies this type of detective work:

> His blood pressure is good, his heart rate is regular, he's eating—I checked his garbage can. There were all kinds of puddings, and he's taking *Boost,* and he's eating regular meals. There were dishes in the sink and there were seven [T.V. dinner packages] on the stove from the last time I was there, which means he's had one a day, likely. And I checked his bathroom, and there were no water spills on the floor, so he's obviously voiding in the toilet and not missing. And his bed had been slept in.

Getting a feel for the situation. Anne's description below reflects how the nurses' assessments tended to be fluid, simultaneous, and spontaneous, resulting in an overall impression or feeling about the situation:

> It's sort of at a glance. You don't sit with an assessment tool and go through it. You just sort of glance around, get a feeling.

In this description, Anne suggested that some of the nurses' perceptions are less concrete and objective, involving intuitions and feelings. Many of the

nurses described situations where their perceptions were based on "gut feelings" or intuitions. However, as Gloria explained, many of the nurses believed that this inner ability develops with experience, with learning to recognize patterns and similarities between client situations:

> You sometimes get involved with people that really aren't [genuine]. . . . And somehow you just feel like you knew that all along. It's not because it's mystical or anything, but I think . . . that we're just very used to seeing and picking up [information about clients]. We've obviously had many, many experiences with lots of different clients, and we see patterns. When somebody's like this in a certain area, then often they're like that in another area, and you can almost predict. You have a feeling for what this pattern will be about.

**Seeking outside resources**. Finding resources outside the home environment was another aspect of assessment noted by all of the participants as important to creativity. These resources included informal support systems within the family and neighborhood, as well as colleagues and experts in their own and other agencies. These resources were used as sources of information about the specific problem or situation. Diane described a time when a colleague acted as a resource in providing needed information from a past experience:

> None of us had ever seen a bili blanket, except for Donna, who had seen one once about 18 years ago. So, luckily, at least her having seen it, we could draw on that to at least figure out what it looked like, and then we could look it up in a book and we could put a few things together.

At times, the nurses sought resources that were geographically distant or not well known. One such example was relayed by Carol. She was caring for a woman who was having difficulty maintaining an intravenous site:

> First of all, I phoned around locally to all the home care agencies, but . . . nobody had an idea. So I phoned the cancer clinic in [a larger city center two hundred kilometers away] and spoke to one of the nurses there, and she said they do have something like a plastic butterfly specifically for that, but they never work and they never last. So she suggested I try a pediatric catheter, and it worked wonderfully.

Carol asserted that becoming aware of the available resources was important to creativity:

> Even if being creative is not coming up with some wonderful new concoction for them, it's knowing what resources are available and saying, "We'll take a bit of this and a bit of that" . . . to make their life better.

**Analysis**

Understanding the essence of the problem involved the nurses in activities of processing and organizing the assessment information to clarify and define the problem. Approaches used to analyze the problem centered around three themes: *using different perspectives, seeing the big picture,* and *reducing and sorting.*

**Using different perspectives**. In complex situations where the problem could not be easily understood, the nurses resorted to a variety of approaches to provide them with different perspectives of the situation. By doing so, the nurses sought to ensure that they had an accurate understanding of the situation. Also, by viewing the situation from different angles, they found different ways to define the problem that might lead to different, more viable ideas for solving the problem. One of the approaches employed by the nurses to gain a different perspective was to become very involved in the situation intermittently, then distance themselves so that they could see the situation more objectively. Gloria described it as *untangling the knot:*

> I find it more often like untangling a knot . . . I really feel that that's what it's like a lot of times. You pick away at something, and sometimes you just have to leave it because if you keep worrying away at it you are just going to pull the wrong string and get it really tight, and then you'll be that much farther set back again. So I think sometimes creativity comes out of that.

Edith described how, when presented with a new client, she initially became intensely engaged, then retreated by

> concentrating on [a problem] almost solely, nothing else for the first number of days, so that the bulbs do light up and that I'm there to receive them. Then, I back off it.

The nurses also found that defining the problem differently sometimes required them to restructure attitudes or current ways of thinking. For example, the nurses told many stories where they acted creatively by switching from an attitude focused on helping to one that emphasized client autonomy in order to be constructive in situations where clients repeatedly refused their help. Anne talked of an experience where her work group had to change from a negative frame of thought to one that was more positive before they could creatively deal with a challenging situation:

> We started off with the same idea: "No, we cannot work in this situation." But with collaborating and talking amongst ourselves . . . and changing our paradigm, the shift in our head was a "Yes, we can" attitude from a "No, we can't" attitude. That was probably the major obstacle, and once we figured out "Yes we can," then it was just a matter of what to do, and it seemed quite simple. Probably the biggest obstacle to providing care in that situation was thinking we couldn't.

At times, the nurses discussed the situation with the client's family members and neighbors and other nurses and health professionals in order to check their impressions or obtain a different viewpoint. In two separate excerpts from an interview, Gloria spoke about how it was valuable to talk to others in her office to gain a more objective perspective:

> You think that something is a big problem, and after ventilating for a while [with colleagues], I would realize that it probably wasn't a big problem, but I just had a lot of feelings about it.

> I've had more sharing time with an OT [occupational therapist]. She was very good at promoting people's independence, and she used to look at things a little bit more objectively than I do.

At other times the nurses ventured beyond simply discussing the situation with others to requesting that someone else, usually another health team

member, directly assess the situation in order to redefine or clarify the problem. Faith explained:

> Sometimes you're looking like—tunnel vision. You can't see anything else, and it's good to have someone else come in and look at the situation, because right then something might pop into their head. We do that quite often. If I'm just not getting somewhere with a client or I see something that just doesn't look right, I'll ask somebody to come.

Seeing the big picture. Understanding the situation holistically, what the nurses described as *seeing the big picture,* was essential to understanding the nature of the problem. Seeing the big picture involved a process of simultaneously perceiving, interpreting, and integrating separate aspects of the situation as a total picture of client, problem, and context, rather than perceiving and analyzing the entities separately. Edith described this:

> You have to see the big picture, and when you go into a house you see everything. Not alone, like the patient and the problem.

In order to understand the situation clearly and from the client's viewpoint, Edith further asserted that seeing the big picture involved suspension of preconceptions, judgments, and personal agenda to let the big picture unfold in its true form:

> I guess I keep getting back to *the big picture,* but that's really what it is. It's taking it all in and not focusing on yourself and how you would like to do it, and you are in control and you are this and you are that. You're not. In this respect, you are more like blotting paper: You pick up all the blobs and let them all come out whatever way they like.

Reducing and sorting. In defining the problem, the nurses also found themselves involved in activities of reducing the elements of the big picture into smaller, more manageable parts, prioritizing goals, and identifying and sorting obstacles to meeting the goals. Edith metaphorically described this aspect of the process:

> I think you have to have the end goal clearly defined. You have to see where you're going. You have to have the picture out there and then see what's preventing you from getting there. And dealing with the obstacles in between, one by one. For instance, we are here at A, and B is over there, where you want to be, and in between there is this huge, huge mountain—almost insurmountable. So what you do is, you take the mountain, this mountain of stones, [and you] break it down into stones that you can carry, and you line them all up between A and B so each of these stones you can easily move or overcome, whereas you couldn't move the mountain.

## Generating Options

Many participants felt that once the problem was articulated, solutions to the problem came easily. However, it was evident that much activity also occurred after the problem was defined. The nurses' accounts of their creative experience illustrated arduous and persistent work in searching for solutions to the identified problems. The search involved considering many options in order to, as Anne put it, "come up with not the first solution, but the better solution." This is implied in Anne's description of what creativity is *not*.

> Creativity is not just doing what people ask. It's . . . stepping back and looking at other options.

In generating options or ideas, the nurses used a variety of techniques employing rational or conscious mental processes, as well as more unconscious, nonrational modes of thought.

### Rational Processes

*Drawing from past experiences*, *reflection*, and *questioning conventional approaches* were the primary activities found in the data that involved the nurses in conscious, logical thought processes.

**Drawing from past experiences**. It was evident that the creative options generated by the nurses resulted largely from the synthesis and adaptation of knowledge drawn from past experiences. These experiences came from a wide variety of sources, primarily from past clinical

experiences, but also from educational experiences, professional journals, and from their personal lives outside of nursing. Some of the nurses took deliberate efforts to accumulate knowledge from their experiences. For instance, Diane kept a notebook of all the alternative-treatment ideas she learned from clients, friends, and the literature:

> I try to keep [ideas learned from clients and journals] in the back of my book. I have a little diary that I write when people tell me things, like taking rhubarb as a diuretic instead of *Lasix*. Whenever a client tells me about special things, I try and make a little list of it. And then we share that information, like alfalfa tablets for arthritis and barley greens for psoriasis.

Anne described how, at other times, the process of drawing on and synthesizing past clinical experiences occurred spontaneously:

> This is what I was talking about, synthesizing experiences. [You'll be in another client's home and you remember] something totally unrelated, . . . about the client you saw last week. For whatever reason, you think, "Hey, this applies here. It's different for this family, but this applies and I wonder if we can adapt it and use it and it can work for the other family."

**Reflection**. Many of the nurses acknowledged that when they could not immediately come up with a solution, they needed time to reflect, to think over the problem and possible solutions. Many did so during the drive between appointments or while driving home at the end of a work day.

> Anne: In rural nursing, it's often when you're driving from house to house, because you've left a home and you've got twenty minutes or so before you're going to get to the next one. And you do a lot of thinking in that time. It seems to an administrator who is budgeting probably as unproductive, lost time. But you spend all that time thinking, "Okay, we could try this or we could try that" or "What about that?" You spend a lot of time thinking, and I think if you went from one client to another, you wouldn't have that opportunity to reflect and maybe, therefore, wouldn't come up with as creative a solution, because you do need time to mull it over.

Carol's statement below illustrates the level of focus or concentration that occurred during reflection:

> [I think about the problem] when I'm going to sleep and when I'm driving. I usually go by my corner and think, "Wait a minute!" and have to turn back again. My brain is elsewhere.

**Questioning convention**. At times, in generating creative options, past conventions were questioned so that new options could be entertained. Many nurses talked of having to release the textbook approaches they had learned in nursing school in their search for creative solutions to the challenges they faced in home care nursing. Anne related a time when, as a novice nurse, she was required to question convention:

> Just that questioning. . . . [Senior nurses] would say to me as a young person, "Did you really think it needs to be done this way?" and then you say, "Well Jeez! No, you're right. It really doesn't." . . . Well, what else is a sacred cow?

Also, the nurses found themselves questioning the directives of other health team members, such as doctors. Edith reflected the thoughts of the other nurses in comparing nursing in a hospital to that in home care:

> If this woman was in the hospital, they would have gone ahead and done this [treatment]; whereas for us, in order for us to survive, we have to question things. We just can't take it and say, "Well, the doctor said it" and therefore do it.

## Nonrational Processes

Some of the techniques utilized by the nurses to generate ideas seemed to rely upon coincidence or insights gained by deliberately avoiding rational thought processes. *Brainstorming*, *incubation*, and *exploiting serendipity* were the kinds of activities evident in the nurses' stories that exemplified the utilization of nonrational mental processes in idea production.

**Brainstorming**. The nurses talked extensively about experiences brainstorming either alone or with others to come up with ideas. Essentially, what the nurses meant by brainstorming was the generation of as many

ideas as possible without prematurely judging the merit of the ideas. Diane relayed the intent of brainstorming for the generation of ideas:

> Sometimes you can let the most ridiculous idea out because that's the whole idea about brainstorming. Even if you think it's kind of silly, we put it out, and if somebody laughs, you think, "Oh well, I don't care if she laughs at my ideas or not. I thought it was a good idea. I'm going to bring it up at the meeting tomorrow." Because maybe [it's] not the right idea, but maybe [it] can be altered to fit the situation better. Or maybe [it] would be appropriate in a different situation. But if you throw it out there and it's totally wrong, it might twig somebody else's memory or creativity to think of something else that's more appropriate.

Incubation. In the nurses' experiences of incubation, they were not thinking about the problem, but the problem continued to percolate subconsciously, and solutions to the problem emerged spontaneously. Many of the nurses described incubation experiences while visiting other clients, driving, at home, or in the middle of the night. Edith used the analogy of light bulbs to contrast reflection, which is intentionally focusing on a problem, with incubation:

> I take the 24 hours to reflect on a situation. I am putting myself in the room with the bulbs for 24 hours, and then, yes, they all light up. But occasionally one will light up when you're not in the room.

Diane displayed unusual enthusiasm in taking advantage of her incubation experiences:

> Sometimes something will trigger your memory. Like, you're at home and you're doing something and think, "Hey, that would be really good for so and so." So what I often do is, because we have an answering machine [at the office] and sometimes it will be two in the morning and I had been reading a book or something, I'll phone and say, "Hi, this is Diane calling, and I know it's two in the morning, but I just thought of this idea." Otherwise you forget or something comes up and it's your days off. So they [colleagues in the office] are always laughing because there'll be messages from all hours of the day and night on there when I've thought of something.

**Exploiting serendipity**. Occasionally, the nurses took advantage of serendipitous events in the creation of new ideas or options. Diane related one such occasion with a diabetic client:

> There was an empty glass in the fridge and I said to her, "Margaret, what's this glass in here for?" And she said, "Oh, I just leave it in there in case I want to put something in there." I said, "What? What are you putting in there?" "I don't know." She just kind of kept it in there. And I said, "Well, I'm going to put your insulin syringe in there so you're not having to go in your box." She had a little chocolate box, so you had to take the lid off and put it back on, and so this way it's much better.

## Testing the Options

Before implementing the generated ideas in the client-home situation, the nurses reviewed the options for feasibility and considered a full range of likely outcomes that might arise from implementation of the option. Diane's monologue below illustrates this process:

> What I've learned since coming to home care is how to brainstorm . . . and think back and try and go through all the experiences and think which ones work and which ones didn't work. "Well, I better not do that because . . . if I go in there and I tell him, "Now, look, you can't go home; you have to stay here because you have no phone; you have this and this," he's going to tell me to get lost. Then what?

The ideas considered to be the most feasible were then tested. The testing of options was described by the nurses as largely trial and error. Because the creative option was new and had not been tried before in this particular situation, outcomes were not predictable and often required revision. At times it was possible for the nurses to actually test out their ideas prior to implementation:

> Diane: Sometimes we'll go try ourselves. We'll go lie on the bed and get in and out a hundred times and pretend [we] have arthritis and this ankle doesn't move and this shoulder's frozen, so that [we] can actually see what [clients] are doing. We do a lot of dry runs, we call them, so [we] are getting in and out of things with [our] clothes on. In and out of the tubs with this equipment so we can see.

In other circumstances, ideas simply needed to be tested out in the client situation, as is illustrated in the following narrative by Diane of a typical dialogue between two nurses:

> "So why don't you try this and this and this, and then send a note to the doctor? It worked for me with this Alice lady I was seeing. If it doesn't work, then I'll go next week." So we do try and support each other.
>
> Or we'll say, "Well, this is how I've set up for this person to take their medication in the home. And I think that'll work the best."
>
> And [another nurse] will say, "Well, gee, you know, I tried that last week. I forgot to tell you about that. I tried that last week with that other lady, and she forgot to take it two days in a row, and her potassium was so low and she ended up [in the hospital]."
>
> "Oh, okay, well, I'll go back, I'll stop on my way home and I'll change that, and then when you go tomorrow, could you see if it's working better?"

## Individual and Collaborative Efforts

The nurses' stories contained many instances of nurses working individually as well as collaboratively during all stages of the creative problem-solving process. Collaboration with clients, nurse colleagues, and multidisciplinary members of the health team was viewed as invaluable to the nurses' creativity in all stages of the problem-solving process. As discussed previously, the nurses frequently consulted others during activities of assessment and problem definition. Also, by collaborating, the different experiences and expertise of others were tapped in generating ideas, selecting a solution, and evaluating the effectiveness of the chosen option.

Given the client-driven nature of home care work, collaboration with the client was obviously essential if the nurses were to be effective. As mentioned earlier, clients and family members were involved in the process of problem definition, in providing information that resulted in seeing the true nature of a problem in order to generate feasible solutions. Faith related a story in which collaboration with a young, terminally ill girl's father and his

fiancée was instrumental in establishing that the reason for the girl's difficulty in sleeping was that she was afraid to fall asleep in case she would not wake up. It was through brainstorming with the father and his fiancée that the assistance of the fiancée's father was elicited and the situation resolved.

> So we're [Faith, the girl's father, and the fiancée] thinking, "Well, how can we . . . [allay her fears]?. . . Some of the family had talked with her, but it just wasn't working. . . . So I asked them, "Is there a priest, a clergy that could come and talk with her and relax her a bit?" But [the client and family] weren't very religious; they didn't go to Church and the [father and fiancée] thought that a stranger probably wouldn't work at all. So then I asked, "Well, is there anyone at all, somebody that she might just know, [who] would be able to speak with her about religion a little bit to make her feel more at ease?" And it turned out that [the fiancée's father] was very religious . . . So he came down, and he was a familiar face [to the girl]. After he left, she went to sleep.

Sometimes the nurses borrowed the creative ideas of clients to use them in other situations. Diane described one such instance:

> Some of the ladies make those little bags that they hang on the side of their wheelchairs. They'll put their phone in there or their cigarettes or whatever. And we've been . . . suggesting to people that they use those kind of carry things rather than trying to take a bunch of items at a time.

As Diane indicated below, clients were often active participants in the development of solutions to their problems:

> It's always in conjunction with [clients]. And often . . . when we come with the ideas, they say, "Well, I don't want you using that wooden chair because it's a favorite one" or "It is an antique" or whatever. And so they'll suggest something else. And lots of times they'll have better ideas than we do. They'll think about all kinds of things.

As is illustrated in the above example, clients were also integral and necessary participants in approving or disapproving the nurses' creative ideas. As well, clients were involved in the actual selecting and testing of

creative options. Diane depicted how she encouraged the active involvement on the part of an elderly client in testing out residence options:

> [I said to her], "Go and look at the lodge. See if you like the rooms. Go to the auxiliary [hospital], go to the nursing home, go to the manor. If you decide you don't really like it and you don't want to go there, that's fine, but if you do, put your name in. . . ." A lot of times [clients] don't realize they can go to a lodge and they can [pay for a short, temporary period of time]. I usually say, "Give it a week because then . . . you'll really see what it's like. And then, if it's not for you, you'll know and . . . you'll feel better about it, I'll feel better about it. And if you want to stay here [in the home], then we'll just have more home care come."

There were innumerable examples in the nurses' stories of nurses collaborating with one another. Carol talked of the importance of collaborating with her nursing colleagues:

> More heads are better than . . . one. And if you are having a concern or a problem, then [you] bring [it] up and ask, "What could we do about this?" Sometimes it's just a matter of equipment. And sometimes things are brought up that you think, "Oh, I knew that." But it's good to bring them out in the open. Not to be afraid to bring up the "I really don't know what to do with this person. I'm at my wit's end. I know that they should have a better life than they're having. What can I do for them? So what am I missing?"

Many nurses felt that, in collaborating with each other, they gained support and validation for their creative ideas, as is reflected below in Faith's comment:

> You don't know if you should [use your creative ideas], but you . . . talk to the other nurses, and they'll say, "Oh yeah, that's a good idea. We should try that."

Carol talked about how, during the activity of brainstorming with other nurses, generation of unusual ideas is supported and reinforced:

> It is good to brainstorm, the support and reinforcement. . . . Sometimes you think of [an idea], and you think, "That's silly." But then when somebody else comes out with it, you know, "Oh well, it must be okay."

At times, the nurses found answers in themselves by talking with others, as was described by Gloria:

> Sometimes they had good ideas, and sometimes just, by the time you ruminate and talk in circles, you finally see a solution for yourself.

Diane talked of the value of collaboration in having a larger pool of experiences from which to draw ideas, and Anne noted how bringing together people with different qualities in her office built a stronger team:

> Diane: Experience plays a big part because oftentimes when we're talking about [problems], it is more, "Have you seen this?" or "Has anybody ever done that?" And because we have all worked in so many different kinds of areas, then we can rely on each other to bring our experiences together.

> Anne: [Being able to collaborate] helps us minimize our weaknesses and build on our strengths, because we have those people in the office that are very rigid, set, and structured. And we need those people because there are some people that are real loose gooses. But there is a balance between personalities. It's a group, and the group is better than any individual.

The nurses also found that collaborating with members from multiple disciplines outside the field of nursing further enhanced the pool and mix of experiences. Physiotherapists, occupational therapists, social workers, and speech therapists were among the nonnursing health professionals who were most often cited as collaborative partners. In the comments below Anne reflected the thoughts of all the other participants regarding the advantages of multidisciplinary collaboration:

> Some of the [occupational therapists] are really creative. [Occupational therapists] are a different kind of animal, and drawing on their knowledge and their ability to synthesize, to bring together what different professions offer and their perspectives to provide solutions is good too, because they do come from different backgrounds. Even drawing on speech [therapists] for certain things. Maybe a speech therapist would approach it one way and a nurse would approach it another, and together you come up with something that, on your own, you wouldn't have thought to do.

## Involvement of Time, Energy, and Skill

In considering the nurses' creative behaviors, it would be remiss to completely ignore the great expenditure of time, energy, skill, and emotional involvement that was apparent in the nurses' stories of creativity. Although

elaboration of this aspect is most relevant to the discussion in Chapter 4 of the personal and environmental factors that influence creativity, Faith's account of a colleague is enlightening as to the intensity of involvement experienced by the nurse during the creative problem-solving process:

> Faith: The more challenging, [the more] you're constantly trying to think of different ways than [you would] for somebody that's just a simple little—you go in, they follow your instructions. They do what they have to do. They get the supplies you need. That's definitely a lot more clear-cut and easier to deal with. You are not having to think of different things that might make the situation a little bit better.
>
> Researcher: So it can be quite time consuming then?
>
> Faith: Oh yeah, for sure. Those kinds of clients take up a lot of mental [energy]—like Pam; she's mentally drained. Not so much physically, because she's not physically doing a lot for this lady [the client]. But she's totally mentally drained because she's constantly trying to think of different ways to talk to [the client], get around a problem that this lady won't deal with. She said she's just pooped right out because it's always going through her head. It's definitely, I'd say, a lot more time consuming when you are using more creativity.

## Discussion

In the literature, creative processes have been explored on three levels: (a) the sets of activities and behaviors engaged by the creator to produce a creative product, (b) the internal thought processes involved in creative thinking, and (c) physiological explanations for creative thought. In order to provide a basis for discussion of the mental and physiological processes, a discussion of the literature in relation to the study findings will focus first on the creative process as a set of behaviors. Those behaviors will then be examined in relationship to the physiological and cognitive processes involved.

## The Creative Process

The behaviors described by the participants in their stories of creative experiences were consistent with those discussed in much of the literature pertaining to the creative process. Many scholars of creativity have made strong associations between creativity and problem solving, and the majority of models depicting the creative process have been outlined in a linear, stage-by-stage process that resembles a problem-solving process (Amabile, 1990; Blissett & McGrath, 1996; Csikszentmihalyi, 1990; DeGroot, 1988; Ebert, 1994; Feldhusen, 1995; Ferguson, 1992; Grossman & Wiseman, 1993; Manfredi & DeResti, 1981; Osborne, 1963; Sternberg, 1988; Torrance, 1994). The process begins with the presentation or discovery of a problem. Following this, absorption, or intense, deep involvement, in gathering information and analyzing the situation from all perspectives occurs. This stage may entail a breaking down and sorting of the relevant findings and a redefinition of the problem (Lipshitz & Waingortin, 1995; Sternberg). Possible responses or alternatives are then generated and considered. This phase frequently entails a process known as *incubation,* in that the creator dismisses the situation from conscious thought, allowing it to "simmer" subconsciously until a creative idea comes to light in a state of illumination or inspiration, typically known as the *"Aha!"* experience. Brainstorming, questioning the status quo, synthesizing and combining ideas from past experience to create a new idea, and being alert to serendipity are other techniques frequently mentioned in the literature associated with the generation of creative ideas (Feldhusen; Ferguson; Manfredi & DeResti; Manion, 1990; 1993). The final stage in the creative process involves relating the creative idea to the realities of the world, where it is evaluated,

refined, reworked, and verified by the creator, as well as by others in the relevant culture or discipline.

A model conceptualized by Isaksen, Dorval, and Treffinger (1994) succinctly outlines the above creative problem-solving process in a way that closely resembles the experiences of the nurses in this study. This model consists of three stages, with six steps. The first stage involves understanding the problem through the steps of mess finding, data finding, and problem finding. The second stage is the stage of generating ideas with the step of finding ideas. Finally, the stage of planning for action involves solution finding and acceptance finding.

Most theorists who have outlined a linear process have acknowledged that their models are ideal and that the process may involve movement back and forth through the stages. Other authors have envisioned models less linear and delineated. Ebert (1994) presented a model of creative thinking that is in the form of a spiral to convey that every creative experience changes the knowledge base of the individual and is therefore unique. Cawelti, Rappaport, and Wood (1992), in collaboration with a group of visual artists, envisioned a model that is not so clearly divided into a succession of components. "The artists experience a definite sense of many things going on at once—working out new ideas, trying old ideas, experimenting, going backwards, going forwards—simultaneously" (p. 92). This description of simultaneous and fluid movement between the elements of the process somewhat reflects the nurses' experiences and may explain why the nurses had difficulty expressing their thought processes chronologically and linearly. The nurses themselves admitted that they did not perceive the process to be a linear flow of events.

Perhaps, however, creativity is, in itself, not a process, but a phenomenon that lies within other processes to bring about qualitatively different outcomes (Mellou, 1996; Slabbert, 1994). Slabbert proposed such a viewpoint:

> Because of previous experience and under the influence of the nature of the situation, man's behavior in the creative process is less (automatic, customary, conventional) or more problematized (problem-solving, creative behavior). Also, the nature of the experience of the situation may cause one to start the process of choice (behavior) with vague, open constructs which result in the course of the process (behavior) in new constructs which are evaluated and valued as an improvement of the existing construct system. From this it is clear that no specific process can be described as a creative process—it is the choices being made during the process with regard to the initial constructs that will characterize the process as a creative one or not. (pp 61-62)

## Physiological Explanations and Internal Thought Processes

If one takes the stance that creativity is not a process per se, but a qualifier of other processes (in the case of the nurses, the problem-solving process), and if the nurses employed a problem-solving process in their creative experiences, what are the characteristics in the nurses' experiences that distinguish more creative application of the problem-solving process from that which is automatic or routine? It appears from the study data that when the nurses were acting more creatively, a more intense employment of time, energy, and varied thinking skills was involved. The nurses found that they needed time to get to know the client situation, to reflect on the problem and possible solutions, to collaborate with others, and to experiment with different options. High levels of emotional and intellectual effort were exerted in creative situations. The nurses frequently expressed emotional drain, particularly in dealing with the most challenging cases.

In the literature, creativity was described as an active process requiring intent and effort (Aleinikov, 1994; Demetrulias & Shaw, 1985;

Ebert, 1994; Grossman, 1994; Manfredi & DeResti, 1981; Manion, 1990; Pesut, 1985). As well, two of the defining attributes found in a concept analysis of creativity in nursing conducted by me prior to this study also reflected the intent and effort involved in the creative act: "An intention to achieve a goal exists," and "sustained effort or energy is expended in working toward the goal" (Tarnowski, 1995, p. 20). Even when creativity arises from what appears to be chance or serendipitous occurrences, some theorists have proposed that intent and direction exist in that these random events are recognized, mediated, evaluated, and selected by logical, systematic mental processes such as pattern recognition and synthesis (Baker-Sennett & Ceci, 1996; De Chumceiro & Yaber O, 1994; Eysenck, 1994; Grossman, 1994; Loehle, 1994; Peile, & Acton, 1994; Perkins, 1994). For example, for Diane, in her story of seeing the box in the fridge, to recognize the box as a potential solution to the diabetic client's problem of forgetting to take her insulin probably required a complex assimilation of information from past experiences with diabetics, forgetful clients, insulin, and boxes. Similarly, nursing scholars are finding that intuitive perceptions such as those described by the nurses in this study involve acute and sensitive perception and pattern recognition, based on knowledge from extensive experiences (Benner & Wrubel, 1982; Jenny & Logan, 1992)

Physiological explanations of the creative process evolved from the split-brain studies of Sperry and Gazzaniga in the 1960s (Holbert & Thomas, 1988; Piirto, 1992). These studies demonstrated that the right and left cerebral hemispheres function differently in processing information. Whereas the left hemisphere specializes in processing information logically, linearly, and analytically, the right hemisphere functions in a nonlinear, holistic, simultaneous, and intuitive mode (Demetrulias & Shaw, 1985; Epstein,

1996; Feldhusen, 1994; Ferguson, 1992). Early proponents of hemisphericity theory believed that the right hemisphere was responsible for creative thought. However, more recent research has suggested that all thought processes, including creativity, involve an interplay of the functions of both sides of the brain. This was frequently referred to in the literature as *whole-brain thinking* (Holbert & Thomas; Piirto; Torrance, 1994).

The literature devoted to the study of the thought processes involved in creative thinking was so extensive and divergent that grasping and summarizing it challenges one's own full range of mental faculties. However, some of the intellectual activities suggested in the findings of this study reflect the various mental processes identified by theorists as indicators of creativity (Baker-Sennett & Ceci, 1996; Csikszentmihalyi, 1996; Epstein, 1996; Mellou, 1996; Piirto, 1992; Sternberg, 1988; Torrance, 1994; Woodman & Schoenfeldt, 1990) These include (a) perception of subtleties and detail; (b) recognition of patterns and similarities; (c) nonrational mental processes such as subconscious thinking, intuition, and emotion; (d) divergent thinking abilities in redefining the problem and in considering a multiplicity and variety of perspectives and options; (e) convergent thinking in assimilating and synthesizing information; and (f) analytical, linear thought processes in sorting and prioritizing information and evaluating ideas. Although there is genetic predisposition regarding these abilities, it has been found that, through awareness, training, and practice, these processes and, ultimately, creative ability can be strengthened in most people (Blissett & McGrath, 1996; Feldhusen, 1995).

Some authors have described how, during the creative process, oscillation occurs between the different modes of thinking (Daniels-McGhee

& Davis, 1994; Rowland, 1994; Udall, 1996). For instance, Udall described shifts from linear and rational thought processes to nonrational modes as the creator progresses from the phase of problem definition and analysis to idea generation. Once a creative insight emerges, thought processes return to a more analytical mode as the insight is tested, verified, and judged. The nurses' thought processes were not explored to a great depth in this study. However, the alternation of mental processes in the nurses' creative experiences in this study does not appear to follow the above pattern strictly.

## Implications

Although the findings from this study reflect the experiences of a small group of nurses and are not generalizable, several implications for nursing practice, education, and research are suggested. In regard to nursing practice, one of the participants, Gloria, expressed how recognizing and naming the steps in a process equips an individual with a guide for actions:

> You can identify the way that you think, and you'll have a name for it. Then you might have a little bit more concrete way of identifying what the steps are that you go through. So, then, maybe when you're stuck, you'll be able to [think], "Oh, well, this is the next progression for this thing." I think sometimes being able to articulate what you're doing helps you to do it because you know where you're at in the process.

With this notion in mind, because the nursing process is essentially a problem-solving process, creative problem-solving models such as the one developed by Isaksen et al. (1994) could be incorporated into a framework that is already familiar to many nurses in practice.

Becoming aware of the behaviors that characterize creativity in practicing nurses is also the first step in illuminating the specific behaviors and skills we should be cultivating in educational curricula and continued

learning programs in order to develop creativity in nurses. For example, because the study findings indicate the use of a full range of mental processes during the creative experience, approaches and techniques suggested by the proponents of whole-brain thinking (Holbert & Thomas, 1988) may be relevant for nursing education.

It is important to keep in mind that knowing about the creative process is only one piece of the puzzle. Implicit to knowing what the creative behaviors are is knowing what conditions support or facilitate those behaviors. For instance, the findings in this study suggest that it is important for administrators, educators, and clinical nurses to consider how learning and practicing nurses are being provided with the time, energy, and resources necessary for creativity to occur.

The endeavors of this study were intended merely to whet the interest of nurses at all levels to search for the meaning of creativity in their practice and to provide some preliminary directions for future research. The study of creativity in nursing presents many valuable research opportunities. To understand creativity in nursing fully, all facets of creativity, such as the product, person, and press, as well as the creative process, must be explored and integrated (for findings from this study related to these topics, see Chapters 2 and 4).

In order to expand and validate the findings from this study, replication with other groups of home care nurses is warranted. Also, because creativity takes on different meanings and dimensions for different cultures, it would be worthwhile to study and compare the creative behaviors in other specialty areas of nursing. As well, identification of the specific and complex and frequently unobservable behaviors involved in nurses' creative experience is necessary before research tools to measure

creativity that are specific and meaningful to the discipline of nursing can be developed. Field observation may be a worthwhile avenue of study to explore creative behaviors objectively with more immediacy and in more detail than what can be accomplished through nurses' recall of their experiences. An area of interest to many disciplines that has not been greatly explored is group or collaborative creativity (Guastello & Shissler, 1994). In that the data from this study offered a preponderance of examples of collaborative creativity, this may be an area where nursing research may make advances that are of benefit beyond the boundaries of one discipline.

## Conclusion

Creativity in the experiences of the home care nurses in this study could not be distinguished as a process in and of itself. Rather, creativity seemed to be a qualitative effect superimposed on the problem-solving process. More extensive employment of various mental faculties and skills, as well as more intense involvement of energy and time, were the characteristics that distinguished creative problem solving from that which was automatic or routine. Collaboration with clients, members of other health disciplines, and nursing colleagues was of key importance to the nurses' creativity in all aspects of the creative experience. The findings of this study only begin to explore the creative behaviors of nurses in clinical practice. There is much yet to be learned about how to develop and nurture creative behaviors in the nursing student, the clinical nurse in practice, and the health team. Creativity in nursing, like a baby, needs to be carefully and knowledgeably watched and nurtured in order for it to develop to full potential.

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# CHAPTER 4

## WHAT DO YOU NEED TO DRESS BACKWARDS?

## CONDITIONS FOR CREATIVITY IN HOME CARE NURSING

My four-year-old son likes to dress backwards. Although his personal dressing style defies all conventionality, he manages to achieve most objectives of dressing such as modesty, warmth, self-expression, and comfort (in spite of my scepticism, he insists that wearing underwear backwards *is* comfortable). There have been positive outcomes from his unique behavior in that he has mastered the skill of dressing, added a touch of humor to the lives of people who know him, and made a lasting impression when he leaves a room. Most importantly, he has gained pride, confidence, and enjoyment from being able to dress his own way. Perhaps the fashion designers of today were, in their childhood, original dressers like my son.

How does the rugged individualism of a preschooler and the rationalization of his unusual behavior by his rather uneasy mother relate to creativity in nursing? All children, including my son, are creative. In learning about the world, they must continually be creative in responding to stimuli that are new to them (Grainger, 1991). Over time, children try various approaches in dealing with situations. They may use methods that have proven to work in the past. They may choose a path that they know will be most acceptable to others. Or they may try something new and innovative. A complex interaction of many factors within the individual child's make-up and environment will influence whether or not the child will act creatively. Similarly, a nurse's actions in clinical practice are shaped by a complex combination of intrinsic and extrinsic conditions, factors arising from within

the nurse as well as from circumstances, people, and events encountered by the nurse in present and past situations.

In the past, creativity has been discouraged in nursing education and practice settings (Jones, 1983; Klakovich, 1994; Manion, 1993; Murphy, 1985). Attributes and behaviors associated with creativity such as autonomy, nonconformity, and the questioning of rules and policies were not considered desirable in the nurse. Rather, nurses were socialized to be submissive, dependent, and conforming. Furthermore, past reliance on logical-positivist approaches for the development of nursing knowledge has led to the devaluation of certain mental faculties important for creativity, such as holistic perception, emotion, intuition, imagination, and subconscious thought (Cunningham, 1989).

Current nursing literature has reflected increased acknowledgement of creativity as a desired quality in the nurse. Pesut (1988) identified several nursing authors who deemed creativity to be "the key value and attribute of the professional nurse" (p. 100). Many authors foresaw creativity as important in light of the following trends: (a) present and future times of rapid change and increasing complexity (Holbert & Thomas, 1988; Wilson, 1991), (b) economic constraints that challenge the preservation of quality care (Curran, 1994; Murphy & De Back, 1991; Shamansky, 1992), (c) the advent of health care reform that requires more autonomy in nursing practice (Jones, 1983; Shamansky), and (d) the need for creative researchers and scholars in the advancement of research-based nursing knowledge (Duldt, 1995; Fuqua, 1990; Lego, 1993; Pesut, 1985).

As well as calling for creativity in the discipline, nursing authors and academics have devoted many a written page to describing barriers to creativity and ways that creativity can be enhanced. However, their ideas

are largely adopted from other disciplines or based on the research of nursing students. What has been learned from these sources may not accurately or meaningfully apply to the nurse in the clinical setting. A descriptive study using qualitative research methods to explore the creative experiences of home care nurses has revealed insight into some of the conditions that made creativity possible in their practice.

## The Design of the Study

### Selection of Participants

Six home care nurses from five offices within one region in central Alberta were selected to participate in the study. The participants, ranging in age from 27 to 47 years, were all registered nurses who provided direct care to clients in rural and small-town communities. They had been working in the area of home care for from 1 to 14 years, three being full-time employees and three, part-time. All had previous or current experience in a wide variety of other areas of nursing, including intensive care, acute care and extended care settings; pediatrics; gerontology; mental health; midwifery; and administration. Three of the participants had completed undergraduate nursing degrees, and one was currently enrolled in a nursing degree program. One of the other participants had certificates in midwifery and psychiatric nursing. All but one participant reported having creative involvements outside of nursing. The activities cited were diverse, including parenting, sitting on boards, coaching sport teams, taking music lessons, painting, and crafts. See Appendix G for a more complete description of the backgrounds of the participants.

## Data Collection and Analysis

The participants were involved in two audiotaped interviews that focused on descriptions of times when they thought that they or their colleagues had been creative in nursing practice. Although the interviews were unstructured, a set of questions that I devised guided the interviews to explore the following research question: In what ways does creativity manifest itself in the experiences of practicing nurses? One underlying research question that addressed issues related to the conditions of creativity was, What factors influence creativity (intrinsic and extrinsic factors)?

Data analysis was conducted concurrently with data collection so that findings could be validated, elaborated, and clarified in subsequent interviews. Transcripts of the interviews were examined contextually and line by line for recurrent patterns and themes. Techniques from grounded theory described by Strauss and Corbin (1990) and methods of concept analysis outlined by Avant (1993) and Walker and Avant (1995) were used primarily in the analysis of the data to identify themes and to decipher relationships between the themes. For example, in fitting the themes into the paradigm model of grounded theory, those themes related to conditions of creativity separated into two subcategories: (a) the context, or those immediate conditions and factors within which creativity occurred; and (b) intervening variables, the broader conditions within which creativity occurred. Although the relationships overlapped somewhat or were interrelated, the majority of themes about the environment or creative climate turned out to be related to the context. Because the personal or intrinsic factors had evolved over time, they were perceived as intervening variables.

In using a concept analysis approach, themes related to the conditions that influenced creativity were seen as antecedents of the creative experience. A concept analysis of creativity in nursing based on my own experiences and literature was conducted prior to beginning the study (Tarnowski, 1995). This served to bracket my own perceptions and beliefs, heightening my awareness of potential researcher biases during analysis. As well, a review of the study findings with the concept analysis provided an avenue for checking the completeness and plausibility of the findings in light of past theoretical literature. Although, as one would expect, the findings of the study were more specific, they turned out to be consistent with the antecedents proposed in the concept analysis.

## Findings

Pseudonyms are used in this paper in order to maintain the anonymity of the participants. In their stories of creative experiences, the nurses described personal as well as environmental factors that helped or hindered them in being creative. Figure 4-1 is a visual representation of these factors as they are described in the study findings below. The intersection of the circles in the figure reflects the interactive nature of all intrinsic and extrinsic components. Although the factors are isolated for the description and discussion of the study findings below, it must be kept in mind that the conditions surrounding any one of the nurses' creative experiences were comprised of a complex interaction of intrinsic and extrinsic factors. For example, many extrinsic factors influenced the development of the qualities or traits found in the creative nurse. At other times, however, the nurses described situations where personal strengths enabled them to defy or transcend negative environmental conditions in acting creatively.

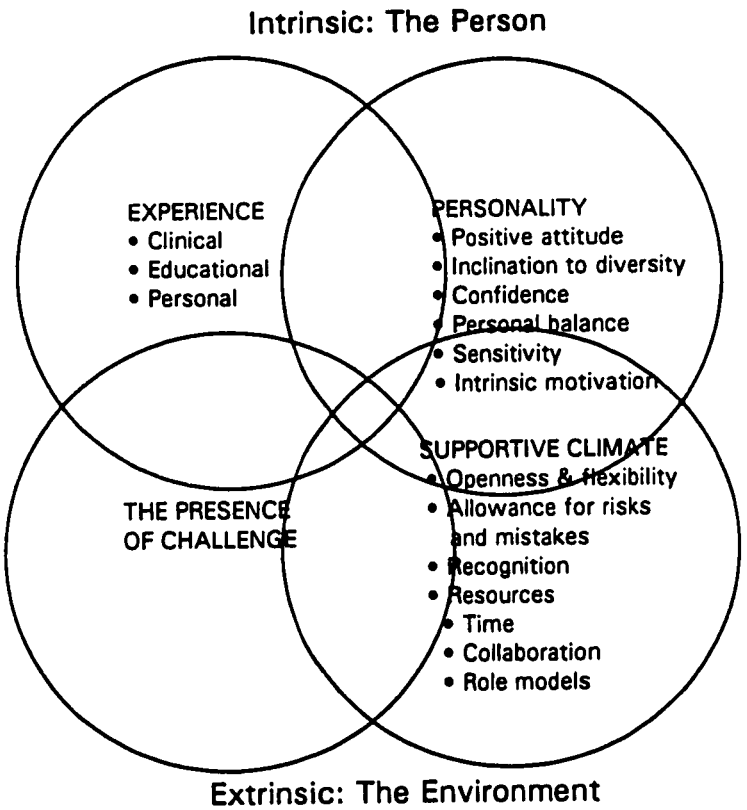


*Figure 4-1.* The conditions that are conducive to creativity in the experiences of six home care nurses.

## Intrinsic Factors

The study data related to intrinsic factors gathered into two major themes, *experience* and *personality dimensions,* the traits and attitudes within a person described by the nurses as important for creativity.

### Experience

For all of the participants, experience was key to becoming a creative nurse. Experience was seen to contribute to creativity in a number of ways: (a) in accumulating a repertoire of experiences from which creative ideas could be adapted and generated, (b) in learning creative thinking skills, and (c) in gaining the confidence to work autonomously and to venture beyond conventional or predictable approaches. In the nurses' stories the

experiences that influenced their creativity in the above ways arose from clinical practice, educational sources, and aspects of their personal lives.

**Clinical experience**. Clinical experience was the type of experience most frequently mentioned by the nurses as important to their creativity. Three of the participants did not consider themselves to be inherently creative but felt that with experience in home care nursing, they had learned to be creative. It is noteworthy that two of these nurses had been employed in home care nursing for the shortest periods of time. Faith, the youngest and least experienced, described her situation:

> I don't think I'm that creative. I just think that the more experience you have, the more creative you are. And so being the young kid in the office, I don't find myself creative at all. . . . Now it's getting a little better. I think that, in general, most of the [nurses] around here are a little more creative than I am. I think they just have more experience. . . . And I'm sure that I'm a lot more creative now than I was when I first started nursing.

In two excerpts Faith spoke of how, with experience, she became more confident in working autonomously and during group brainstorming sessions:

> In home care you have to be so independent in your thinking. You are not following somebody's orders all the time, and that's the fun part. It's kind of scary at times. When I first started I was scared, thinking, "How am I going to figure out something? The doctor's not going to be there, or there's not going to be a nurse there, right at my side to say, 'Well, do this.'" . . . Then once I got into it and started feeling more confident with my own judgement and with my instincts, then I felt good about telling people, "Well, you should try this," or "I've found in the past that this works for this symptom." I've had to think a lot more on my own.

> Most certainly, confidence is a big thing because at first you [think], "Wow, that sounds stupid; I'm not going to say that." So you build up your confidence to be able to speak out and give your ideas. But at the same time, having an experience to back it up is just so much easier. Knowing that it worked and that it's possible is a big thing.

Diversity and intensity of challenge in an individual nurse's past experiences were seen to enhance creative ability. Participants and other

nurses in the home care offices commonly recommended as most creative those nurses who had extensive clinical experience working in remote areas or under extremely abject conditions. Diane's comments below illustrate how diverse clinical experiences add to the nurses' practical knowledge base, to be creatively used or adapted in new situations:

> Experience plays a big part because oftentimes when we're talking about [problems], it is more, "Have you seen this?" or "Has anybody ever done that?" Because we have all worked in so many different kinds of areas, we can rely on each other to bring our experiences together.

In describing the situations of colleagues who had entered home care nursing directly from nursing school, Anne talked of how important she thought clinical experience in settings such as hospitals was to gaining a level of practical knowledge and confidence needed to work comfortably in home care:

> There are a few among us who have come right out of [nursing] programs and worked in [home care]. I admire them because it's got to be harder. You really do draw on so many different areas that you've worked. And to not have that experience behind you, I don't know how some [new grads] do it. . . . They don't really get to have good experience on a general medical floor or a general surgical floor to get their comfort level up.

**Educational experience**. Formal educational experiences were also perceived as being influential in shaping the nurses' capacity for creativity. All study participants originally had been educated in hospital-based programs, and all, except the youngest, felt that the hospital-based programs had not been conducive to creative thinking in that they had been taught set responses to situations within a relatively consistent environment. However, in dialogue, Carol and Edith agreed that although their nursing education in hospital-based schools had not fostered creativity, the programs had provided basic knowledge that could later be creatively adapted:

> Carol: I think [creativity] is learnable. I think . . . a lot of skills are learnable. Obviously, some people are not capable, but you get that in any learning situation. But I certainly think it is a skill that you can pick up.
>
> Edith: I think that in nurses' training, going back to our generation, we were taught there was one way of doing it, and it was the right way. And I'm not saying that a person should not wash their hands, but this is an example that comes to mind. [When you learned to give an injection], it was a very set rule. You washed your hands and you took the needle out of the sterilizer, and then you washed your hands again, and then you didn't burn them [chuckle]. It was very, very logical. I'm sure we all knew that once you got out and you moved into the ward, that didn't happen. But you were—at least I was—conscious of the fact that we were not doing it right. That led to a certain amount of the feeling that you weren't crossing all your t's and dotting the i's, and it took me years to realize that in some circumstances it was best not to cross the t's and dot the i's.
>
> Carol: But you learned it.
>
> Edith: You learned it. You have to unlearn it. But you see, the point is that that system is a good one, is an excellent one, because you need a basis.

The three nurses who had completed their baccalaureate degrees felt that the university programs had strengthened their creative abilities by increasing their tolerance for ambiguity and diversity, by promoting a variety of thinking approaches, and by broadening their knowledge base:

> Anne: I think there are life experiences that enhance [creativity] and I think that my degree . . . broadened my perspective on the world and on people and on my profession.

Diane found that the university program, in contrast to her hospital-based education, had enhanced her ability to consider multiple options from a broad knowledge base:

> I don't mean to criticize the hospital-based programs, but I trained in [a hospital diploma program], and when we graduated, we were nurses to work at [that hospital]. I wasn't flexible enough because I had only trained that way. . . . You weren't really taught to brainstorm. Everything had a procedure and a protocol. If you weren't sure, you'd go look it up in the manual. There was nothing about using your brain to do that. But home care and the degree program are based more on [being flexible and using a broad experience base]. That's why you take all of those other courses. People will say to me,

> "Well, why did you have to take sociology and psychology for nursing? You want to change a dressing." But it's not [just changing a dressing]. It's . . . thinking back and trying to go through all the experiences to think which ones work and which ones didn't work.

Gloria, however, who was currently in a post-RN degree program, conceded that any educational experience enhanced creativity:

> I think any kind of learning makes a difference in your ability to be creative because it gives you different ways to take your mind on a different journey, to find maybe the same solution that you would have found in another way, but along the way you find other elements or identify other things that are helpful. So I think by taking BScN courses, it will help me with my creativity. And I think if I continue taking painting courses, it will help too because . . . that is going to lend something different.

To a lesser degree, the nurses mentioned the need for continued learning and maintaining a current knowledge base and technical know-how. The data revealed a number of sources of new information, including nursing journals, inservices and conferences, and information learned from clients.

> Edith: The other thing that I think you have to do to be creative. You cannot be stagnated in your own personal growth. You have to continue to educate yourself. You have to continue to live in the world and know what's changing, particularly in nursing, in terms of dressings and catheters and science.

**Personal experiences**. Some of the participants also described influences from their personal upbringing and life situations. Edith attributed the influence of creative parents as being central to the development of her own creativity and to her philosophy that humans are morally obliged to use their creative abilities fully. Carol, Edith, and Gloria also mentioned that raising children had strengthened their creative abilities. Carol relayed how she used the same creative approaches of borrowing and adapting that she used in nursing in her family life:

> Even in my home life with the kids and everything, I see things and think, "Oh, that would work well here" or "That would be good."

Gloria talked of how painting reinforced an important attitude for creativity:

> A willingness to fail is a critical element in creativity, not just in nursing but in pretty much anything. I'm trying to teach myself to paint, and the wonderful thing about it is that I have no expectation of it turning out well. . . . I just do it because it makes me feel wonderful, and I don't think of anything else at the time. So you have to be willing to have a mess.

## Personality Dimensions

Although the nurses were unanimous in their opinion that most people could learn to be creative, they believed that certain personality traits disposed some individuals to be more creative than others. The personality traits cited by the nurses can be clustered into four major themes: (a) a positive attitude, (b) an inclination toward diversity, (c) confidence, and (d) personal balance.

**Positive attitude**. In order to be creative, the nurses agreed that one must first possess a positive attitude, a conviction that solutions could be found for even the most difficult problem. Anne, who coined the term *can-do attitude* for this positive frame of mind, described it in the following way:

> I think you need broader thinking. I don't think I'm artistic, but I think I have a broader thinking. Once you think, "We *can do* this somehow," instead of "We can't do this any how, any way," then you are probably ready to make the leap and to decide how it is going to work.

At times this positive attitude was the driving force behind the nurses' persistence in their search for solutions not easily found. Diane's account illustrated this type of persistence:

> I hate that word *can't*. There has to be something; I can't believe there isn't something. There must be something that we can do. There must be some way we can approach it or fix it or change it or make it better. I was just seeing this lady yesterday. Bilateral mastectomies. Severe pain in both her sides, but especially in her right side, and she is right handed. She could barely lift her arm up to her shoulder level. All the doctors told her that there was nothing that could be done. I can't believe that. There must be some kind of pain killer, there must be some kind of nerve drug, there must be something. So we sent her to the pain clinic in [a major city approximately 200 kilometers away]. [The doctor] did a nerve block—

> the first time she's been pain free for two years. She went to San Diego with her husband for five weeks and had a wonderful holiday. I said to her, "See, I couldn't believe that; there must, there had to be something."

Inclination toward diversity. As well as positiveness, the nurses saw that being open to diverse viewpoints and ideas and being able to deal with a variety of situations were important to creativity. These qualities are encompassed within the broader category of inclination toward diversity. An inclination toward diversity can be seen in the nurse who enjoys novelty and change and who is flexible. All of the participants declared that they derived much satisfaction in home care nursing in that each day and each client situation was different. They saw the creative nurse as one who seeks novelty and change. Some of the participants related stories about how they switched caseloads or, when time permitted, changed routines for the sake of change, to avoid becoming stagnant in their work or to improve services.

In the nurses' examples of creativity, being open to the different characteristics and viewpoints of clients allowed the nurses to function when, more often than not, they had little control in situations that were client driven, ambiguous, and unpredictable. Diane talked of actively supporting diverse client beliefs as one of the mandates of home care nursing:

> Diane: Supporting people in what they believe in, I think that's a really strong focus for home care. And I think that's why some of us that worked strictly hospital based have a really hard time sometimes, allowing the client to be wrong or to decide for themselves.

Edith and Carol in conversation together related the need for openness when working in the domain of the client's home:

> Edith: Whereas, with us, when you go into somebody's home, you can't say to them, "Listen, hang your IV pole on the fridge because that's what Mrs. So-and-So down the road is doing." This person, in their house, if they want to say, "No, I'd rather hang it in the back of the dog's tail.

> Carol: These people are on their own. You can't go saying, "No, no, you can't do it like this; do it this way," because you're not there 24 hours. You walk out, they'll do it how they want to anyway. So you have to support how they want to do it.

Another quality noted by the nurses that is associated with an inclination toward diversity is an openness to questioning traditional and established approaches, to ask the question, "What if?" Below, Anne talked of her experiences as a novice nurse learning to question established ways, and Faith described being open to new ideas:

> Anne: Just that questioning, "This needs to be done this way," and [senior nurses] would say to me as a young person, "Did you really think it needs to be done this way?" Then you say "Well, no, you're right. It really doesn't!" . . . What else is a Sacred Cow?

> Faith: If you think just one way all the time, if you're not open to new ideas, then I can't see you being creative. . . . Some of the nurses here have just tried all these different things, more bizarre things. I would say that if I had an idea, they'd be a lot more open to it than somebody that just goes by the book and isn't willing to sort of deviate a bit.

Edith and Carol agreed that from openness comes flexibility, that an individual needs to be open before he or she can be flexible. Whereas openness was conceived as the ability to accept unusual and multiple viewpoints and approaches, flexibility was seen as the ability to put openness into action, to generate different ideas, and to make them work. In describing a creative colleague, Gloria reflected the quality of flexibility:

> It seems to me that Lorna always has ways of working around the barriers people set up, [barriers] like, "Well, no, we can't do things this way," or "No, this person can't be in the community." She just always seems to find alternatives or makes a referral to somewhere, or pulls something else out of the hat. To me, she seems very creative.

A specific type of flexibility mentioned by the nurses was role diversity. The nurses found themselves carrying out a variety of tasks not usually associated with the responsibilities of nurses or within the job description of a home care nurse. Anne described role diversity:

> You'll be in some place and you'll think, "Here I'm trying to solve this family's problem. Now where the heck in my nursing training and education did anybody ever teach me anything about engineering, how we're going to do this seat?" Or you're trying to think like a seamstress sometimes, because you're creating different clothing. So you think, "Where the heck in my nursing training did I ever learn this?"

Confidence. Confidence was exhibited in a variety of ways in the nurses' stories. As mentioned earlier, confidence was built and bolstered by experience. Many of the nurses spoke of confidence in terms of self-reliance, in trusting one's own abilities. Diane dramatically related the need for self-reliance in creativity:

> When I first came here, I think that those of us that were hospital-based nurses found it really hard, because you take different kinds of risks in a facility, but a lot of them you have control over. Because the equipment is there, the doctor is there, or coming, there [are] standard orders, there [are] other resources right there. But when we go to the home and it's you, it's you!

From confidence springs the courage to take risks, to be willing to fail when trying out new and unconventional ways, as was described by Carol:

> That you know what you're doing. You know as much as this person, and if this person says it has to be done this way, but you can see there is a better way, . . . you've got enough confidence in yourself to say, "Let's try this." And it may work and it may not. Knowing that you might fail as well.

Edith, who claimed to be more bold than creative, related one experience where she needed self-confidence to allay feelings of self-doubt and rejection from others:

> We had a family conference on a client at the hospital, and this gentleman was failing. He was at the stage where he would not be able to go back to the lodge again. . . . And they were talking about placement, which the family was very opposed to. Then I said, "Well, of course there is another option—that . . . [the family] could take him home." And everybody kind of looked at me; their mouths fell open, and I thought the doctor would have a seizure, not to mention the nursing staff who were there. And I thought, "My God, let the ground open and swallow me! Why did you say that, Edith? . . . But I thought, "No, the reason I'm here, I'm representing home care, and the mandate of home care is to keep people in their own home. . . . In the past, if I had said that, I would have beaten myself to death.

> . . . But I have gone beyond that, and I now realize that people have to be presented with the options. . . . I guess that's the point: There's risks involved. In being creative you have to know that what you're suggesting may fail, and it may be the worst idea ever, but at least it was presented and dealt with and rejected.

In a negative experience, Carol explained how she felt that fear, or a lack of confidence, contributed to the lack of creativity in a group of nurses with whom she once worked:

> I put it down to fear. They're frightened of anything new, any new experience. Maybe they just don't think they're capable of bringing in anything new, so they carry on doing what they've been doing forever and a day. . . . They are not able to adapt to anything new, even though it might be better and it might, in the end, help the patient and the client. But they're just, so, "This is it. This is how you do it. That's all there is to it." And the only thing I can put it down to is that they're afraid of new experiences, which is very sad. They don't grow very much like that.

Honesty as a type of confidence was cited to a lesser extent in the nurses' stories. It took courage for nurses to admit their limitations and to deal with situations truthfully:

> Carol: It's good to bring [problems] out in the open, and not to be afraid to . . . bring up, "I really don't know what to do with this person. I'm at my wit's end. I know that they should have a better life than they're having. What can I do for them? So what am I missing?" . . . Basically, to know your limitations, to know "I'm really not doing very much for this person. I need help."

> Edith: I'm talking in terms of looking at a situation and dealing with that, not [thinking], "Are we doing it so that the neighbors will see it? Are we doing it so that this will go to my time sheet? Are we doing it to keep the doctors happy?" You have to get to the core of it and deal with it truthfully and simply. That's creativity.

**Personal balance**. All of the nurses agreed that having the confidence, focus, and energy needed to function creatively at work depended upon maintaining balance and stability in one's personal life. In separate interviews, Faith and Gloria discussed the need for balance:

> Faith: If you're having a hard time with your personal life, or your self-esteem is down because of your personal life, then you're not going to have the confidence. First, you probably won't even have the energy to open your mind to new ideas. But at the same time,

> even if you thought of something, I don't think your self-esteem, confidence, would be enough to pursue it or offer it as an idea. I think you would have to be balanced in all your life to be like that at work as well.

> Gloria: I think it is more difficult to maintain balance if you are more open with people and if you allow them to sort of touch who you are and allow you to touch who they are. But to me, I wouldn't want to be in nursing if I had to practice it like that. Some days, though, I just feel really either exhausted or saddened by the things that we see, particularly in palliative care. But I think sometimes we just really have to recharge. And maybe that's another barrier to creativity, when you're just depleted. When you just don't really have anything left to give any more. And then you need to stop for a while, whether it's to take a holiday or get yourself out of the situation for a while or change caseloads or clients.

## Extrinsic Factors

In their stories the nurses also talked of situational conditions that stifled or promoted their creativity in terms of two major themes: the *presence of creative challenge* and a *supportive climate* in the workplace.

### Presence of Challenge

For full elaboration on the findings and discussion related to the presence of challenge, please refer to Chapter 2. All participants emphasized that the very nature of home care practice necessitated creativity in that nurses worked relatively autonomously in diverse and unique client situations, often within the constraints of limited resources. This is reflected in Carol's and Anne's statements below:

> Carol: I think you have to be [creative] in this job, full stop, especially dealing in people's homes. You know, you don't have the facilities.

> Anne: If this situation is the same as another one, and another one is the same as another, you don't really stretch your boundaries much. But if a situation is rather unique, then you have to stretch. . . . And the problems can be quite varied. They may be financial problems. They may be space problems in a house. So there's a whole number of kinds of problems. It isn't always one kind of problem.

The nurses found that the greater the need or challenge, the more they were compelled to use creativity. Gloria's statement below reflects the sentiments of all participants:

> Sometimes I think a bit of stress enhances creativity. If you have everything at your disposal, then you never have to think of a new way to do something. Or if you have a [client with] an easy-going personality, everything goes along fine. But if you have somebody who's a little more difficult to deal with, then it makes you try some different strategies as to how to approach them and how to cope with them.

However, it was possible that the problems could reach such a level of difficulty that they were frustrating and inhibited creativity, as noted by Anne:

> I think [that] conditions that are a little tougher enhance creativity. Also, if it gets to be too tough where you are just too frustrated and too tired, then you probably have a tendency to just do what's obvious and forget to think beyond the immediate possibilities. So maybe [there is] an optimal level of that.

## Supportive Climate

On the whole, the nurses felt that their work environments were conducive to creativity in that support existed in all levels of the organization. This support was demonstrated through flexibility and openness to different ideas, allowance for risk taking and mistake making, recognition of creative efforts, and provision of resources necessary for creativity.

**Openness and flexibility**. Anne mentioned an example from her experience that illustrated how an open, positive attitude in the organizational climate of the entire health region greatly affected creativity.

> I think creativity might be a climate or an atmosphere within an organization. . . . For example, . . . when the lab restructured around the province, the regions were all approached to see if home care would draw blood on people that were housebound. Only two regions in the province said, "Yeah, we can do that," and the others said, "No, it can't be done; we can't do it." So it was a really difficult program to set up. We had to all get trained to draw blood. The labs

> had to restructure so that they were using sort of the same approaches. . . . They had to set up couriers to pick up from different pick-up spots. . . . It was a bit of a shift for the doctors' offices too because . . . they [became] just a courier depot, basically. So . . . from the top down, there was a creative process. The whole climate of our program is a "Can Do" and a creative "Let's see how we can do this" kind of attitude. I think that fosters and encourages creativity.

The nurses described their home care offices as places where flexibility reigned, where, in order to meet goals of providing optimal, client-driven care, policies and procedures were loosely applied and an openness to diverse and new ideas existed. In describing this open attitude, Carol compared home care to a less creative organization in which she had worked:

> You should be as creative in the hospital, but sometimes these facilities don't allow you to be, whereas home care does encourage [creativity].
>
> Whereas home care is very willing to listen to you, to say, "You know, I don't think this is working, how about if we—" "Oh, wonderful! Try it!" They are very open, I find.

Gloria described a former supervisor who promoted creativity by being flexible:

> [She supported us] to make different decisions sometimes or to maybe go outside the boundaries of what was usual. . . . She was in support of what was practical and what worked at the time, and it didn't have to necessarily follow the bureaucracy. So, you know, we love her.

Diane conveyed the sentiments of all other participants when she talked of the openness among colleagues that resulted from trust and familiarity developed over time:

> I think because the atmosphere is very open, . . . you feel like you can throw out ideas, and if someone is laughing, it's only because we're close enough friends we can do that without hurting each other's feelings. . . . I guess because we've worked together long enough now, we feel comfortable doing that.

**Allowing risks and mistakes**. Flexibility and openness in the organization sprang from trust in the capabilities and expertise of each member. A part of that trust and respect resulted in allowing individuals to experiment, to take risks. Supporting risk-taking behavior necessarily involved recognition of the possibility of failure. Carol spoke of this:

> You're supported, and your supervisors are also open minded, that "Well, yes! Good for you!" I think it gives you the power to think, "Well, I'm on the right track." They also realize that it is not going to work all the time. And then you try again.

**Recognition**. The nurses also found that support for creative endeavors was relayed through words of recognition and appreciation at all levels of the organization. In two separate excerpts Anne talked of this kind of recognition:

> Anne: When it [a creative act] does happen, it's celebrated. It is acknowledged and celebrated. "Wow, this is kind of fun, this is kind of different, this is kind of neat!"
>
> Researcher: Acknowledged at the top?
>
> Anne: All through [the organization].

Gloria described how she most valued recognition from her colleagues in that they could truly appreciate the effort involved:

> Recognition, for sure, really helps and promotes [creativity]. I think for a nurse to hear, "Boy, you really handled that well!" that's a big reward. A lot of times you don't need much else. And I think it means the most when it comes from other people who are doing the same as you are, so they know very well how difficult whatever the situation might be.

Carol talked of another form of support and recognition in regularly held gatherings, where staff would have time to meet socially and exercise creativity at a more playful level. For example, at one party staff members were required to bring their best-dressed banana. Another time, the management sponsored a Christmas luncheon with a humorist as guest

speaker. Carol found that functions such as these helped the staff to feel appreciated for their efforts as well as providing an opportunity for recreation and building collegiality among the staff.

**Provision of Resources**

Support for creativity can also be reflected by the provision of certain resources necessary for creative activity. In the nurses' experiences, time, the opportunity to collaborate with others, and exposure to creative role models were emphasized as the most important resources.

Time. It was unanimously agreed that to be creative one needed time: time to build relationships with clients and to fully understand their situations, time to reflect upon the problem, time to think of and try out solutions. Anne reflected on the necessity of time and how the nurses took advantage of the drive between home care visits as time for creative thought:

> Researcher: Do you initially need some time to think and reflect about the problem?
>
> Anne: Yeah, often you do. And in rural nursing, it's often when you're driving from house to house because you've left a home and you've got twenty minutes or so before you're going to get to the next one. You do a lot of thinking in that time. It seems, again to an administrator who is budgeting, probably as unproductive, lost time. But you spend all that time thinking about, "Okay, we could try this or we could try that" or "What about that?" You spend a lot of time thinking, and I think if you went from one client to another, you wouldn't have that opportunity to reflect and maybe, therefore, wouldn't come up with as creative a solution, because you do need time to mull it over.

Gloria talked of how time was also needed to reflect with others. She suggested that often an overemphasis on production and task orientation jeopardized creative thought and suggested that unstructured time for creative thought and collaboration should be built into their schedules:

> We don't meet together enough either, I don't think, to reflect with each other. To problem solve. It just seems like everything's busy and sometimes, too, I think we maybe are too concerned with busyness, and maybe there should be an opportunity to just go chat with somebody and say, "I'm having trouble with this; what do you think?" We do that once in a long while, but most of the time it just feels like people are on the go. I think it would be better, maybe, if every person had one half day in the office, whether they actually have a lot of paperwork to do or not. Then maybe you would be able to generate some different ideas.

Opportunity to collaborate. Probably the extrinsic factor most valued by the nurses in their creative experiences was the ability to collaborate with others. Collaboration was seen to enhance all stages of the creative problem-solving process by bringing together many and various perspectives, experiences, and skills. The nurses collaborated with clients and their families, as well as with other nurses and nonnursing health team workers. See Chapter 3 for a more further elaboration on collaborative problem-solving.

The nature of opportunities for collaboration varied among agencies. In two of the five offices the nurses reported that they met weekly as a multidisciplinary team to discuss cases. All appreciated the value of this time together. In the other offices the nurses regretted that they did not have time to discuss individual problems, because they met less frequently or in larger joint meetings with other offices. However, all of the nurses in the study found informal occasions to talk with each other about their clients, as was described by Gloria:

> We've tried to have some weekly staff meetings on a day when most of us are [in the office], but we are so busy that very often they don't happen, and we miss that. We're trying to do it . . . because it's valuable. But a lot of times the real sharing happens at coffee if we happen to be in the coffee room together. Or as we're warming up the cars in the morning and everybody is getting ready to go. Or at the end of the day when you are trying to get a few charts done and you are just too exhausted, and you're just sitting around chewing the fat together.

The geographic arrangement of offices also influenced the nurses' abilities to collaborate. In some cases office space was shared between nurses and other members of the team, such as occupational therapists and physiotherapists. Although sharing office space had certain disadvantages, the nurses found that it was conducive to collaboration. Diane had had a separate office in the past, but in her current situation several members of the health team shared one large space. Reflecting on her two experiences, she provided some insight into the nature of the obstacles that separate offices present:

> Where we were before, in the basement of the dentist's office, we each had our own room. So you didn't share ideas the same because you had to actually physically get up and go to a different room, and then [the nurse you wanted to talk to would] be on the phone and then you'd go back [to your own office], and by that time you'd think, "Oh well, I'll just go with this. That's what I've been doing, and that seemed to work quite well." But this [current office] is much more conducive to sharing ideas. That's what happened this morning. [Another nurse in the office] said, "You know, I got this referral from the doctor to go three times a week. What do you think about this?"

Faith, who shared office space with another nurse, Kathy, described how an open-door atmosphere helped overcome the isolation of working in separate offices:

> I think we're close enough here, though, that we talk. I mean, I can hear Maureen talking next door. With our door open we hear each other, so you might go zipping down there because you heard her say something and you [say], "What are you talking about? What did you do?" I might just be having a problem with a client or something that's going on, and I'll mention it to Kathy because she's right here. And then, next thing I know, there's three people in the office and we're all talking about it because they might be just walking by, and Kathy will say, "Well, Maureen, do you know anything about . . . ?

**Exposure to role models**. As well as having the opportunity to be with colleagues in order to collaborate in the problem-solving process, the nurses saw that being around creative people encouraged and nurtured their ability to be creative. Creative inspiration was found in clients, friends, spouses,

and colleagues. Diane talked of how a creative friend inspired her to try new things in her personal as well as professional life:

> She is a very creative person. And whenever I go to her place, . . . [my husband] can always tell I've been there because I'm changing the cupboards and I'm changing the curtains. And it's just incredible, the ideas she has. She's a person that I can go to and say, "You know, I'm going to see this [client], and I don't know what to do. They can't reach this cupboard. . . . And she'll say, "Well, why don't you . . . hook a pulley onto that door by that cupboard, and then sort of like a dumb waiter, he can pull those things up and down."

Many nurses mentioned how clients sometimes had better creative ideas than the nurses themselves. Diane spoke of how a client's creative actions had impressed upon her the importance of attending to details in her work as a home care nurse:

> She just has a lot of neat ideas and spends a lot of time on detail, and I thought that was interesting, not just for my own personal use, but just even her idea that, because I was coming to take her blood pressure, she should have me for tea in the greenhouse—she had arranged to have it in the greenhouse so it would be a peaceful setting. She obviously took that extra effort to arrange those details. . . . And when I left there, I was thinking, "That's right!" because a lot of times in home care when patients or clients are happy with our services, it's those details that they are happy with.

Carol spoke of how creativity in colleagues spurred her own creativity: "When people around you are creative, then it makes you more open to try new things." Gloria related how a creative colleague nurtured creativity in others:

> She's really creative. She's sort of a free spirit in her personal life as well. Some people just have that gift, I think. They can bring out other people's creativity as well and help them to explore their options without making them feel that one idea is *the* idea or the best way, or that *their* way is the best way. [They] help [others] to sift through the ideas themselves.

Many of the nurses found that colleagues had been role models, shaping creativity in others by sharing experiences and demonstrating creative skills. As discussed earlier, Anne learned from more experienced

nurses to question conventional approaches. Anne's commentary below demonstrates how values and attitudes that are conducive to creativity can be learned from role models:

> Anne: I think there are role models. I assumed that where I came from [previous job] was the way home care always was because I didn't appreciate it at the time, the role models I had. Since then I've left that organization and gone on to another one and found that other people haven't had the same role models, so they don't think the same as I do. That "can-do" attitude. That acceptance of people where they are in their home. That expectation of being nonjudgmental.
>
> Researcher: So do you think that in the situation you're in now, your creativity is squelched?
>
> Anne: No. I think now that, amazingly enough, I have become the mentor and the role model to some others.

## Discussion

The notion of creativity as a potential that lies within all human beings was well supported in the literature (Amabile, 1989; Cournoyer, 1990; Feldhusen, 1995; Manion, 1990; Pointer & Pointer, 1985; Slabbert, 1994). Such potential is seen to be born and developed as a result of interacting individual and environmental forces. The knowledge, skills, and personality traits of an individual are shaped by contextual circumstances. In turn, the individual, through creative endeavors, may shape the environment. This relationship transforms the individual as well as the individual's environment over time. A vast number and variety of conditions associated with creativity can be found in the literature, based on studies from a wide range of groups. Below, the intrinsic and extrinsic factors most relevant to the findings of this study are discussed.

## Intrinsic Factors

Most theorists held views not unlike those of the participants of this study that, although some individuals may be more predisposed to creativity than others, both creative abilities and traits are influenced by the experiences of the individual and, as such, can be fostered and developed. In examining the literature related to the intrinsic factors that influence creativity, Feldhusen (1995) outlined three aspects of creative thinking and production: (a) metacognitive processing, (b) knowledge, and (c) personality variables. These three elements are interdependent and result from individual mixes of innate and learned qualities. Discussion of metacognitive processing is more relevant to the findings in this study related to the thoughts involved in the creative process (see Chapter 3), and will not be discussed in this paper.

### Knowledge Acquired Through Experience

Although creative individuals tend to be highly intelligent, the kind of intelligence they possess is not strongly correlated to conventional intelligence measures such as IQ. (Feldhusen, 1995; Sternberg, 1988; Sternberg & Lubart, 1995). The intelligence associated with creativity tends to revolve around the ability to apply the knowledge gained through experience in new ways. Sternberg and Lubart described knowledge as human capital for creativity, asserting that the knowledgeable individual is able to focus energy and mental resources on novel ideas, rather than grappling with the basics. As well, knowledge provides a foundation of information from which new ideas can be built, recognized, developed, and refined. Most novices require a period of time to gain a fundamental knowledge of their domain before they can be creative in a way that is significant to the domain. Hayes (cited in Sternberg & Lubart, p. 151)

concluded from his study of a diverse range of artists who lived between the 17th and 20th centuries that most individuals require approximately 10 years of experience in their field before they are able to produce creative masterworks. However, Sternberg and Lubart cautioned that a high level of knowledge may also result in habitual reliance upon approaches that have proven to work in the past rather than searching for new ways. They suggested that individuals with a moderate amount of knowledge in a domain tend to generate the most creative ideas and recommended that conscious efforts to vary routines, to continue learning in a variety of fields, to consult with others, and to be open to new ideas can allay the human tendency to become entrenched in old ways.

There is no evidence in the data of this study to indicate complacency as a result of expertise. This may be partly explained in that none of the nurses had more than 14 years of home care experience. Also, it is likely that the nature of home care work, where client situations are infinitely unique, may not allow nurses, regardless of their level of experience, the convenience of being able to rely continually on old methods and approaches.

Sternberg and Lubart (1995) also stated that creativity depends on two distinct types of knowledge: formal knowledge, that which is acquired through "books, lectures, and other means of direct instruction" (p. 150); and informal knowledge, which is learned through experience. Recognition of both forms of knowledge is evident in this study. That the nurses valued most highly the knowledge and skills gained from their clinical experiences was also reflected in the nursing literature. There is increasing awareness of the value of clinical experience as a source of practical knowledge for nurses in the clinical setting and as a basis for the development of

theoretical nursing knowledge (Benner & Wrubel, 1982; Morse, 1994; Titchen & Binnie, 1995).

Although the nurses felt that their hospital-based educational experiences had not contributed to the development of creative thinking skills, most felt that they had learned basic nursing fundamentals in such programs. It was in their later nursing experiences that they were comfortable in adapting or reforming the fundamentals to deal creatively with new situations. The research has been inconclusive regarding the effects of various nursing programs on creativity (Sullivan, 1987). Sullivan found increased flexibility but decreased originality in a group of registered nurses after completion of a baccalaureate nursing degree program. Sullivan noted that further research is needed to explore the effect of other nursing degree programs on creativity, taking into account other personal, professional, and contextual variables.

**Personality Traits**

Although the personality traits attributed to creative individuals in the literature (e.g., Amabile, 1990; Gardner, 1994; Manion, 1990; Slabbert, 1994; Sternberg, 1988; Torrance, 1963; Woodman & Schoenfeldt, 1990) are as multitudinous and diverse as personalities themselves, the most commonly cited characteristics can be generalized into six categories, many of which were reflected in the nurses' stories:

1. Inclination to diversity: The creative person is inclined toward complexity, having varied interests and backgrounds, as well as being flexible and tolerant of differences.

2. Inquiring mind: Curiosity, penetrating investigativeness, and tolerance of ambiguity are among the qualities associated with an inquiring mind.

3. Sensitivity: Sensitivity is demonstrated in a creative individual's unusual perceptiveness of relationships and high valuation of aesthetic qualities.

4. High-energy constructiveness: This quality encompasses attributes such as positiveness, high energy, self-discipline, and persistence.

5. Courage: Courage is demonstrated in the creative personality through risk orientation, reliance on inner resources, autonomy, self-confidence, egotism, independence of judgement, nonconformity, and honesty.

6. Intrinsic motivation, or the sheer enjoyment and personal interest in the task, was viewed by many theorists as a critical attribute for creativity (Amabile, 1989, 1990; Csikszentmihalyi, 1990;).

The relevance of two of the above qualities, sensitivity and intrinsic motivation, to the findings in this study pertain more closely to aspects of creativity discussed elsewhere in this thesis. In exploring the creative process (see Chapter 3), sensitivity was demonstrated through the creative nurse's acute perceptiveness to details and personal relationships. In regard to intrinsic motivation, it was clear in looking at the outcomes of creativity that the nurses derived personal joy, satisfaction, and a sense of achievement and growth from their creative experiences that would provide motivation for future creativity (see Chapter 2).

Although it has been found that creative individuals, regardless of their discipline or field, generally profile higher than average populations in some, if not all, of the core traits (Guastello & Shissler, 1994), differences related to degree to which the traits are present have been found between creative individuals in different fields. This variation has been attributed to cultural or societal norms and influences (Guastello & Shissler; Magyari-

Beck, 1990). Magyari-Beck asserted that society deems individuals as creative if they identify with and apply the paradigms or values and beliefs of that society. It is interesting, then, that the nurses most frequently mentioned the qualities associated with inclination toward diversity and courage in their stories. Perhaps the emphasis given to these characteristics corresponded to the nature of their work culture. For the nurses to function creatively in situations colored by diversity and ambiguity, and in order for them to be regarded as creative within the home care culture, where client individuality and autonomy are valued, an inclination toward diversity and courage were of utmost importance. That characteristics related to higher energy constructiveness figured relatively prominently in the data may also be connected to the home care culture. Because the nurses were constantly presented with unique situations and problems with each client-home situation, they had to be creative on an ongoing basis. This required a positive attitude, energy, and persistence.

The nurses mentioned an inquiring mind or curiosity much less than other traits in their profile of the creative nurse. This may be because of the nature of the creative tasks that the nurses encountered. As the nurses' creative experiences arose primarily from problems presented to them in client situations, there was much less need to be curious than if they were scientists searching for a discovery. However, although this particular trait was not highly evident in the data, it should not be assumed that it is not present or important to creativity in nursing. Questioning and inquiry have been seen to be essential tools for information management and the development of knowledge (DeGroot, 1988; Millar, 1991; Murphy, 1985). It was implied in the study data that investigativeness and questioning are necessary qualities in order for the nurses to understand complex, obscure, and ambiguous client

situations and to question the status quo in generating creative ideas (see Chapter 3). This is an area worthy of further consideration and research.

Another feature noticeably absent from the picture of the creative nurse drawn by the study participants was that there was no mention of more extremely antisocial characteristics often associated with creativity, such as eccentricity, narcissism, stubbornness, and nonconformity. This may reflect the cultural influences of a discipline devoted to human helping relationships.

## Extrinsic Factors

"To study creativity by focusing on the individual alone is like trying to understand how an apple tree produces fruit by looking only at the tree and ignoring the sun and the soil that support its life" (Csikszentmihalyi, 1990, pp. 202-203). The literature was replete with discussion of the contextual variables found within families, cultures, disciplines, and work environments that positively and negatively affect creativity (e.g., Albert, 1990; Amabile, 1983, 1989, 1990; Brenneis, 1990; Csikszentmihalyi, 1990; Gedo, 1990; Gigerenzer, 1994; Guastello & Shissler, 1994; Harrington, 1990; Helson, 1990; Magyari-Beck, 1990; Manion, 1990; Schaffer, 1994; Schoenfeldt & Jansen, 1997; Simonton, 1990). In a study of scientists, Amabile (1988) found that the following organizational conditions promoted creativity: (a) freedom and control over work; (b) management that sets goals, prevents distractions, and is not overly strict; (c) encouragement of new ideas; (d) challenging problems; (e) a sense of urgency to get work done; (f) sufficient resources; (g) sufficient time to think; (h) collaboration across divisions; and (i) recognition of creative work. Factors seen to inhibit creativity were (a) lack of freedom; (b) red tape; (c) critical, unrealistic, or inappropriate evaluation; (d) defensiveness within

the organization; (e) unwillingness to risk change; (f) organizational apathy; (g) competitiveness; (h) poor communication; (i) insufficient resources; (j) time pressure; and (k) poor rewards. Sternberg and Lubart (1995) concluded that there is no clear-cut formula for creating an environment auspicious to creativity and that research findings regarding nearly every environmental variable are controversial. Rather, the recipe for a favorable environment depends upon moderation in most variables, appropriately suited to the characteristics of the individuals and the type of work involved. Discussion of variables pertinent to the experiences of the home care nurses in this study follows.

**Balance of Challenge and Stress**

As was the nurses' experience, some degree of stress or difficulty arouses creative activity, but too many constraints or too great a challenge is inhibiting (Sternberg & Lubart, 1995). Research has found that competition, as a form of stress, is valuable to the creativity of some, but not all, individuals and is more instrumental in enhancing creativity when the work is routine or familiar. That the nurses in the study were more cooperative than competitive in their creative experiences may reflect the inherent novelty of the daily challenges they faced.

Sternberg and Lubart (1995) also described work situations that include playfulness and humor as facilitative of creative production. Although humor and playfulness did not have a high profile in the findings of this study, two nurses mentioned the use of humor in relation to experiences of collaborating with colleagues. Anne likened her experiences of questioning of conventions and brainstorming to a game and noted that she felt a sense of competition in trying to generate the most outlandish idea in brainstorming sessions. As well, social events such as the banana

party and Christmas luncheon described by Carol reflected a sense of humor and playfulness in the work environment. This is an area that may benefit from further exploration.

**Freedom Versus Boundaries**

Much of the literature described the organization that promotes creativity as one that encourages in its members autonomy, experimentation, and risk taking (e.g., Cournoyer, 1990; Cunningham, 1989; Huckabay, 1982; Sternberg & Lubart, 1995; Wesenberg, 1994). In such an organization an openness to questioning old ways and looking at new ideas and approaches exists. However, loosely defined policies and procedures bounded by clear organizational visions and philosophies provide the creative individual with a sense of direction, yet freedom to function and operate creatively (Sternberg & Lubart). Whereas constant supervision and stringent evaluation appear to decrease creativity, creativity increases when workers are allowed to work autonomously and are evaluated less frequently (Amabile, 1990; Sternberg & Lubart). It would seem by the reports of the participants in this study that they felt they could work autonomously and break convention and rules in order to meet client-care goals. Existing policies and procedures were loosely delineated. However, their actions were guided by certain philosophical and moral tenets such as client-directed care, beneficence, and client safety.

**Recognition and Rewards**

Withholding punishments but giving abundant praise is another extrinsic condition that has been found to promote creativity. Many methods of rewarding creativity were suggested in the literature, including monetary incentives, promotions, sharing the profits from creative ventures, access to professional development and educational opportunities, sharing successes

in meetings or newsletters, holding celebrative ceremonies, and support in publishing creative successes (Huckabay, 1982; Kanter, 1985; LeBreton, 1982; Manion, 1993; Pointer & Pointer, 1985). Again, however, in order for rewards to promote creativity, the type of reward needs to be appropriate to the individuals and context. LeBreton recommended that benefits be tied directly to the creative behavior. It would also seem that in working groups, external rewards that are given only to a few individuals potentially result in an adversely competitive atmosphere and resentment. Therefore, it is important that team efforts be duly recognized (Manion). Amabile (1990) found that regularly awarded and expected extrinsic motivation inhibited creativity, whereas unexpected bonuses were facilitative. Although Amabile stressed that intrinsic motivation, rather than extrinsic motivation, is critical for creativity to occur, societal acceptance and recognition of creative endeavors foster in the creator a sense of success and competence and a self-concept of being creative, which in turn intensify intrinsic motivation (Amabile; Feldhusen, 1995; Petkus, 1996). In the study, the nurses appreciated verbal accolades from colleagues and superiors, but it was evident that the inner satisfaction from the creative act was sufficient reward. Although the special occasions mentioned by Carol were not directly intended to celebrate the creativity of staff, they were successful in relating appreciation of the work accomplished, work that necessarily involved creativity.

**Resources: Time and People**

Although the resources found to be necessary for creativity varied in the literature according to the specific type of creative task involved, time and human resources were consistently mentioned. Time is necessary to reflect and think about the problem; to generate and test new ideas; and to

refine, develop, and communicate creative works (Cournoyer, 1990; Cunningham, 1989; LeBreton, 1982; Manion, 1990, 1993; Murphy, 1985; Pointer & Pointer, 1985). Manion also talked of time involvement in terms of providing individuals with professional development opportunities to learn creativity skills and update domain knowledge. She also noted that time is needed for self-care and supportive activities to maintain the personal balance necessary for creative activity. It would seem that the nurses in the study were able to accommodate some time within their full schedules to reflect upon problems, to talk to others, and to maintain personal balance. However, for most, there did not appear to be active support and provision of structured time for creative reflection and problem solving. Although some mentioned workshops they had attended that were important for the development of domain knowledge, there was no evidence of sessions for learning creativity skills nor time and support for the research, development, and communication of creative ideas through presentation or publication.

Many authors asserted that access to people from different backgrounds and areas of expertise provides a wealth of viewpoints, skills, and knowledge that can enhance every step in the creative problem-solving process (Jaffe & Walsh, 1993; Manion, 1990; Siau, 1995; Sternberg & Lubart, 1995). Reviews of some research findings, however, suggested that collaborative activities, particularly during the process of idea generation, may be counterproductive (Rowatt, Nesselroade, Beggan, & Allison, 1997; Siau; Sternberg & Lubart), as a result of several factors. First, although the evaluation of ideas is meant to be suspended during such activities as brainstorming, implicit social pressure may continue to discourage group members from communicating very unusual ideas. Also, within a group, some individuals may tend to ride with the ideas generated by others, rather

than exercising their individual creative powers. Finally, taking turns in the verbal communication of ideas results in waiting time in which group members may forget or privately judge and suppress their ideas. Lack of evidence in the study findings of these difficulties with collaborative creativity may be because of the nurses' interpersonal skills. Group dynamics for creativity depend greatly on the individual abilities and characteristics of its members (Guastello & Shissler, 1994). The skills that the nurses have learned and honed in order to work with clients, colleagues, and members of other disciplines may have served them well in group creative activities. It would be worthwhile to explore further the experiences of home care nurses to verify the value of collaboration and to explore the conditions that facilitate the success of such activities.

A review of Gardner's analysis of the lives of seven eminent creative individuals revealed that mentors played a significant role in the development of all but one individual (Gruber, 1996). Sternberg and Lubart (1995) asserted that "the best way to develop creativity is to watch and emulate creative role models" (p. 266). Through sharing their experiences and demonstrating their creative practices, others learn domain knowledge as well as creativity skills from role models or mentors (Davies, 1993; Titchen & Binnie, 1995). Consistent with the findings in this study, however, the authors stressed that effective role models encourage independence and support the individuality of their followers.

### Interaction of Individual and Environment

How the individual interprets and deals with environmental conditions is key to creative activity. Certain personal characteristics, such as strong intrinsic motivation and perseverance, enable the creative individual to surmount adverse external factors (Amabile, 1990; Sternberg, 1988). For

some individuals, negative external situations are the fodder that feeds their intrinsic motivation and creativity. An ecological systems approach, grounded in principles from ecological biology, presents one view of the dynamic and interdependent relationship between the individual and the environment (Csikszentmihalyi, 1990; Demetrulias & Shaw, 1985; Harrington, 1990; Martindale, 1994; Perkins, 1994). In order to function creatively, the individual places demands such as knowledge acquisition, physical resources, time, work space, communication, and access to appropriate audiences on the environment. Similarly, the environment or ecosystem relies on the psychosocial contributions of the creative individual for its preservation and growth. One aspect of this environment is that the society or culture defines, recognizes, and rewards creative behavior, which, in turn, may motivate the individual to perform further creative acts. That creativity may have different meanings for different cultures or groups, and that these meanings change over time adds further complexity and dynamism to the concept of creativity. Some evidence in the literature indicated that creativity is culturally sanctioned as valuable within the area of home care nursing (Boyle & Letourneau, 1995; Demetrulias & Shaw, 1985; Jakobsen, 1994). This was also demonstrated in the region in which the study was conducted, in that no difficulty was encountered in receiving support for this research project at either management or grass roots levels (see Appendix A). This larger cultural climate may have positively influenced individual worksites where the nurses found the climate to be generally conducive to creativity.

Sternberg (1988) proposed that the individual is likely to cope within a certain context by either selecting, shaping, or adapting to the environment. The highest level of creativity is possible when the individual

shapes the environment into a new form with new creative possibilities. In selection, an individual increases creative options by moving to an environment that is more suitable to the individual's creative needs. One might surmise from the nurses' narratives that they were attracted to or selected an occupation in home care nursing because of the challenges, novelty, and creative opportunities it offered. Most of the nurses cited individuals who did not possess the personal qualities to enjoy and survive in such a line of work where diversity and ambiguity reigned. Although Sternberg saw adaptation to one's environment to hold the fewest creative opportunities usually, the nurses in this study saw many creative opportunities in situations where they were required to adapt to diverse client home situations as well as to organizational changes.

## Implications

Amabile (1990) stated that

> social factors may be responsible for only a small part of the total variance in creative behavior, but they may account for the lion's share of the variance that anyone can do anything about! It is almost always easier to change the social environment (or one's perception of it) than to change traits and abilities. (p.76).

In nursing education, practice, and research, it is possible to render changes that will result in a climate that is more conducive to creativity.

Traditional education at all levels has been the target of much of the criticism regarding its potential to socialize creativity out of students (Sternberg & Lubart, 1995; Torrance, 1994). As mentioned at the beginning of this paper, nursing education has not escaped this fate. The nurses' stories in this study reflect the failings of past educational institutions to nurture creativity. Another regrettable finding in the study is that none of the participants mentioned teachers as creative mentors. However, perhaps it is encouraging that the youngest nurse did not speak negatively about her educational experience in

relation to creativity. Recent awareness of the need for creativity and critical thinking skills in the preparation of future nurses has led to many curricular initiatives devoted to fostering and developing these abilities (Demetrulias & Shaw, 1985; Ferguson, 1992).

Once the fledgling nurse leaves the educational nest, however, creativity will not fly forever without favorable winds. How can individuals at all levels of health care agencies foster creativity within themselves and others? As in nursing education, authors such as Manion (1990, 1993), fueled by such changes as economic restraint and the rapid information boom in the past decade, have focused their attention on ways in which creativity can be promoted in nursing departments. Based on the congruity of this study's findings with those of the nursing management literature on creativity, suggestions regarding organizational structures, management styles, and the provision of rewards and resources found in such literature as discussed previously might find beneficial application in nursing practice settings. One must not forget the significant role that individual nurses play in supporting and recognizing creativity in their colleagues and in being creative role models.

Nursing research also depends upon nurturing inquisitiveness, perseverance, and imagination in front-line nurses, as well as in researchers. Murphy (1985) urged educational and research communities to incorporate many of the conditions discussed in this paper in order to promote creative science and scholarship in the discipline of nursing.

It must be kept in mind that the findings of this study are relevant to the experiences of a group of six home care nurses and are not generalizable to other nursing populations. In that the nature of creativity is complex and context specific, it is important for each situation to be considered individually. Further research in home care nursing as well as in other areas within the

discipline will serve to validate and expand on the findings from this study. Equally important to learning about the conditions that are conducive to creativity is evaluative research of the application of these conditions in nursing practice situations. In order to gain a comprehensive perspective, it would also be valuable to explore the experiences and perspectives of nurses in management positions regarding the facilitation of creativity in their organizations.

## Conclusion

It is questionable that my son's backwards dressing style is creative, and certainly what a four-year-old needs to develop creatively will differ from the needs of creative nurses in practice. However, the facilitation of creativity in either case involves a delicate juggling of personal and environmental factors. Some of these factors are less controllable than others, and there is no guaranteed approach that will work in every situation. Creating an environment that is conducive to creativity is itself an exercise in creativity. However, awareness of and sensitivity to potential variables may provide the impetus and direction for initiatives that foster creativity in nursing practice.

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# CHAPTER 5

## CONCLUSION: PUTTING THE PUZZLE TOGETHER

Creativity is like a difficult picture puzzle, complex and multifaceted. Its elements fit together and interrelate like jigsaw puzzle pieces. Its picture transforms as one changes cultural vantage points. The task of understanding creativity becomes yet more challenging as, over time, the puzzle shifts with changing cultural perceptions and values. In the preceding chapters the puzzle is viewed from one clinical nursing perspective. The experiences of six home care nurses are explored in relation to the four components of a framework traditionally used in the study of creativity, the four Ps of product, process, person, and press. However, without fitting the four corners of the puzzle together, the total picture remains undeciphered. For example, one must have an idea about what creativity is and where to find it before the processes and conditions can be examined. Knowing how the nurses defined creativity in terms of products and outcomes provides insight into this part of the puzzle. Understanding the processes that occurred during the creative experience provides links to the factors within the person and environment, or press, that are necessary for the processes to occur. Because of their interactive, interdependent nature, sections of the puzzle depicting personal and environmental influences snugly unite as one. In turn, an aspect of the environment, the social context, plays a significant role in defining, recognizing, and judging particular works as creative. Therefore, the part of the puzzle known as press also supplies inlets into which fits the section of the puzzle that relates to the creative product.

Creativity, therefore, needs to be examined using an approach that integrates at least these four components in a dynamic, nonlinear way. The interactionist model (Schoenfeldt & Jansen, 1997; Woodman & Schoenfeldt,

1990), represents one such approach. The model is built on the premise that "creativity is a complex person-situation interaction" (p. 15) and that full comprehension of the concept of creativity requires consideration of five interacting components: (a) antecedent conditions to the current situation, (b) creative behavior (process), (c) consequences (product), (d) the person, and (e) the situation (press). Within the component of the person, three distinct aspects are outlined: (a) the organism as a gestalt of attitudes, values, intentions, and motivations; (b) cognitive style and abilities or skills; and (c) personality traits and dimensions. As well, the environment is divided into two particular categories: (a) contextual influences, which are variables found in the physical environment, culture, organizational climate, and task and time constraints; and (b) social influences, such as social facilitation, evaluation, expectation, rewards/punishments, and role modelling.

**Summary of the Findings**

The findings of this study as they are outlined and organized by the grounded theory paradigm model (Strauss & Corbin, 1990) fit relatively well into the interactionist model. Figure 5-1 represents the findings of this study from an interactionist perspective. It is constructed in a way that conveys the interaction of person and situation throughout the creative experience. It was difficult and beyond the intent of this study to make the fine distinctions between personality traits and gestalt, as well as between the contextual and social influences of the situation as they are set out in the model. Therefore, for the purpose of summarizing the study findings, the categories of personality traits and gestalt will be combined under one term, *personality dimensions,* and all of the extrinsic conditions will be subsumed under the category *situation*.

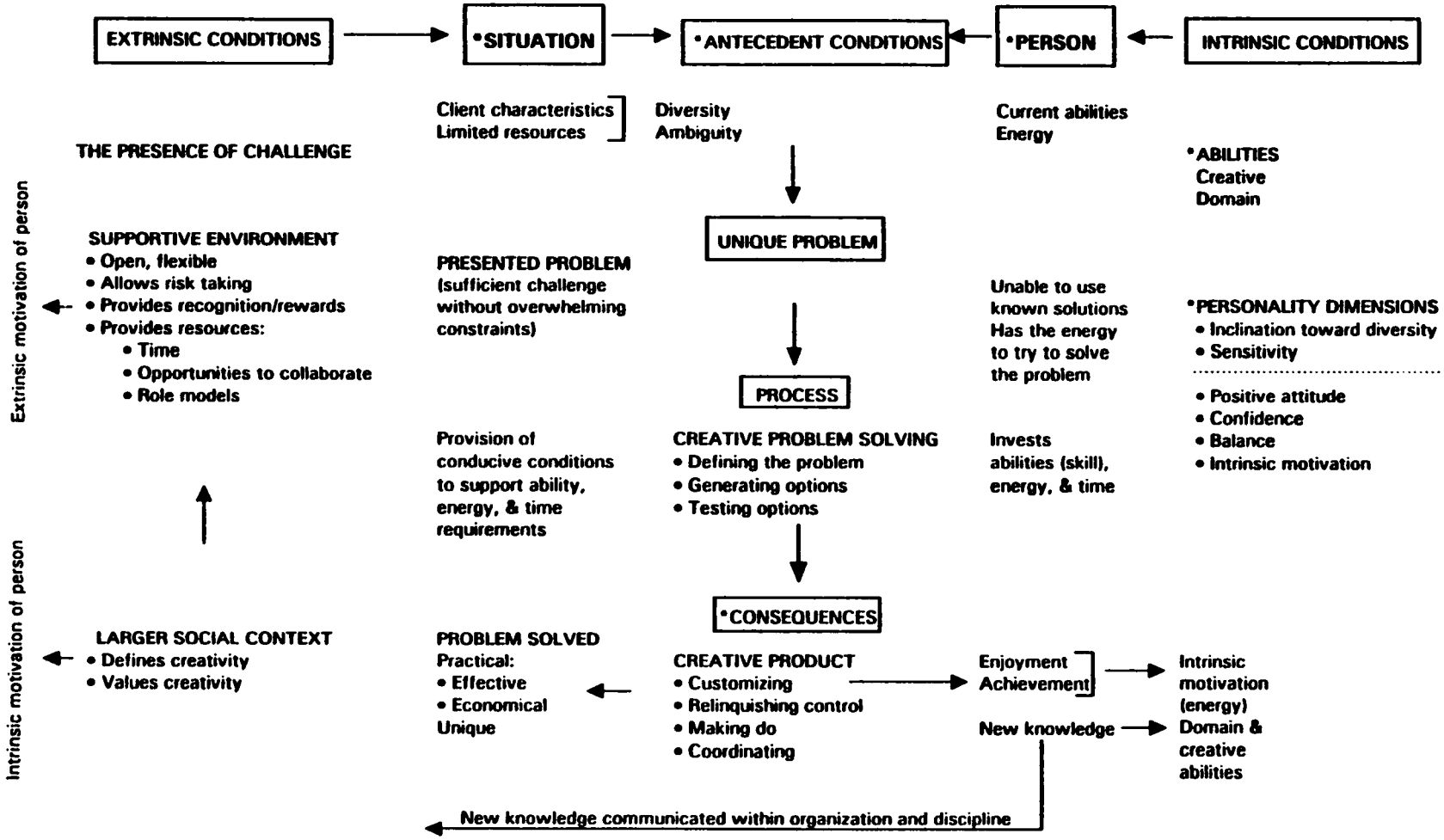


*Figure 5-1.* The creative experience of the home care nurses from an interactionist model perspective. Asterisks indicate components adopted from the interactionist model (Woodman & Schoenfeldt, 1990).

In order for the figure to convey more accurately the interaction that occurs between intrinsic and extrinsic conditions, the lateral edges of Figure 5-1 should ideally join together in a tube shape. Because the person-situation interaction is constantly changing and evolving as a result of each creative situation, the tube should consist of adjoining creative experiences in a spiral (Ebert, 1994). In talking about the figure, a fellow student thought that if the tube were made of rubber, the spiral would twist and stretch as the person and environment change and grow with each new creative experience. If the twists and stretches were frequent or intense enough, the tube would permanently change as society's ideas and values about creativity change as the result of the impact of grand or popular creative innovations (Gloria Leraand, personal communication, November 10, 1995). In the figure the phases of the creative experience, the antecedent conditions, process, and consequences, are surrounded by the intrinsic and extrinsic conditions, which have constant influence on the experience. Below, the findings of the study are summarized in relation to antecedent conditions, processes, and consequences. For clarity, the intrinsic and extrinsic conditions will follow as a separate section.

**Antecedent Conditions**

Indeed, creativity was seen to be an essential aspect of home care nursing, where home care nurses found themselves working relatively autonomously as guests in diverse client-home situations. The experiences that the nurses in the study described as being creative clearly centered around problems. These problems largely arose from situations where client characteristics and actual or potential limitations in resources prevented the effective implementation of approaches previously known to the nurse. However, it was possible for a problem or situational constraint to be so

great that the capabilities of the nurse to be creative were frustrated. Two dimensions that increased the creative challenges in the nurses' stories were diversity in the problems faced and ambiguity in that the nurses worked with few directives in home situations where clients ultimately had control.

**The Process**

The nurses' accounts of how they responded to the challenges in their creative experiences reflected a problem-solving process. The distinguishing characteristic between problem-solving experiences that the nurses perceived to be creative and those that they deemed as not creative was the intensive involvement of skill, energy, and time in the search for the best solution to an unusual problem. Although the nurses found it difficult to articulate their actions in terms of a chronological flow of specific events, the behaviors that were apparent in their stories could be grouped into three themes: (a) defining the problem, (b) generating options to solve the problem, and (c) testing the most feasible options.

Defining the problem or discovering the essential nature of the client problem was seen as essential to the nurses in their creative endeavors. This was accomplished using a variety of assessment and analysis methods. Although the nurses valued a structured assessment tool to guide their assessments, other approaches, including having tea and informal conversation with the client, looking around, getting a feel for the situation, and seeking outside resources, were employed to gain additional, sometimes obscure and personal information that contributed to the development of a deep and comprehensive understanding of the client situation.

In defining the problem, many nurses talked about getting to the essence or core of the problem. This involved clarifying, processing, and organizing the assessment information in a way that would point to a

solution. To clarify their perceptions about the situation or to redefine the problem in a way that might yield a solution, the nurses considered the situation from a variety of perspectives. Different viewpoints were gained by focusing on, then distancing themselves from the problem; consulting the points of view of others; and reframing existing attitudes and values. Although the nurses talked of needing to gain a holistic understanding of the situation, many also described breaking down the "big picture" into smaller, more manageable obstacles, which were sorted and prioritized.

To the nurses in the study, creativity involved an intensive search for many options from which to choose the best solution to the problem. In generating options, the nurses utilized a variety of approaches, including reflection upon the problem, letting the problem subconsciously percolate or incubate, brainstorming, questioning conventional approaches, exploiting serendipitous events, and adapting and synthesizing elements drawn from past experiences. Generated options were reviewed for feasibility by considering the possible consequences that might result from their implementation in the particular situation. The ideas judged to be the most feasible were then tested. Testing of the ideas was largely a process of trial and error, where the results of a chosen option were not predictable and may have required revision.

Consequences: The Creative Product and Other Outcomes

The nurses' creative experiences resulted in both direct and indirect consequences. The direct consequences resulting from creative problem solving and the decisions and strategies that the nurses devised to deal with the problem can be regarded as the creative product. Indirect outcomes of the creative experiences pertained to personal and professional satisfaction and growth.

The creative product. The creative strategies or products that resulted from the nurses' creative problem-solving activities fit into four major groups: (a) customizing or adapting to individual client characteristics, (b) relinquishing control, (c) making do with available resources, and (d) coordinating time and personnel. Challenges related to diverse client characteristics were managed through customizing strategies, whereas relinquishing control dealt with ambiguity in the situation. Approaches involving making do and coordinating were adopted to accomplish client care goals within actual or potential resource constrictions.

Practicality and uniqueness were the two qualities that almost always were included in the nurses' descriptions of those nursing care outcomes they considered to be creative. Practical solutions were, to the nurses, effective and economical. Ultimately, it was important for creative solutions to meet client care needs effectively; and, more often than not, in order to be effective, the solution had to be economical. Although the nurses did not see their creative strategies as absolutely original, they regarded them as unique in that they arose from individual client-nurse situations and were new combinations or adaptations of elements garnered from past experiences.

Indirect outcomes. As well as producing solutions to the problems faced in providing efficient, effective care to clients, the nurses derived indirect outcomes from their creative experiences. They found creativity to be a source of enjoyment and personal growth. The sense of self-accomplishment and the positive emotions gained from their experiences contributed to their work satisfaction and likely built upon their motivation to be creative in future clinical experiences. Also, the nurses gained new practical knowledge that was shared among colleagues in the office and, at

times, with other nurses in the region. As well, by being engaged in the creative process, they developed creative thinking skills. These thinking skills were passed on to others as well through role modelling and mentorship.

In light of the positive outcomes of their creative experiences, it is unfortunate that the nurses all felt that creativity was ill recognized in their work. Most admitted that they regarded their creative activity as merely a part of their day-to-day functioning and admitted that they were likely to recognize creativity more easily in others than in themselves.

**Influencing Conditions**

The nurses unanimously believed that creativity could be learned. Although they felt that certain talents and personality traits predisposed some individuals more than others to be creative, it was evident that the nurses perceived that factors in the person (intrinsic conditions) and factors in the environment (extrinsic conditions) greatly influence creative ability.

**Intrinsic conditions**. The study data related to intrinsic factors centered around the two major themes of abilities and personality traits. It was evident that high levels of skill and expertise were employed by the nurses during their creative experiences. For example, in assessing the situation, the nurses skillfully and quickly gathered an abundance of information from a variety of sources. Acute perceptual abilities, gained as a result of accumulated clinical experience, enabled the nurses to notice subtleties and patterns in the client situation. Throughout the creative experience, it was apparent that the nurses also applied a variety of thinking skills, utilizing unconscious or nonrational as well as conscious, rational mental processes.

Experience acquired from a variety of sources was seen to be key to creative ability. Some of the nurses described personal life experiences such as childhood upbringing, parenting, and recreational artistic outlets as being influential in shaping their creative abilities. Whereas the nurses conveyed that formal nursing education had provided basic knowledge and that undergraduate nursing programs had facilitated the development of creative thinking skills for some, they saw clinical experience as most valuable in providing opportunities to develop creative thinking abilities, acquire a repertoire of practical knowledge, and gain the confidence to take risks and to work autonomously.

Personality dimensions cited by the nurses as necessary for creativity can be grouped into the following categories: inclination toward diversity, balance, motivation, positive attitude, and confidence. The nurses demonstrated inclination toward diversity by the very fact that they were attracted to and enjoyed a line of work characterized by diversity and ambiguity. They also noted that the creative nurse needed to be tolerant, open, and flexible to different approaches and viewpoints in supporting clients and in generating creative solutions to problems. The nurses' stories were charged with high levels of personal investment and risk taking in such activities as building trusting, mutual relationships with clients; mulling over challenging problems; persisting in difficult circumstances; and trying out new ideas. This kind of energy can be afforded only when a person feels motivated and balanced, as well as positive and confident in his or her abilities.

**Extrinsic conditions**. Extrinsic influences found in the study included the existence of challenge and supportive factors within the work environment. As mentioned earlier, the nurses found that, although a need

or challenge had to exist in order for creativity to occur, too great a challenge or too many constraints frustrated creativity. An organizational climate that allowed the nurses freedom within loosely set boundaries and a climate that tolerated risk taking supported the nurses' creative efforts to stretch beyond conventional approaches in meeting the challenges they faced.

Verbal recognition from peers and others throughout the organization further supported and encouraged the nurses to take creative risks and replenished the energy and motivational levels in creative individuals. Although special management-sponsored social functions were not intended to reward creativity specifically, some of the nurses felt that these events conveyed a general appreciation for the work done, which also supported and motivated the nurses' creativity. As well, informal social gatherings provided an opportunity for recreation that contributed to restoring energy levels and building relationships among members of the health team, thus strengthening the team's ability to collaborate in creative work.

Collaboration with clients/families, other home care nurses, and multidisciplinary health professionals was seen by the nurses as invaluable in providing them with a rich and diverse bank of perspectives, expertise, and experiences upon which they could draw in analyzing problems, generating ideas, and evaluating creative solutions. The nurses also found that collaboration with colleagues was a significant source of support in providing validation and encouragement for their creative ideas. Although all of the nurses found time to collaborate informally with work colleagues, regularly scheduled meeting times were seen as a valuable avenue to provide opportunities to collaborate. Many of the nurses also noted that office space together and open-door policies facilitated collaboration. The

nurses also valued other creative people in their work and personal lives as sources of inspiration and role modelling.

Time was considered essential to the nurses' creativity. In their experiences, the nurses needed time to get to know and understand the clients and their situations. Time was also required to think and reflect on the problem and to generate, review, and experiment with possible solutions. It also took time for the nurses to consult and collaborate with others in the search for additional information, different perspectives, and a variety of ideas and solutions. However, because little time was allotted for such activities in their work schedules, the nurses took advantage of unstructured time during the drives between visits, while starting cars, and during coffee breaks. It was also not unusual for the nurses to spend time thinking about the problem when off duty.

## Discussion and Implications

When one views the above findings in relation to the literature, they are not startling or revolutionary. It is possible to find literature, albeit mostly derived from other disciplines such as education, psychology, and sociology, that reflects or supports the nurses' experiences and viewpoints. However, that the findings relate to current theories about creativity indicates that the findings at least fit within the realm of creativity as it is currently understood. What is most significant is that the findings define the boundaries in which nursing creativity lies amidst the vast sea of theoretical approaches and notions about creativity. This provides a beginning point and directions for further exploration and the development of initiatives to promote creativity in the discipline of nursing. Our visions, however, would be short-sighted if we did not look beyond the boundaries to other potential areas suggested in the literature. The following discussion will briefly review

how the literature relates to and finds application to the discipline of nursing in terms of the study findings regarding process, consequences, and conditions.

**Process**

It is logical that if, in the experiences of the nurses, creativity arose from presented problems, they would respond by employing creative problem-solving techniques. As described in the second and third chapters, many theorists employ a problem-oriented perspective like that of the nurses in the study to define creativity and describe the creative process (Taylor, 1988). Many models depicting the creative process essentially reflect the stages of the problem-solving process (Ebert, 1994; Feldhusen, 1995; Ferguson, 1992; Grossman & Wiseman, 1993; Isaksen, Dorval, & Treffinger; Manfredi & DeResti, 1981; Osborne, 1963; Torrance, 1994). Although the nurses' experiences did not appear to be a linear, step-by-step progression of stages, awareness of the behaviors that occur during the creative experience provide guidelines for nurses when they need to respond to problems in practice that require creativity. Because the nursing process is also a type of problem-solving process, the particular approaches and skills that characterize creative problem solving can be assimilated into an approach that is already familiar to nurses.

The notion that creativity, rather than being a separate process, may be a quality within other processes has been expressed in the literature (Slabbert, 1994). As well, in most of the literature creativity was viewed as an active process that, even in situations where chance events and nonrational thought processes are involved, requires intent, skill, and effort. Recently, academics and researchers have recognized that creativity involves a variety of mental processes. The behaviors engaged by the

nurses in the study during the creative problem-solving process reflect the use of a wide range of cognitive processes, employing both rational and nonrational modes of thought. In light of these findings, research and literature related to "whole-brain thinking" (Demetrulias & Shaw, 1985; Epstein, 1996; Ferguson, 1992; Holbert & Thomas, 1988; Torrance, 1994) may have application in the development of approaches and techniques in nursing education and professional development programs that encourage and strengthen creative thinking skills in nurses.

Although the findings in this study focused on a problem-solving kind of creativity, as was reflected by the participants' experiences, other types of creativity such as artistic self-expression need not be dismissed entirely from the realm of nursing work. Evidence from my personal experience and the literature (Chinn & Watson, 1994) suggests that artistic interpretation and expression through literary, musical, or visual avenues may potentially add meaning, knowledge, and enrichment to many aspects of nursing. This is an area worthy of further exploration.

**Consequences**

Novelty and usefulness are consistently cited in the literature as the primary attributes associated with the creative product (e.g., DeGroot, 1988; MacKinnon, as cited in Harrington, 1990; Manion, 1990; Siau, 1995). Similarly, most scholars have agreed that creative products are the result of the negation, combination, or adaptation of existing elements drawn from past knowledge or experience (Boden, 1994; Diaz de Chumaceiro & Yaber O, 1994; Gigerenzer, 1994; Grossman & Wiseman, 1993; Loehle, 1994; Magyari-Beck, 1990; Manion; Perkins, 1994; Schaffer, 1994; Schoenfeldt & Lubart, 1995). The qualities of aesthetic appeal and simplicity that are found in the literature as defining attributes of creativity

were not articulated but were implied in some of the study data (DeGroot; Feldhusen, 1995; Ferguson, 1992; Murphy, 1985; Siau, 1995). Further exploration of these attributes may enrich our understanding of creativity in nursing practice.

It is generally accepted that creativity benefits the individual by promoting well-being, self-actualization, and emotional gratification (Csikszentmihalyi, 1996; Duncan, 1987; Grossman, 1994; Rowland, 1994; Udall, 1996). Emotions of excitement at the prospect of a challenge, joy and amusement during the process, love of one's work, and a sense of self-achievement, as were expressed by the nurses in the study, not only contribute to satisfaction, but also bolster one's internal motivation to be creative again (Amabile, 1983; 1990; Wesenberg, 1994).

The findings of this study also reflect the suppositions of many nursing authors, often not supported by clinical nursing research, that creativity benefits nursing by enhancing the provision of individualized, cost-effective care; the personal and professional satisfaction of nurses; and the development of nursing knowledge (Callahan, 1990; Curran, 1994; Davies, 1993; Demetrulias & Shaw, 1985; Ferguson, 1992; Holbert & Thomas, 1988; Jones, 1983; Klaich, 1990; Klinefelter, 1992; Manfredi & DeResti, 1981; McLees, 1988; Moore Schaefer, 1990; Murphy & De Back, 1991; Pesut, 1985; Sarvimaki, 1988; Shamansky, 1991; Skeet, 1985). It has been found, however, that the knowledge gained from creative experiences, as a form of practical knowledge, is typically taken for granted by nurses and, thus, is not well articulated or communicated to other nurses (Benner & Wrubel, 1982; Titchen & Binnie, 1995). As this knowledge is key to the development of a body of nursing knowledge based on the realities of clinical practice, serious efforts need to be made at clinical-practice and

management levels of nursing to recognize creativity and to encourage and support initiatives such as clinical scholarship (Diers, 1995). An awareness of the value of creativity in nursing practice and knowing what it looks like (for example, the strategies of customizing, relinquishing control, making do, and coordinating in home care nursing) may facilitate the recognition and promotion of this important concept in practice.

**Intrinsic and Extrinsic Conditions**

The notion that creativity is a human potential that can be learned and shaped by the life experiences and social environments of the individual was well accepted in the creativity literature (Amabile, 1989; Cournoyer, 1990; Feldhusen, 1995; Manion, 1990; Pointer & Pointer, 1985; Slabbert, 1994, Sternberg & Lubart, 1995). As discussed in the fourth chapter of this thesis, a massive amount of literature, frequently proposing opposing viewpoints, has been devoted to describing the factors that enable creativity. Much of the divergence found in the literature results from scholars studying aspects of the creative person or the creative environment in isolation or generalizing findings particular to one field or domain. Over the past two decades, however, there has been an increasing awareness that creativity involves the interaction of many conditions within the person and environment.

In conceptualizing creativity as a person-situation interaction, it is important to keep in mind the great influence exerted by the larger social or cultural context. It is the values, beliefs, and norms of the culture, whether that be a society, a discipline, or an organization, that determine the importance of creativity and the qualities that define a creative product or person (Amabile, 1983, 1989,1990; Csikszentmihalyi, 1990; Ferguson, 1992; Harrington, 1990; Magyari-Beck, 1990). The cultural context drives

the specific immediate extrinsic conditions encountered by the individual and has an impact on the individual's creative self-identity and motivation.

Intrinsic conditions. Although the intrinsic influences have been grouped in a number of ways in the literature, they generally fall into the two major categories of creative abilities or skills and personality dimensions (i.e., Feldhusen, 1995; Sternberg & Lubart, 1995; Woodman & Schoenfeldt, 1990). In turn, creative abilities have been studied in terms of creative thinking skills and the skills or knowledge related to the specific culture, discipline, or domain (Amabile, 1983; 1990; Sternberg & Lubart).

Domain and creativity skills/knowledge are acquired largely through a variety of experiences, as was reflected in the study findings. Sternberg and Lubart (1995) differentiated between formal knowledge, attained through traditional educational programs, and informal knowledge, acquired from life and work experiences. That the nurses valued clinical experience above all other experiences in the attainment of the skills, knowledge, and confidence needed to be creative is not surprising. Sternberg and Lubart asserted that one must have extensive experience in a field to attain a basic level of knowledge before one can become creative. As well, nursing scholars are increasingly recognizing and valuing the practical knowledge gained through clinical experience (Benner & Wrubel, 1982; Titchen & Binnie, 1995). However, Sternberg and Lubart cautioned that it is possible for extensive knowledge also to inhibit creativity in that the individual becomes complacent in using approaches that have worked in the past. That the nurses in this study did not perceive such a problem may be explained in that none of the nurses had been working in the area of home care for an extensive length of time, the longest being 14 years. It may also be that the diversity of client-home situations is so infinite that the nurses are

continually challenged to find new approaches to unusual problems. Research regarding the effects of different nursing education programs on creativity has been inconclusive (Sullivan, 1987). Further research that takes into account the many contextual variables found in different educational programs is required to guide nursing education in developing programs that foster and develop creativity.

Given the vast array of personality traits ascribed to creative individuals in the literature, it is not surprising that the traits described in the study would find support. That the major categories in the study findings correspond with the core traits associated with creativity found in the literature validates the nurses' profile of the creative personality. Although the core or general traits appear to be commonly higher among creative people, differences have been found in the degree and exact nature of specific traits within different domains (Guastello & Shissler, 1994). This difference was attributed to influences arising from cultural paradigms (Magyari-Beck, 1990). Most people who are seen as successfully creative fit within the norms, values, and beliefs of the culture system in which they live or work. This may explain why certain qualities were emphasized in the study data and why some characteristics found in the literature did not profile in the nurses' constellation of the creative home care nurse. Attributes such as inclination toward diversity and courage were necessary for the nurses to function and to be recognized as creative in a culture devoted to upholding client individualism and autonomy. High-energy constructiveness was important in a line of work where problems, diverse and ambiguous in nature, were the norm rather than the exception. Similarly, in a helping profession based on human relationships and respect for the integrity and autonomy of others, creative home care nurses could ill

afford extreme nonconformity, narcissism, and single-mindedness, traits commonly associated with the creative individual.

**Extrinsic conditions**. It is clear from the literature that there is no one particular formula for creating the ideal environment for creativity. After reviewing the extensive and often controversial literature on the subject, Sternberg and Lubart (1995) concluded that a climate conducive to creativity involves moderation in most variables and the balancing of factors to suit the nature of the tasks and individuals involved. Consistent with the nurses' experiences, such a climate provides challenges that are not overwhelming. As well, it is flexible and tolerates risks and failures, but provides broad vision, direction, and boundaries. Although intrinsic motivation has been found to be key to creativity, unexpected extrinsic rewards, such as the unsolicited recognition of peers that was valued by the nurses in the study, can also be facilitative (Amabile, 1990). Although the nurses in the study seemed to be sufficiently motivated by intrinsic rewards and the appreciative comments of their colleagues, the introduction of other forms of recognition suggested by nursing administration authors (Huckabay, 1982; LeBreton, 1982; Manion, 1990, 1993) such as special mention in newsletters or at meetings, celebratory events, and professional development opportunities may further encourage nurses to be creative. These kinds of rewards have additional benefits in that they appropriately recognize team efforts, build skills and restore creative energy, and strengthen the team bonds necessary for collaboration.

Nursing managers, among others in the creativity literature, stressed that time is essential for creative activity as well as for the building of skills and inner resources, and recommended that it be deliberately allotted into workloads (Cunningham, 1989; LeBreton, 1982; Manion, 1990, 1993;

Murphy, 1985; Pointer & Pointer, 1985). As well, evidence in the literature indicated that exposure to role models or mentors is also an important condition for creativity (Davies, 1993; Gruber, 1996; Sternberg & Lubart, 1995; Titchen & Binnie, 1995). However, there was less consensus about the effects of collaboration (Sternberg & Lubart). Some authors held views similar to those of the nurses in the study that collaboration strengthens creativity through the application of multiple and various talents, areas of expertise, and experiences in problem solving (Jaffe & Walsh, 1993; Manion, 1990). However, others have found group creativity to be inefficient and counterproductive, particularly in the area of idea generation (Rowatt, Nesselroade, Beggan, & Allison, 1997; Siau, 1995). Guastello and Shissler (1994) asserted that understanding group creativity requires understanding the characteristics of the individuals involved in the process. That the nurses, as part of a helping profession, have necessarily developed the skills, attitudes, and traits required to work with others may have a bearing on their positive experiences regarding collaboration. As a need is expressed for more insight into the dynamics of group creativity in other disciplines (Guastello & Shissler), further nursing research in this area could potentially result in contributions that are useful beyond the discipline.

## Limitations of This Study

In that creativity is a broad, domain-relevant concept that virtually has been unexplored in relation to nursing practice, the qualitative research techniques utilized in this study are apt and fitting in discovering central attributes and conditions of the concept and in providing direction for further research (Field & Morse, 1985; Sternberg, 1988). However, limitations arising from the study's design bear consideration.

Because of the small number of participants and the descriptive nature of this study, the findings cannot be generalized beyond the six home care nurses who shared their experiences. The domain-relevant and interactionist nature of creativity further makes it impossible to apply the findings of this study directly to other rural home care nurses, let alone to nurses in other settings and specialties.

That the study is based on individual participant recall also presents limitations in this study. Particularly in light of the findings in this study that the nurses tended not to recognize creativity in their own practice, significant examples and aspects of their creative experiences may have been unintentionally omitted or forgotten. Research employing field observation may be one approach that would provide a more immediate and objective perspective. As well, focus groups may be a way of capitalizing on the nurses' propensity for collaboration and their tendency to recognize creativity more easily in one another.

## Implications

Although this study is limited to the experiences of a few nurses within one subspecialty of nursing, it is hoped that the findings will stimulate thought and provide beginning direction for further research and initiatives in this important area. In practice settings, awareness and recognition of what creativity entails and the conditions in which it can be promoted by personnel at all levels of the nursing organization have the potential to lead to improved client-responsive nursing care; effective utilization of resources; and the satisfaction, well-being, and growth of nurses. Encouragement of creative thinking and questioning and support for the generation, development, and communication of creative ideas also have

the potential to advance the development of knowledge within the discipline of nursing through clinical research and scholarship.

Understanding the nature of creativity in nursing also has implications for nursing education, in directing educational approaches and climates that foster and strengthen creative potential in the preparation and continued professional development of nurses. Considering the domain-specific nature of creativity, awareness of the specific traits and skills that are necessary in the creative nurse allows scholars, educators, administrators, and practicing nurses to focus their efforts towards nurturing and developing personality dimensions most relevant to the creative clinical nurse.

However, it must be cautioned that the nature of creativity, the processes involved, and the specific mixture of intrinsic and extrinsic conditions that facilitate creativity may vary between clinical settings. It is important that general theories regarding creativity be applied with sensitivity, intelligence, and flexibility to individual nursing practice settings.

### Future Research

The potential for further research regarding creativity in nursing practice cannot be understated. It is necessary for creativity to be explored in a variety of different areas of practice so that knowledge about creativity accurately and meaningfully reflects the cultures and circumstances found in the wide range and diversity of nursing subspecialties. In addition, the study of creativity from different levels within the nursing organization, such as the study of nursing managers, as well as clients as significant partners in the nursing relationship, can provide a more complete picture of creativity in nursing. Because group creativity is an area of controversy and interest to many disciplines, and because it is a prevalent theme in the creative

experiences of the nurses in this study, this may be a potential area where nursing could contribute to the development of creativity theory in general.

It is important that a variety of research methods also be employed to explore the concept of creativity fully. Because the understanding of creativity in nursing remains in an embryonic state, further exploratory and descriptive research is warranted in order to discover, elaborate, and define the components of such a complex and abstract concept before it can, if ever, be operationalized sufficiently to be measured and tested (Loehle, 1994; Schoenfeldt & Jansen, 1997). Schoenfeldt and Jansen noted that current methods used to measure creativity are inadequate in that they are based on theories that have approached some or all of the four Ps in isolation. They suggested that field and qualitative research methods could provide insight into creativity in a way that reflects an integrated perspective.

## Conclusion

Understanding creativity in nursing involves finding and putting together the pieces of a dynamic, multidimensional puzzle. This study attempts to contribute to the puzzle by discovering creativity as it was experienced in the practice of six home care nurses. However, there are still pieces missing from even this small section of the puzzle, and many more parts of the puzzle remain to be found and connected. Piecing the puzzle together promises rewards to both nurses and clients; but envisioning the picture completely is a complex, elusive, process that requires extensive research and thought.

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## Appendix A

### Letter of Approval from Agency

November 20, 1995

Ms. Barb Tarnowski
5216 - 20 Avenue
Edmonton, Alberta
T6L 4T5

Dear Ms. Tarnowski:

Thank you for sending your thesis proposal for my review. I believe that nurses who care for clients in their homes do have to demonstrate creativity on a daily basis. It is doubtful however, that they acknowledge their own skills in a conscious way. Perhaps this study will be able to identify this resourcefulness in a way that can be shared with others to stimulate them to try and be innovative. It may also serve to acknowledge the contribution of the nurses involved.

I support the collection of your research data in the Region with the home care nursing staff, but caution you that the choice to participate will be left up to the individuals involved.

I wish you success in your work on this project and encourage you to contact me when you wish to proceed.

## Appendix B

## Ethical Review

University of Alberta
Edmonton
Canada T6G 2G3

Faculty of Nursing
3rd Floor Clinical Sciences Building

**Certification of Ethical Acceptability for Research Involving Human Subjects**

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**NAME OF APPLICANT(S):** Barbara Tarnowski, MN Candidate

**TITLE OF PROJECT:** "Creativity in the Practising Home Care Nurse: An Exploratory Descriptive Study"

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The members of the review committee, having examined the application for the above named project, consider the procedures, as outlined by the applicants, to be acceptable on ethical grounds for research involving human subjects.

Jan 8/1996
Date

Janice Lander, PhD
Chair, Ethics Review Committee

ERC95-050
5005-02-046

## Appendix C

### Invitation to Participate

### IN WHAT WAYS ARE YOU CREATIVE IN YOUR NURSING PRACTICE?

### THIS RESEARCHER WANTS TO KNOW

My name is Barb Tarnowski. I am a Master of Nursing student at the University of Alberta. I am conducting a study to explore creativity in nursing and am looking for volunteers who would like to share their experiences and ideas about creativity in caring for clients. You may not even think that you are creative, but creativity is shown in many ways. By simply telling me about your experiences, you may discover ways in which you have been creative. Your participation requires that you be involved in one or two interviews, each lasting approximately one hour, and possibly a telephone follow-up. Your participation will be strictly voluntary. All information obtained in the study will be kept confidential, and your name will remain anonymous.

I am looking for Registered Nurses who provide direct home care to clients for at least 50% of their workload.

If you are interested and would like more information, please contact me at 463-3092. Please telephone collect if the call will be long distance.

## Appendix D

### Interview Guide

Tell me about one of your experiences in caring for a home care client whom you thought was creative. Are there other times in your practice when you were not directly caring for clients when you thought you were being creative? Describe the experience(s).

Who among your nursing colleagues would you consider to be creative? Why? Give examples of how they have shown creativity.

What makes it easier or more comfortable to be creative (be flexible/ adapt/solve the problem)? Is there anything from your past experiences (in nursing/outside of nursing) that has enhanced your ability to be creative in providing nursing care? *Pertaining to a particular situation:* What made it easier to be creative at that time? How were you feeling about yourself at that time?

What hinders you from being creative? Is there anything from your past experiences (in nursing/outside of nursing) that has decreased your ability to be creative in providing nursing care? *Pertaining to a particular experience:* Was there anything that hindered you from being creative? Have you been in other situations where you felt that you could not be creative? What was the situation like? How were you feeling about yourself at that time?

*Questions that may be used as contingencies during interviews to stimulate expression of ideas or expand and further explore aspects of creativity:*

It has been said by some that you don't need to be creative to be a nurse. How would you respond to this statement?

Tell me about an experience you had in caring for a patient that was unique or different from the usual.

Was there anything about the situation that set it apart or made it unique to other situations you have been in? How did you deal with that?

Were there any ways in which you needed to be flexible or do something differently than you normally would? Describe how you managed the situation. How did you think out the situation? What were you feeling?

Were there any problems that you needed to work out? What were they? How did you go about coming up with a solution?

Would you consider the approach you used a creative one? Give me an(other) example when you thought creativity was used in caring for clients.

## Appendix E

### Informed Consent Form

**Principal Investigator:**
Barbara Tarnowski, BScN, RN
Faculty of Nursing
University of Alberta, T6G 2B7
Telephone: 463-3092

**Project Title:** Creativity in the Practicing Home Care Nurse: An Exploratory Descriptive Study

**Faculty Supervisors:**

Dr. J. Olson
Faculty of Nursing
University of Alberta
Telephone: 492-6250

Dr. L. Reutter
Faculty of Nursing
University of Alberta
Telephone: 492-5909

**Purpose of the Study:** The purpose of this study is to gain a better understanding of how creativity is demonstrated in nursing practice.

**Procedure:** If you decide to participate in this study, you will be interviewed in person by the researcher one to three times. Each interview will last approximately one to one-and-a-half hours. The interviews will be done at times and places that are convenient to you. Although the first and probably the second interview will be done in person, final interviews, if needed, will be shorter and done by telephone. During the interviews, you will be asked to describe situations in your nursing practice and examples of nursing care that you think were creative. All interviews will be tape recorded. Also, at the end of the first interview, you will be requested to complete a form asking some background information about yourself (age, education, years of nursing experience). It is anticipated that you will be involved for no more than four hours in total.

Your identity will be kept confidential. Only the researcher will know your full name. The interview tapes and any written records that contain your name will be kept by the researcher in a locked cabinet. Although a secretary will be typing out the interviews, your last name will not be revealed. A pseudonym or numbers will be used in place of your name in all typed interviews, research materials, and reports about the research so that your identity will not be revealed. The only other persons who will have access to the typewritten interviews are the four members of the thesis committee. Direct quotations and examples from your interviews may be

used in any publications or presentations. However, in these, your identity will be concealed by the use of a pseudonym.

Participation in this study is entirely voluntary. You are free to stop the interviews, not answer questions, or drop out of the study at any point in time by simply letting the researcher know your wishes, either verbally or in writing. Any information given prior to your withdrawal will be used only with your permission. If you decline permission, all tape recordings and written records regarding your participation will be destroyed. There will be no ill consequences as a result of your withdrawal. You may also ask questions about the study at any time, and the researcher will answer them to your satisfaction. Any questions or concerns may be communicated to the researcher, Barb Tarnowski, by telephoning her. You may also consult the Faculty Supervisors listed above with your questions or concerns by telephone.

The consent forms for this study and all tape recordings of the interviews and identifying information will be destroyed seven years after completion of the study. However, the written records and materials will be retained and may be used for further research or educational purposes if ethical approval is received.

There are no anticipated risks in participating in this study. Although you may not directly benefit from this study, the results from this study may help nurses use creative approaches in practice to improve nursing care. The results may also provide information about how nursing educators and managers can foster creativity. The results of the study will be shared with you, at your request.

**Consent to Participate**

This is to certify that I, _____, understand the above information and agree to participate in the study. Any questions I had about the study have been answered to my satisfaction.

I have a copy of this form to keep.

_____ _____
(Signature of Participant) (Date)

_____ _____
(Signature of Researcher) Date)

If you wish to receive a summary of the study when it is complete, please fill out the next section:

Name: _____
Address: _____

## Appendix F

### Structured Demographics Form

BACKGROUND INFORMATION

1. Your age:

2. Highest level of nursing education completed:

   Diploma  Undergraduate degree(s)  Master's degree(s)  Ph.D.

3. Do you have any diplomas/degrees in fields outside of nursing?

   Yes  No

   Please specify field or area of diploma/degree:

4. Employment status:

   Full-time  Part-time  Casual

5. Years worked in home care:

6. Years worked in nursing:

7. Have you worked in fields of nursing other than home care? Please specify the area(s):

8. Are there aspects of your life outside of nursing in which you feel you are creative? Please specify:

THANK YOU FOR YOUR COOPERATION.

## Appendix G

### Responses from Participant Demographic Questionnaire

1. Age: 27, 34, 38, 39, 42, 47

2. Nursing education: 3 Diploma in Nursing
   1 currently taking Post-Basic BScN
   1 has Midwifery and Psychiatric Diploma
   3 Undergraduate Nursing Degree

3. Diplomas/Degrees outside of Nursing: none

4. Employment Status: 3 full-time
   3 part-time

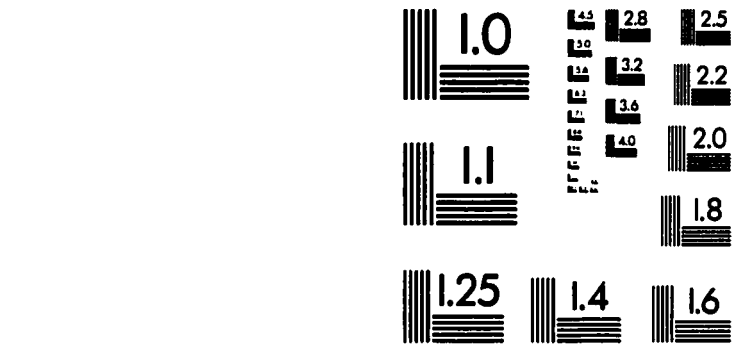
5. Years worked in Home Care: 1, 3, 6, 7.5, 8, 14

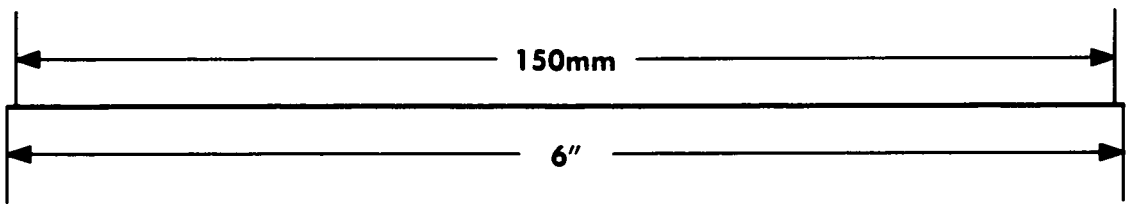
6. Years worked in Nursing: 5, 8, 14, 17, 18, 25

7. Fields of Nursing other than Home Care:
   Acute Care (Surgery, Medicine, Emergency, Pediatrics, Intensive Care); Administration; Long Term Care; Midwifery; Psychiatry; Oncology; Stroke; Rehabilitation

8. Creative activities outside of Nursing (as stated by participants, numbered 1-6):
   1. None really, I'm not musical or artistic.
   2. Looking after my 3 children. Sitting on countless boards, you have to be diplomatically creative.
   3. Arts and crafts.
   4. Writing, Painting, Woodwork.
   5. Coaching in Sports.
   6. Bereavement counselling and workshops - I feel this is an outlet where I can express myself and also learn from others. Painting. I take music lessons on and off. Raising teenagers is a challenge to my creativity.

TEST TARGET (QA-3)

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# The Quality of Life of Adult Asthmatics

by

Katharina Ann Van Veen 

A Thesis submitted to the Faculty of Graduate Studies and Research in partial fulfillment of the requirements for the degree of Master of Nursing

Faculty of Nursing

Edmonton, Alberta

Spring, 1998

**University of Alberta**

Faculty of Graduate Studies

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research for acceptance, a thesis entitled **The Quality of Life of Adult Asthmatics**, submitted by **Katharina Ann Van Veen** in partial fulfillment of the requirements for the degree of **Master of Nursing**.

Dr. Carolyn Ross (Co-Supervisor)

Dr. Terry Davis (Co-Supervisor)

Dr. Wendy Austin

Dr. Barbara Paulson

Date: April 16, 1998

## Abstract

The purpose of this study was to examine the quality of life of a group of adult asthmatics from a community setting. An exploratory, nonexperimental research design was used in a sample of fifty-six subjects to explore the relationships between gender, objective and subjective asthma severity on quality of life. The clinical characteristics of this sample were congruent with a well controlled mild category of asthma. Major findings included that the quality of life of adult asthmatics in this sample was relatively high. There were no differences between gender on quality of life. There appears to be a relationship between how individuals perceive their disease severity and quality of life. Nursing implications include the importance of assessing individuals' perception of asthma severity. Given the small sample size and non-random sampling technique, replication of this study is required.

Acknowledgment

Without the support and encouragement of a number of people, this thesis would not be a reality. I would like to express my sincere appreciation and thanks.

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# CHAPTER ONE

## Introduction

Asthma is a chronic respiratory disease that affects four to five percent of the adult population (Halfon & Newacheck, 1993). In the past several decades, Alberta and Saskatchewan have reported the highest mortality rates for asthma in the country (Mao, Semenciw, Morrison, MacWilliam, Davies & Wigle, 1987; Svenson, Woodhead & Platt, 1993; Wilkins & Mao, 1993). There is a growing interest in using quality of life measures to assess the impact of interventions on adults with asthma (Rose & Weiss, 1996; Gruffydd-Jones, 1997).

Research in the area of quality of life has developed rapidly over the past several years. The well-being of individuals has been recognized as equally as important as physical treatment and cure (de Haes & van Knippenberg, 1985). Individuals are becoming more involved in decisions regarding their own health which includes consideration for their quality of life. Medical progress and the increased cost of healthcare has also prompted policy-makers to consider quality of life when evaluating expensive medications, prolonged treatments and health care interventions (Hadorn, 1991). The development of quality of life research will enhance the ability of individuals to make their own decisions regarding their health care. As health care professionals, nurses have a responsibility to be involved and contribute to this area of research as quality of life affects patient care.

Although the quality of life of an individual can be measured through objective criteria, e.g. job status or income, it is how the individual perceives their own life that ultimately defines quality of life (Cella, 1992; Ferrans, 1990). Quality of life tools have

been developed to provide a "quantification of the impact of disease on a patient's life and perceived well-being in a formal and standardized manner" (Jones, 1991, p. 677). Several disease-specific quality of life tools have been developed for respiratory disease ( Ferrans & Powers, 1992; Maille, Koning, Zwinderman, Willems, Dijkman & Kaptein, 1997) and specifically for asthma (Hyland, 1991; Juniper, Guyatt, Ferrie & Griffith, 1993; Marks, Dunn & Woolcock, 1992).

There have been several studies conducted regarding asthma and quality of life. The majority of these studies have been medication trials that have utilized quality of life as an outcome measure. Decreased asthma severity has been correlated with improved quality of life in eight of nine studies (Apter et al. 1996; Hyland, Kenyon & Jacobs, 1994; Jones et al. 1994; Juniper, Johnston et al. 1995; Mahajan, Okamoto, Schaberg, Kellerman & Schoenwetter, 1996; Mao, Semenciw et al. 1987; Marin, Carrizo, Garcia & Ejea, 1996; Okamoto, Noonan, Deboisblanc, & Kellerman, 1996; Rutten-van Molken et al. 1995). Malo and colleagues (1993) found in a study of occupational asthmatic adults, that subjects with more severe asthma had a decrease quality of life. They recommended that further research comparing asthma severity and quality of life is needed to determine the magnitude of differences between subjects (Malo et al. 1993).

Gender differences on quality of life scores, beyond baseline characteristics, has had only minimal attention in the published literature (Malo et al. 1993). Although asthma severity has been associated with quality of life, gender has not been clearly recognized as an important variable to study. The various domains inherent in quality of life tools has not been clearly described or explored in relationship to gender or disease severity.

## Purpose of Study

The purpose of this study was to gain information on the quality of life of adult asthmatics. This study described the quality of life of adult asthmatics using two disease specific quality of life measurement tools. Gender and disease severity was also explored in relationship to the quality of life of adult asthmatics. The specific research questions addressed were:

1) What is the quality of life of adults with asthma who have been referred to a pulmonary specialist in a Canadian out-patient setting?

2) Are there differences between women and men with asthma and quality of life?

3) Do asthmatics with low objective asthma severity compared to those with high objective asthma severity differ in quality of life?

4) Do asthmatics with low subjective asthma severity compared to those with high subjective asthma severity differ in quality of life?

## Significance of the Study

The measurement of quality of life is important to clinical practice to facilitate communication, identify aspects of an individual's life that are the greatest concern and to plan and evaluate individualized interventions based on this information. It is important to study the concept of quality of life from a nursing perspective. Quality of life facilitates the provision of patient-centered care, based on the individual patient's values (Ferrans & Powers, 1992). The nature of nursing is such that many of the interventions and anticipated outcomes impact the quality of life of individuals (Harrison, Juniper & Mitchell-DiCenso, 1996). Quality of life can be used as an outcome measure when

evaluating nursing practice therefore it is imperative that nursing research is conducted in this area.

The research was designed to explore the quality of life of adult asthmatics. Information from this study can be used to describe the characteristics of adult asthmatics and their quality of life. The results of this study will help to clarify the relationship between gender, disease severity and quality of life. These findings will contribute to knowledge regarding the specific disease asthma. Finally, this study will also contribute to the growing body of knowledge in the nursing literature regarding quality of life.

## Summary

The purpose of this study and the research questions have been established in this first chapter. The significance of quality of life and asthma, as it pertains to Nursing, has been explicated. Chapter 2 contains a review of the literature on quality of life, asthma and relevant research done in this area. The study design and methodology are presented in Chapter 3. The results of the study are documented in Chapter 4. Discussion, limitations, recommendations for further research and implications for nursing for practice are presented in Chapter 5.

# CHAPTER TWO

## Literature Review

The literature was examined for information on asthma and quality of life. The literature review is presented as follows: first, a definition of asthma will be presented. Secondly, the concept of quality of life will be discussed including historical background, conceptual and operational definitions. Thirdly, research regarding quality of life and asthma will be discussed in relationship to gender and disease severity.

### Asthma

Asthma is a chronic inflammatory disorder of the airways. In asthma there is a narrowing of the airways, or bronchi, which causes a greater effort to draw air into the lungs and to expel this air. An asthmatic's airways are sensitive or hyperresponsive, and when irritated, airflow is limited and exacerbation's (or attacks) occur causing coughing, shortness of breath and difficulty breathing. These symptoms are highly variable both in occurrence and severity. Symptoms can be intermittent, only occurring at certain times of the year, or persistent, occurring two or three times a week (National Institutes of Health, 1995). Generally asthma severity is classified as mild, moderate or severe based on symptoms, clinical signs and pulmonary function tests. There is no universally accepted gold standard that measures and classifies asthma severity (Enright, Lebowitz & Crockroft, 1994; Wahlgren, Hovell, Matt, Meltzer, Zakarian & Meltzer, 1997). The Asthma Committee, of the Canadian Thoracic Society, have developed Canadian Consensus Guidelines for consistency in defining asthma severity and for the treatment of asthma. Asthma is defined as "a disorder of the airways characterized by paroxysmal or

persistent symptoms (dyspnea, chest tightness, wheeze and cough), with variable airflow limitation and airway hyperresponsiveness to a variety of stimuli" (Ernst, Fitzgerald & Spier, 1996, p.89).

The exact cause of asthma is complex and can be considered an interaction between genetics and environmental factors (Hopp & Townley, 1990). A strong family history of asthma increases the likelihood that an individual may develop asthma, but environmental factors can also affect the development of asthma in some people. Acute exacerbation's of asthma are often triggered by environmental allergens that can be found both indoors and outdoors, at work and at home. Air pollution, dusts, molds, fungi, cigarette smoke, and animals can all trigger an asthma attack. Emotions and personal stress may also affect asthma patients (Lane, 1996). The primary goal in the control of asthma symptoms is to obtain the best results possible for an individual with the fewest symptoms, the least interference with daily activities, and with the minimal amount of medication (Ernst, Fitzgerald & Spier, 1996).

Non-invasive pulmonary function tests are used to diagnosis asthma, determine severity and manage treatment. Measuring devices, called spirometers, record the rate and the flow of air exhaled. The forced vital capacity (FVC) is the amount of air that can be forcefully expelled from a maximally inflated lung. Force expiratory volume in 1 second ($FEV_1$) is the volume of air expelled during the first second of the FVC. Values are expressed as a percentage of the value expected for someone of the same gender, age and height. The rate of the forced air exhaled rises quickly (peak flow) and then declines slowly until all the air is expelled. In asthma patients, narrowed airways cause resistance,

therefore, not as much air can be expelled in 1 second and the $FEV_1$ will be reduced (Mosby, 1992; West, 1992). With asthmatic patients, 15 minutes after the administration of a $beta_2$-agonist (a short acting inhaled medication) the $FEV_1$ should increase as the airways expand in response to the medication administered. A 12% or greater improvement in $FEV_1$ (at least 180 ml) is considered significant for a diagnosis of asthma (Ernst, Fitzgerald & Spier, 1996). The concept quality of life will now be presented.

Quality of Life

Aristotle, whose discussions regarding the pursuit of happiness and what constitutes the good life, is considered by some to be the first reference to quality of life (Adler, 1978; Ferrans, 1996; Kleinpell, 1991; Molzahn, 1990; Zhan, 1992). The quality of life of an individual was recognized early in this century by the World Health Organization in their efforts to define health as more than the absence of disease and infirmity (WHO, 1947). The concept of quality of life was developed following the second World War to emphasize the good life, which required more than just material resources. In a 1964 speech by Lyndon Johnson, a former American president, the phrase 'quality of life' was first used and has subsequently been referenced in a multitude of situations (Campbell, 1981; McCall, 1975). From these early beginnings, the term quality of life has proliferated, but a lack of agreement on how to define this concept has remained.

Conceptual Definition

The nature of the concept 'quality of life' is abstract and cannot be directly observed. Abstract concepts must be identified by their attributes and characteristics, which when well developed are easily recognized as defining that concept (Morse,

Hupcey, Mitcham & Lenz, 1996). QOL has been described as polymorphous when, in a review of over 250 QOL articles, it was found that only a few articles using the term quality of life actually defined the concept (van Dam, Somers & van Beek-Couzjin, 1981). Although efforts have been made to define quality of life multiple definitions exist, and to date the concept has not been universally defined (Kleinpell, 1991; Meeberg, 1993; Oleson, 1990; Zhan, 1992). This lack of a universal definition can lead to inconsistencies in the interpretation of quality of life and how it is measured (Ferrans & Powers, 1985). Clarity in defining the concept is critical because differences in meaning can result in substantial differences in outcomes for both research and practice.

To define quality of life, it is important to first examine the etymology of the concept. Quality of life is not found in the dictionary as a single term, therefore, quality and life, will be examined separately. Webster's (1986) dictionary has 21 different definitions for the term life which include: 1) an animate being: the quality that distinguishes a vital and functioning being from a dead body or purely chemical being; 2) the course of existence: the sequence of physical and mental experience that make up the existence of an individual; and 3) the earthly state of human existence as distinguished from the spiritual state after death. Life refers to the capacity for growth, functional activity and continual change until death, living things and their activities are life (Oxford, 1993). It is clear from these definitions that life pertains to living beings, and although plants are alive, only animals and humans have life (Meeberg, 1993). Molzahn (1990) states although life is a complex concept, it is one that most individuals seem to understand. The word quality comes from the Latin origin of *qualis*, meaning 'of what

kind' (Webster, 1986). In contrast to the term life, Webster's has only 8 definitions for the word quality which include: 1) peculiar and essential character; 2) degree of excellence, 3) a special or distinguishing attribute. Quality refers to general excellence (Oxford, 1993). When quality is combined with life, there is the notion that quality is not only an essential feature of life, but also a distinguishing one. Quality can also imply a comparison, as there are varying degrees of excellence in life. McCall (1975) suggests that quality of life is a special or distinguishing attribute in a non-evaluative sense.

Much debate has occurred in the literature regarding what should be included as essential components in a definition of quality of life (QOL) (Ferrans, 1990; McCauley & Bremer, 1991). Similar concepts such as well-being, worth of life, happiness, satisfaction, and physical functioning have been included in definitions of quality of life. QOL definitions can also include either subjective criteria, objective criteria or both, and can have either a unidimensional or multidimensional focus. The following section will address the various components of quality of life definitions.

Objective and Subjective Definitions

QOL can be defined objectively using external conditions or descriptions of life-style. These objective measures or social indicators include socio-economic status, employment, education, living conditions, health, and marital status (McCauley & Bremer, 1991; Oberman, Wayne, Kouchoukos, Charles, Russell & Rogers, 1982; Stormberg, 1988). Campbell, Converse and Rodgers (1976) argue that although these indicators represent the individual's life condition they do not measure that individual's actual life experiences. The use of only objective indicators may contribute little to understanding an

individual's quality of life experience, and what is ultimately chosen to be measured may be based on a researchers own values and priorities which can result in bias (Holmes, 1989; McCauley & Bremer, 1991; Najman & Levine, 1981). This has been supported in the findings of Pearlman & Uhlmann's (1988) study where objective physicians' ratings of patient's QOL correlated weakly ($r = .30$) with the subjective patients' ratings on the same scale.

To assist medical practitioners, Shaw (1977) proposed an equation to provide an objective and quantitative manner in which to identify factors which affect quality of life. The equation is meant to focus on quality of life factors that physicians may otherwise not consider. Eleven years later, Shaw (1988) continues to clarify the intent of the equation as a means to assist in the analysis of situations where an individual is incompetent to make a QOL decision independently (i.e. infants, the comatose, or otherwise mentally incompetent). Shaw argues that decisions regarding medical treatment must be made and this equation simply assists in considering not only an individual's physical, intellectual and social capacities, and the burden of suffering, but also the resources realistically and reasonably available to help achieve a life 'worth living'.

QOL can also be defined in a subjective manner, where the individual evaluates their own QOL. Cella (1992) states that QOL can only be understood from the patient's perspective. The underlying thought processes of an individual mediates their perceptions, and therefore, their quality of life. Cultural, ethical, religious and other personal values can influence the perceptions and meaning of QOL (Zhan, 1992).

Happiness and satisfaction are two concepts that have been related to subjective QOL, but should not be considered synonyms with QOL (Ferrans, 1990; McCauley & Bremer, 1991). Happiness can be considered a short-term feeling or transitory affective state, whereas satisfaction is a judgment or cognitive evaluation of life's conditions. Life satisfaction is responsive to change, can be influenced by external conditions and is considered to more closely relate to the concept QOL (Campbell, Converse & Rodgers, 1976; Zhan, 1992). Life satisfaction has been used to determine convergent validity for a quality of life measurement tool (Ferrans & Powers, 1985).

An individual's perception of illness may be affected by how they feel and think, regardless of the observable objective criteria in which their illness is measured. Subjective issues related to defining QOL include: that "good or bad" QOL may mean different things to different people; that validity becomes more difficult to assess when measuring subjective verses objective QOL; and that it is difficult to collect subjective data when patients are unable to communicate verbally (Ferrans, 1990; Campbell, Converse & Rodgers, 1976). These issues must be considered when defining quality of life.

Definitions that include the use of both objective and subjective indicators to define and measure QOL can be found in the literature (Campbell, Converse & Rodgers, 1976; McCall, 1975). However, Ferrans (1990) states "objective indicators are important as measures of QOL, but should be interpreted as supplementary to subjective indicators, which measure QOL more directly" (p. 252).

Dimensions

Another issue when defining QOL is the identification of factors that assist in defining the concept. Some researchers have devised a single-item scale to measure the overall quality of life of an individual (Bernheim & Buyse, 1984). Molzahn (1990) suggests that an overall total score is appropriate to measure QOL and that a single rating on a scale or continuum, from very low to very high should be considered. Cella (1992) suggests that this should be considered a simplistic notion and a unidimentional scale is not a reasonable estimate of overall quality of life.

Multidimensionality refers to the broad range of factors or domains that when combined define the global construct of quality of life. Cella (1994) argues that although QOL is multidimensional, there is less agreement as to the specific nature of these dimensions. The author further states that psychometric data that might help to determine the underlying dimensions of QOL tools are rarely reported. Researchers in the social sciences have done extensive work in developing the domains associated with QOL (Andrews & Withley, 1976; Campbell, Converse, & Rodgers, 1976; Flanagan, 1982). Flanagan (1982) used an empirical approach, the critical incident technique, to define the main determinants of QOL which were 15 components important to an individual's QOL. Dimensions of QOL can also include physical, functional, emotional and social well-being (Cella, 1994).

Zhan (1992) defines QOL as the degree to which a person's life experiences are satisfying. The concept is both multi-dimensional and context-related: one's personal background, social situation, culture, environment and age influence a person's

perceptions of meaning and quality of life. Tartar, Erb, Biller, Switala and van Thiel (1988) have conceptualized QOL as a multi-faceted construct that encompasses the individuals' behavioral and cognitive capacities, emotional well-being, and abilities requiring the performance of domestic, vocational and social roles.

There is no universal definition or gold standard in which to define and measure QOL (Spritzer, 1987). Ultimately, how individual researchers choose to define quality of life depends on their particular ideology and on the instruments they use to operationalize the concept in any given clinical or research setting (Edlund & Tangredi, 1985; Harrison, Juniper & Mitchell-DiCenso, 1996; Ferrans, 1990; Kleinpell, 1991; Oleson, 1990).

Operationalization of the Concept

The broad nature of QOL presents a challenge to the researcher in the selection of an instrument, or instruments, to measure the concept when beginning a research project. When choosing an instrument in which to operationally define QOL, the researcher(s) should ensure that the entire construct is represented and that one or several instruments may be needed (Ferrans, 1990; Grant, Padilla, Ferrel & Rhiner, 1990; Jalowiec, 1990). Consideration must also be given to the conceptual viewpoint taken by the researcher. The distinction between what quality of life *is* from what *contributes to* quality of life needs to be determined (Harrison, Juniper, Mitchell-DiCenso, 1996; Stewart, 1992). Hyland, Finnis and Irvine (1991) suggest that the purpose for QOL tools is to meet either an economic or medical objective. Economically, the cost of a treatment is considered in relationship to the QOL of an individual, or medically, the outcome of clinical interventions is considered in relationship to the overall benefit to a patient. Both

objectives are related to outcomes and are measured through the use of QOL tools. Measuring QOL as a clinical outcome has become increasingly important in clinical trials (Guyatt, Veldhyzen van Zanten, Feeny & Patrick, 1989).

The multiple dimensions of QOL suggest that multiple perspectives and tools, are required to measure the QOL of individuals. Jalowiec (1990) outlines a variety of advantages and disadvantages to using multiple measure to assess QOL. Advantages include the ability to assess a wider range of dimensions affecting QOL, including subjective and objective indicators; greater flexibility in conceptualizing the concept; and the triangulation of measurement approaches will increase the psychometric properties of the instruments used. A comprehensive assessment of a patient's QOL will provide increased insight into which factors are being affected by the illness and which treatment regimes aid or distract from their QOL. Disadvantages of using more than one tool includes the increased time and energy required by the subjects to complete the questionnaires. The practical costs of utilizing several tools, including the complex statistical analysis that will be required on the part of the researchers, should also be considered.

The use of a single tool in which to measure QOL addresses the disadvantages of using multiple tools. Although the length of the instrument may be increased, the administration of one questionnaire, the coding and the data analysis will be simplified (Grant, Padilla, Ferrell & Rhiner, 1990). In the selection of an instrument, consideration of the psychometric properties of that instrument is always necessary. Studies that test the

psychometric properties of QOL tools contribute to the advancement of a single definition of QOL.

Generic vs. Specific Instruments

There are two types of instruments for measuring quality of life. Generic instruments have been used to identify selected dimensions of QOL and include: The Sickness Impact Profile, the Psychological General Well-Being Scale, and the Nottingham Health Profile (Hyland, Finnis & Irvine, 1991; Kinney, 1995). There are also disease-specific tools that focus on dimensions important to a specific health problem such as asthma (Hyland, Finnis & Irvine, 1991; Ferrans & Powers, 1992; Juniper, Guyatt, Ferrie, Griffith, 1993).

Jones (1995) identifies the need for disease specific measurement tools when studying the QOL of specific populations. Pertinent aspects of quality of life related to a particular disease are regarded as being more sensitive to disease or treatment related changes in QOL than are found in general health status instruments (Mahajan, Okamoto, Schaberg, Kellerman & Schoenwetter, 1997).

In summary, the definition of QOL is dependent on the tools utilized. Consensus in the literature suggests that the use of a single, multi-dimensional, disease specific tool is considered the most appropriate when measuring quality of life in specific populations. Research related to asthma and quality of life will now be presented.

Quality of Life and Asthma

Asthma medication trials have generally focused on the improvement of symptoms, but little recognition has been given to whether the patient actually feels better and can

function better physically, socially and emotionally in their everyday lives (Juniper, Guyatt, Ferrie & Griffith, 1993). This is especially true with asthmatic patients who may have improved pulmonary functioning with oral corticosteriods, but long term use of these drugs can have a profound effect on their quality of life e.g. Cushing's syndrome, peptic ulcers and hypertension (Okamoto, Noonan, deBoisblanc & Kellerman, 1996). Recent clinical trials that have studied the effectiveness of asthma medications have employed quality of life questionnaires when determining outcomes. The following section summarizes research studies that have utilized QOL as an outcome measure in medication clinical trials. The variables disease severity and gender will be the focus of this summary.

To date, the majority of research studies on asthma and quality of life have focused on the effects of various asthma medications. In an early research study, no relationship was found between the inhaled steroid medication, beclomethasone diproprionate and the quality of life of patients with asthma (van Schayck, Dompeling, et al. 1995; van Schayck, Rutten-van Molken et al. 1992). Quality of life was measured using the generic tools, Inventory of Subjective Health (ISH) and a Dutch version of the Nottingham Health Profile (NHP). At baseline, the subject population was noted to have a significant decreased QOL when compared to the general population. Results of this four year study were published after year two and at the end of year four. Although the researchers found that the asthma medication significantly improved lung function and temporarily decreased the severity of symptoms, this was not reflected in an improvement in QOL scores. Decline in $FEV_1$ values showed no correlation with QOL scores. The researchers concluded that an explanation for these findings may be due to the generic QOL tools

selected. Disease specific QOL tools, which might have been more sensitive to subtle changes in QOL, were not available at the start of their study. The researchers also suggested that the length of the study may have contributed to the inability to detect QOL changes as patients learned to live with their disease.

Since this early work, a relationship has been found between disease severity and within subject changes on quality of life (Apter et al. 1996; Jones et al. 1994; Juniper, Johnston et al. 1995 ; Mahajan et al. 1997; Malo, Cartier et al. 1996; Marin, Carrizo, Garcia & Ejea, 1996; Okamoto, Noonan, DeBoisblanc & Kellerman, 1996). The use of nedocromil sodium (NS), an oral asthma medication was found to decrease asthma severity and improve quality of life (Jones et al. 1994; Marin, Carrizo, Garcia & Ejea, 1996). The disease-specific tools, the St. George's Respiratory Questionnaire and the Asthma Quality of Life Questionnaire (AQLQ), were used to measure QOL in these studies.

The use of fluticasone propionate, an inhaled steroid medication, has also been found to contribute to improvement in asthma control and quality of life (Mahajan et al. 1997; Okamoto, Noonan, DeBoisblanc & Kellerman, 1996). Quality of life was measured using the Medical Outcomes Study Short Form-36 (SF-36), and the disease specific, Living With Asthma Questionnaire (LWAQ). The baseline measurement of subject's QOL was similar using both tools and both tools found improved QOL scores following medication treatment.

The disease specific quality of life tool, the AQLQ, was used to compare two inhaled asthma medications (Juniper, Johnston, et al. 1995). Findings included that the

QOL for mild to moderate asthmatics is better, both overall and for individual domains, when patients take salmeterol rather than salbutamol or a placebo. Juniper and colleagues (1995) state that when QOL is measured using a disease specific tool, the physical, emotional and social benefits of the medication used can be considered. Hyland, Kenyon & Jacobs (1994) in a study of the drug salmeterol, found that the QOL mean score on the Living With Asthma Questionnaire was positively correlated with medication usage. The scores from the domains sport, sleep, and work on the LWAQ demonstrated higher correlation's with medication usage than the mean score of the overall tool. The authors in both of these studies concluded that not only should QOL measures be included in medication trials, individual domain scores on QOL tools should also be taken into consideration.

Two research studies have identified improved QOL of asthmatics based on education programs (Boulet, Boutin, Cote Leblanc & Laviolette, 1995; Ringsberg, Wiklund & Wilhelmsen, 1990). Subjects in both studies were divided into two groups, those who received an asthma education program and those who did not receive the program. The Nottingham Health Profile, the Mood Adjective check list and a modified version of a QOL questionnaire for severe heart failure were utilized by Ringsberg, Wiklund and Wilhelmsen (1990). Boulet and colleagues (1995) utilized the AQLQ and chart reviews were done for one year before and after the education program. These reviews included emergency room visits, hospitalizations and absenteeism from work or school. It was noted that young women with a short duration of asthma had improved QOL scores. The researchers concluded that statistically significant changes in overall

AQLQ scores are quite difficult to obtain, especially if asthma is well controlled. They suggested that there may be more marked improvement in QOL for more unstable, severe asthmatics and education programs.

Malo and colleagues (1993) conducted a research study that described the QOL between two groups of adult asthmatics with occupational asthma. Quality of life was measured utilizing the AQLQ (Juniper, Guyatt, Ferrie & Griffith, 1993) as a discriminative instrument. Adult subjects with occupational asthma were paired for disease severity with a control group of non-occupational asthma subjects. Those with occupational asthma had a lower quality of life than the control group. There were no statistically significant differences in scores between men ($\underline{M} = 2.8$) and women ($\underline{M} = 2.5$ ). The researchers identified the need to further study groups of asthmatic patients to determine the magnitude of differences between subjects.

Gibson, Talbot and Toneguzzi (1995) conducted a cross-sectional, analytic survey on the self-management and autonomy of adult asthmatics related to QOL. Subjects were divided into two groups based on asthma severity. The AQLQ and an asthma autonomy questionnaire were mailed to subjects. The mean difference in overall AQLQ scores was .76 indicating that severe asthmatics had a significant decrease in quality of life. There were no statistically significant differences reported for gender. The researchers found no correlation between QOL and the autonomy of adult asthmatics. These results could not support their hypothesis that adult asthmatic subjects with high self-management autonomy have an improved QOL.

In the above studies, asthma severity has been defined in a variety of ways. Mild to moderate asthma severity has been defined as: $FEV_1 \geq 60\%$, Peak Expiratory Flow Rate (PEFR) > 20%, and an increase in $FEV_1$ of 15% following inhaled 200μg salbutamol by metered dose inhaler (MDI). Those subjects who had an emergency room visit within the last 3 months, a hospital stay within the last year, and if they have been on oral steroids within the last month did not fit the criteria for mild to moderate asthma (Juniper, Johnston et al. 1995). Similarly in their definition of mild to moderate asthmatics, Hyland, Kenyon and Jacobs (1994) included $FEV_1$ values of 15% following inhaled 200μg Salbutamol by MDI, and excluded those subjects on oral or inhaled corticosteriods and PEFR > 75% predicted value. Moderate asthmatics were defined as having an $FEV_1$ between 50-80 % of the predicted value, using an inhaled medication for at least 6 months, and an oral or inhaled $beta_2$-bronchodilator for at least 2 weeks prior to the study and no oral steroid use (Mahajan et al.1997).

Apter and colleagues (1996) defined moderate to severe asthmatics using the National Heart, Lung and Blood Institute Guidelines in which at least four of seven criteria listed must be met. This criteria includes: medication usage, reduced exercise tolerance, school or work attendance which is compromised and regular use of antiinflammatory medications required for prolonged periods. Recent hospitalization and emergency room visits has been used to delineate moderate from severe asthma (Boulet et al. 1995; Gibson, Talbot & Toneguzzi, 1995). Severe asthma has been defined as $FEV_1$ values between 40 - 80% of the predicted value and the use of the oral steroid prednisone (Okamoto et al. 1996).

The selection of an instrument to measure QOL appears to be based on the researchers preference and on available tools at the start of the research project. In longitudinal medication clinical trials, a positive relationship between disease severity and quality of life was found in eight of nine studies (Apter et al. 1996; Hyland, Kenyon, & Jacobs, 1994; Jones et al. 1994; Juniper, Johnston et al. 1995; Mahajan et al. 1996; Marin, Carrizo, Garcia & Ejea, 1996; Okamoto et al. 1996; Rutten-van Molken et al. 1995). Few studies have done cross-sectional, descriptive research on adult asthmatics. Disease severity has been defined somewhat differently in each research study. Although asthma severity has been associated with QOL, gender has not been clearly recognized as an important variable to study. The various domains inherent in QOL tools has not been clearly described or explored in relationship to gender or disease severity.

# CHAPTER THREE

## Method

This chapter includes information on the sample, the tools for data collection, reliability and validity of the tools, data collection procedures, data analysis, and ethical considerations.

### Research Design

Secondary analysis is research involving the re-analysis of data to either answer the original research question with improved statistical techniques or to answer new research questions with the same data (Glass, 1976; Polit & Hungler, 1993). Secondary analysis has several advantages. It enables access to larger data bases and closer examination of subunits of data, it is economical, speeds data collection and simplifies the logistics of research (Heron, 1989). Secondary analysis was used in this study to explore new research questions.

A nonexperimental, exploratory design was used to address the research questions. Secondary analysis was conducted on a subset of data drawn from a larger project entitled the "Asthma-Anxiety Project" (Ross & Davis, 1997). Volunteers for the Asthma-Anxiety Project participated in a single, four hour interview during which time a series of questionnaires were administered to collect data including: demographics, asthma history and quality of life.

### Sample

The sample for the "Asthma-Anxiety Project" was comprised of 91 adult asthmatic patients who visited a pulmonary specialist in an asthma clinic in the Capital Health

Authority Region between May and August 1997. Patients were eligible for the study if they were 18 years of age or older, able to speak and understand English, and had met one or more of the diagnostic criteria for asthma based on the Canadian Asthma Consensus Guidelines (Ernst, Fitzgerald & Spier, 1996). For the purpose of this study, raw data was drawn from 56 of the 91 subjects who were screened to rule out anxiety disorders. This subset of data, will be referred to as the total sample for the remainder of these chapters.

Procedure

Data collection for the Asthma-Anxiety Project occurred following ethical approval from the appropriate institutional boards. During a scheduled visit to see the pulmonary specialist, adult patients who met inclusion criteria were approached by a health professional employed at the clinic to determine if they would be willing to be accessed by a nurse-researcher associated with the Asthma-Anxiety Project. Patients who provided access permission were introduced to a nurse-researcher who explained the study and invited their informed consent. All volunteers were contacted by telephone to negotiate a suitable time for an interview with a research assistant.

At the time of the interview, written consent was obtained (Appendix A). During the interview, several interview guides were used to collect demographic and clinical information. Subjects were screened for anxiety disorders using the Anxiety Disorders Interview Schedule-IV (Barlow & DiNardo, 1994). In addition, subjects completed two quality of life questionnaires.

## Instruments

### Sample Characteristics

Demographic data were collected using a form developed by the primary researchers for the purpose of data collection in the larger study (Appendix B). Demographic variables included in the secondary analysis were the subject's age, gender, education, annual combined household income, marital status and the number of individuals who shared their living space. These demographic variables have been found to be associated with quality of life (Ferrans & Powers, 1985; Juniper, Guyatt, Epstein, Ferrie, Jaeschke & Hiller, 1992).

A number of clinical characteristics were drawn from data collected using the Asthma Questionnaire developed for the Prairie Provinces Asthma Study: 1992-1995, conducted by Tough, Hessel, Green, Mitchell, But and Ruff (1996). Only specific clinical characteristics related to asthma, including disease history, symptoms, severity, medications, and health care utilization were drawn from the questionnaire for secondary analysis (Appendix C).

### The Quality of Life Index - Respiratory Version

Quality of life is defined by Ferrans and Powers (1992) as "a person's sense of well-being that stems from satisfaction or dissatisfaction with the areas of life that are important to him/her" (p. 29). The Quality of Life Index - Respiratory Version (QLI-RV) developed by Ferrans and Powers (1992) was utilized to assess the quality of life of adult asthmatic patients in this study (Appendix D). The QLI-RV was developed from a generic Quality of Life Index (QLI) that was used to measure the quality of life of healthy

individuals. The Quality of Life Index questionnaire is a discriminative (designed to differentiate between people), cross-sectional, subjective scale, that provides quantitative data on quality of life (Guyatt, Feeny & Patrick, 1993; Padilla & Frank-Stromborg, 1997).

The QLI was first tested using a group of healthy graduate students (n = 88) (Ferrans & Powers, 1985). Using factor analysis procedures, Ferrans and Powers (1992) found the following four domains within the QLI: health and functioning, socioeconomic, psychological/spiritual, and family. Content validity for the QLI was established through a review of the quality of life literature. Convergent validity was demonstrated by a coefficient of .77 when the QLI total score was correlated with a single item rating of satisfaction with life (Ferrans & Powers, 1985; 1992). A two-week test-retest reliability was .87 using a sample of graduate nursing students. The reported Cronbach alpha's were greater than .90 for the overall score and .70 for the individual domains (Ferrans & Powers, 1985; 1992). Ferrans and Powers have concluded that the QLI is a valid and reliable tool for use with healthy adults and when modified, for chronic illness groups .

Ferrans and Powers (1992) have developed a tool that has the ability to measure quality of life in four domains, as well as overall quality of life. The QLI has been modified for use with other illness groups. Reliability and validity data has been published for a hemodialysis version (Ferrans & Powers, 1985; 1993; Bihl, Ferrans & Powers, 1988); a cancer version (Arzouman, Dudas, Ferrans & Holm, 1991; Belec, 1992); a cardiac version (Bliley & Ferrans, 1993; Daumer & Miller, 1992; Wingate, 1995) and a transplant version (Hicks, Larson & Ferrans, 1992). The tool is also available for use with respiratory, diabetes, arthritis, stroke/head injury, burn, epilepsy, narcolepsy, multiple

sclerosis, spinal cord injury/ quadriplegic, urostomy, and kidney transplant patients. All of these versions are similar to the generic version with questions added to the core items to address the issues specific to each group.

The respiratory version of the QLI has two additional items related to the ability to breathe without shortness of breath and are found in the health and functioning domain. The QLI-RV is a 70-item self-reported instrument that includes the domains: health and functioning (15 items: questions 1 - 8, 13, 16, 17, 18, 26, 27, 28), socioeconomic (9 items: questions 14, 15, 19, 20, 21, 22, 23, 24, 25), psychological/ spiritual (7 items: questions 29 -35), and family (4 items: questions 9 - 12). Consistent with the QLI, the QLI-RV is divided into two sections, one section measures an individual's satisfaction with the various domains in their life, and the other measures how important those domains are to that individual. Subjects respond to each item on a six-point likert scale ranging from 1 (very dissatisfied) to 6 (very satisfied), in the satisfaction section and from 1 (very unimportant) to 6 (very important) for the importance items. Scoring of the instrument requires that the satisfaction scores be recoded to center the scale on zero by subtracting 3.5 from the satisfaction response for each item. Satisfaction scores are then adjusted by multiplying paired satisfaction scores with the importance scores. The overall score is obtained by summing all adjusted scores and dividing the number by the items answered (this accounts for any missing items). To eliminate negative scores, 15 is added to every score. This weighted score reflects individual's values, as well as, satisfaction which produces a more accurate reflection of quality of life (Ferrans & Powers, 1992). The highest scores occur with the combination of high satisfaction/ high importance

responses which reflects the belief that the greatest satisfaction with highly important areas of life contributes to a higher quality of life. Great dissatisfaction with highly important areas of life suggests a lower quality of life. Scores can range from zero to 30, with higher scores reflecting a higher perceived quality of life.

Although this tool can be considered a disease-specific quality of life tool for respiratory illness, this tool is not specific to asthmatic patients. The use of the QLI-RV and its particular psychometric properties has not been published in the literature (Ferrans & Powers, 1992).

The interpretation of scores for the QLI-RV and the domains is a vital component in assessing an individual's quality of life. Although statistically significant differences may be found when analyzing the score of the QLI-RV and domains, the clinical significance of these scores is necessary to determine how these results affect the individual and subsequently clinical practice. The recognition of clinically significant differences will facilitate the evaluation of whether an individual has a higher or lower quality of life compared to others with similar circumstances or disease. A difference of two points in the mean scores and domain scores on the QLI-RV can be considered a clinically significant difference (C. E. Ferrans, personal communication, March 6, 1998).

Asthma Quality of Life Questionnaire

The Asthma Quality of Life Questionnaire (AQLQ) was the second tool utilized to describe the quality of life of adult asthmatics (Appendix E). Juniper (1995) defines disease-specific quality of life as "the way patients feel and how they function in their day-to-day lives as the result of their disease" (p. 3). The AQLQ was designed as an

evaluative instrument to measure small, within subject, changes over time. This tool can also be utilized as a discriminative instrument, to measure differences between subjects (Juniper, Guyatt, Ferrie & Griffith, 1993; Juniper, Johnston et al. 1995; Malo et al. 1993).

The AQLQ was developed through a review of the literature and interviews with both respiratory physicians and asthmatic patients (Juniper, Guyatt, Epstein, et al. 1992). The final questionnaire has four domains that include: symptoms, emotional function, activity limitation and exposure to environmental stimuli. Content validity was established through the process in which the questionnaire was developed and the representation of domains that are important to asthmatics themselves.

There have been a limited number of published articles regarding the psychometric properties of the AQLQ. Research studies, utilizing the AQLQ, have been conducted to assess the effect of medications on quality of life (Apter et al. 1996; Juniper, Johnston et al. 1995); to assess self-management and autonomy on quality of life (Gibson, Talbot & Toneguzzi, 1995) and to assess the validity and reliability of the AQLQ in an out patient setting (Rowe & Oxman, 1993).

Juniper and colleagues (1993) have found that the AQLQ is sensitive enough to detect not only changes in quality of life within adult asthmatics over a period of time, but also differences in quality of life between subjects. Test retest reliability was conducted, with a four week interval, on a group of stable asthmatics with a correlation of .92 supporting the AQLQ as a "one time only" measure of quality of life. Convergent validity has been reported as .73 between the AQLQ and the Living With Asthma Questionnaire (LWAQ ), an other disease specific quality of life instrument (Rutten-van Molken et al.

1995). Juniper and colleagues (1993) concluded that the AQLQ is a valid instrument for both evaluative and discriminative purposes.

To begin the AQLQ, subjects are asked to identify five significant activities that are limited because of their asthma. A list of 27 activities is provided to the subjects to facilitate a response but this is not considered exhaustive. These activities include dancing, talking, and walking upstairs or uphill. Once five activities are identified, subjects are then asked about the extent to which they have been limited in performing each activity by rating them on a likert scale from 1 (totally limited) to 7 (not at all limited). Twenty-seven other questions address issues related to their asthma. The AQLQ is comprised of a total of 32 items in four domains: activity limitation (11 items: questions 1, 2, 3, 4, 5, 11, 19, 25, 28, 31, 32), symptoms (12 items: questions 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 29, 30), emotional (5 items: questions 7, 13, 15, 21, 27) and environmental stimuli (4 items: questions 9, 17, 23, 26). Individual items within the AQLQ are equally weighted. Results are expressed as a mean score from 1 (maximum impairment to quality of life) to 7 (minimum impairment to quality of life) for each domain, as well as for a total score which facilitates the interpretation of results. For example, the results from a domain with 4 items and a domain with 11 items will both be expressed as a score from 1 to 7. The overall quality of life score is calculated from the mean score of all the items.

Juniper, Guyatt, Willan and Griffith (1994) have identified a minimally important change of .5 in the AQLQ or domain scores as representative of an important improvement or deterioration in quality of life. Differences of approximately 1.0

represent a moderate change and differences greater than 1.5 represent a large change. The minimally important difference (MID) has been used to define clinical significance for within subject changes of quality of life (Juniper et al. 1994) and between subject changes (Malo et al. 1993). Further research, comparing other groups of asthmatic subjects would provide more information for interpreting the magnitude of such differences between subjects.

Disease Severity

Objective Asthma Severity. The Asthma Severity Risk Index (ASRI) was used to categorize patient's asthma severity (Appendix F). The ASRI is a weighted scoring procedure developed by Janson-Bjerklie and colleagues (1992). The weighted score for each subject is based on several variables shown to be associated with asthma-related fatalities including: the number, type and route of medications taken to control asthma symptoms; previous hospitalizations within the past year and the need for intubation. Those items given greater weight, e.g. intubation, are associated with higher risk for asthma-related death (Sears, 1988; Strunk, 1989). Potential scores can range from zero to 25, with a score of 25 indicating very severe asthma.

In research conducted by Janson-Bjerklie, Ferketich, Benner and Becker (1992) on 95 adult asthmatics, a statistically significant relationship was found between the total weighted score on the ASRI and other objective measures of asthma severity, e.g. symptom episodes ($r = .33$), report of sleep disturbances ($r = .26$) and spirometric measures, $FEV_1$ ($r = -.28$). When the ASRI was simply summed (unweighted score), the correlation was even stronger with $FEV_1$ ($r = -.57$). This demonstrated further support for

the association between asthma risk and asthma severity. This tool is a quick and simple way to objectively identify asthma severity, and it has been demonstrated to be a valid and reliable tool.

Subjective Asthma Severity. Subjective asthma severity refers to the individual's own evaluation of their disease (Nguyen, Wilson & German, 1996). Raw data on subjective asthma severity was drawn from responses to one item in the Asthma Questionnaire: "How would you rate the overall severity of your asthma condition?" Three fixed-alternative options were offered as follows: severe (seriously interferes with normal lifestyle), moderate (occasionally interferes with normal lifestyle), and mild (infrequently interferes with normal lifestyle).

## Data Analysis

Data was prepared for analysis by coding all questions and entering responses into the computer. A code book was utilized to guide this process. All data were coded by the investigator and entered into a data file using the Statistical Package for Social Sciences (SPSS) for Windows 7.0 (Norusis, 1996). All data was rechecked to ensure accuracy of data entry. Frequency tables were run for every variable, in order to check for inconsistencies. The final data file is considered to be free of coding errors. The conventionally accepted level for Type I error ($p \leq .05$) was used throughout the data analysis.

### Sample Characteristics

Descriptive statistics were used to summarize demographic and clinical variables. Interval data including age, and the number of years since asthma diagnosis were

summarized using mean, standard deviation and range. Nominal data, including fixed-alternative responses were summarized using frequencies and percentages. Gender differences on demographic and clinical variables were examined using independent t-test analysis for the continuous variables and chi-square analysis for nominal data.

Asthma and Quality of Life

The quality of life of adults with asthma was determined using the QLI-RV and the AQLQ. Both tools were scored according to established procedures previously outlined. All quality of life scores were considered continuous data and were summarized using mean, standard deviation and range.

Gender and Quality of Life

Parametric statistics were used to test the null hypothesis. Gender differences and quality of life were examined by comparing the mean of the overall score and each domain for the QLI-RV and the AQLQ using independent t-tests with Levine's correction for inequality of variance. Clinically significant differences were identified by a two point difference between the mean scores for women and men on the overall score and domain scores for the QLI-RV, and a .5 difference on the total score and domain scores for the AQLQ.

Disease Severity and Quality of Life

Objective Asthma Severity. Frequencies and percentages were calculated for the ASRI. To facilitate data analysis, subjects with scores at or below the median of two were placed into the low objective asthma severity (OAS) group. Those with a score greater than the median were placed into the high OAS group.

Subjective Asthma Severity. Frequencies and percentages were also calculated for subjective asthma severity. Similar to OAS, subjects were placed into either a low or high subjective asthma severity (SAS) group based on how they perceived their asthma severity. Those who rated their severity as mild were placed in the low SAS group and those who rated their severity as moderate or severe were placed in the high SAS group.

High and low OAS groups were compared on the mean total score and domain scores of both the QLI-RV and the AQLQ using independent t-tests with Levine's correction for inequality of variance. High and low SAS groups were then similarly compared on quality of life measures.

Gender and Asthma Severity

Gender and asthma severity was examined using an independent t-test for the ASRI and chi-square for the three subjective disease severity groups. Comparison of gender groups based on OAS and SAS were then examined using chi-square analysis.

## Ethical Considerations

Secondary analysis was done following ethical approval from the Health Research Ethics Administration Board (HREAB), a joint committee of the University of Alberta Health Sciences Faculties, the Capital Health Authority, and the Caritas Health Group. The original consent form, signed by all the subjects in the larger study, identified that data collected may be considered for secondary analysis with the appropriate ethical consent (Appendix A).

No contact was made with subjects from the original study. Confidentiality was maintained as only code numbers were utilized to identify data. There were no risks or

immediate benefits for the subjects in this study. Information may be published or presented at conferences. No information that identifies individual subjects will be reported. Individual questionnaires will be held by the primary researchers of the Asthma-Anxiety project, in accordance with University of Alberta policy.

# CHAPTER FOUR

## Findings

The results of the data analysis are presented in this chapter. First, the demographic and clinical characteristics of the sample are described. Second, each of the research questions are presented with their respective results. Other findings complete this chapter.

### Demographic Characteristics

Demographic characteristics are summarized in Table 1 for the total sample and for each gender group. Demographic characteristics included age, marital status, living arrangements, highest education level, annual combined income, and the presence of another illness. The total sample (N = 56) had a mean age of 47.46 years (SD = 14.87, range = 18 - 76). The majority of subjects (n = 47, 94 %) live with at least one other person (spouse, children, parents or siblings). The largest frequency response for level of education was a high school diploma (n = 26, 46 %). Sixty-one percent of the sample had a combined annual income of $50,000 or less (n = 34). Of the 25 (45%) subjects that identified having another illness, 12 had diseases related to the cardiac system (e.g. hypertension, congestive heart failure, mitral stenosis), four were diabetic, three had irritable bowel syndrome, and two had been previously diagnosed with breast cancer. The remaining four subjects had illnesses that included hypothyroidism (two), seizures and sleep disorder.

There were 34 females and 22 males in this study. The women in this sample had a mean age of 49.26 years (SD = 14.65, range 19 -76) and the men had a mean age of 44.68

years (SD = 15.11, range 18 - 70). Ten women in the sample were either single or widowed. Only two of the men identified themselves as single, and none were widowed. All of the individuals who identified themselves as living alone were female. The largest frequency response for living arrangements reported by women was 'living with their spouse' (n = 13, 38 %), while the majority of the men live with their spouse and children (n = 13, 59 %). More women in the group have completed post secondary education (n = 16, 47 %) compared to men (n = 7, 33 %). An annual combined income of $31,000 to $50,000 was the largest frequency response for women (n = 12, 36 %) and men (n = 7, 31 %). Half of the women (n = 17, 50 %) and over one third of the men (n = 8, 36 %) reported having another illness. Of the 17 women who identified other illness, seven had cardiac disease, three were diabetic, three had irritable bowel disease, two had a history of breast cancer, and two had hypothyroidism. The eight men who reported other illnesses, included five with cardiac disease, one was a diabetic, one had a seizure disorder, and one had a sleep disorder.

Clinical Characteristics

Clinical characteristics of the sample and for each gender group are displayed in Table 2. Clinical characteristics of the sample were described in terms of age diagnosed with asthma, number of years diagnosed, morning symptoms, night symptoms, mucus production, emergency room visits, hospitalizations and if the subjects had ever received cardiopulmonary resuscitation (CPR). The mean age of the sample when initially diagnosed with asthma was 32.73 (SD = 22.74, range = infancy to 70). Ten subjects (18%) had been diagnosed with asthma within the past year (M = 56, SD = 10.4, range =

36 - 64). In the past two weeks, the majority of the sample (n = 31, 55 %) had coughing, wheezing or chest tightness when waking up in the morning (a.m. symptoms), and they did not wake-up during the night to use their asthma medication (p.m. symptoms) (n = 48, 86%). The majority of the sample (n = 30, 54 %) also identified often having mucus or phlegm in their chest that needed to be coughed up (mucus production). The majority of the sample have gone to the emergency room (ER) at some point due to asthma symptoms (n = 35, 63 %), while only 22 (39 %) have ever been hospitalized for their asthma. Only one individual, a female, has had CPR and was intubated due to a severe asthma attack.

The mean age of asthma diagnosis for females was 36.88 (SD = 21.93, range = infancy - 64), and the mean age for men was approximately 10 years later (M = 26.32, SD = 22.96, range = infancy - 70). The eight females newly diagnosed in the past year had a mean age of 53.38 years (SD = 10.10, range 36 -64) while the two men newly diagnosed in the past year were aged 63 and 70 years (M = 66.50, SD = 4.95). Twenty-six women (77 %), diagnosed with asthma for greater than one year had a mean age of 31.81 years (SD = 22.19, range = infancy - 66). Twenty men (90 %), diagnosed with asthma for greater than one year had a mean age of 22.30 years (SD = 19.87, range = infancy - 58). More women (n = 17, 50 %) than men (n = 8, 36 %) were free of a.m. symptoms. Greater than 70 % of both genders were free of p.m. symptoms. A greater percentage of the men (n = 15, 68 %) compared to women (n = 19, 56 %) reported a frequent need to clear mucus from their chest. More women (n = 22, 65 %) than men (n = 9, 41 %) have been hospitalized for their asthma. No one in the group had been hospitalized in the past three months.

All 56 subjects in this sample were currently taking medications to control their asthma and were under the care of the same respiratory physician. All subjects were currently using a inhaled $beta_2$-agonist medication (e.g. salbutamol or salmeterol) to control symptoms. An inhaled steroid medication was taken everyday by 53 (95%) of the subjects. Three of the subjects were currently taking oral prednisone for their asthma (all female) and 5 subjects have been on oral prednisone in the past three months (3 males and 2 females). Thirty-four (61%) have taken oral steroids at some point during the course of their disease (22 women and 12 men).

No statistically significant differences were found between gender on age ($t = 1.130$, $p = .26$), age diagnosed with asthma ($t = 1.729$, $p = .09$) or number of years since diagnosed with asthma ($t = -1.377$, $p = .14$). Chi-square analysis was conducted on gender and the demographics: marital status ($\chi^2 = 3.74$, $df = 2$, $p = .15$); living arrangement ($\chi^2 = 7.45$, $df = 3$, $p = .06$), education ($\chi^2 = 1.79$, $df = 2$, $p = .41$); annual household income ($\chi^2 = 4.81$, $df = 4$, $p = .31$), and other illness ($\chi^2 = .742$, $df = 1$, $p = .42$). There were no statistical differences found.

Chi-square analysis was conducted on gender and the clinical characteristics: a.m. symptoms ($\chi^2 = 2.756$, $df = 4$, $p = .60$); p.m. symptoms ($\chi^2 = 5.690$, $df = 2$, $p = .06$); mucus production ($\chi^2 = 3.11$, $df = 1$, $p = .08$); ER visits ($\chi^2 = .18$, $df = 1$, $p = .67$); hospitalizations ($\chi^2 = .077$, $df = 1$, $p = .78$), and ever having CPR ($\chi^2 = .680$, $df = 1$, $p = .41$). There were no statistical differences found.

Quality of Life

Question 1: What is the quality of life of adults with asthma who have been referred to a pulmonary specialist in a Canadian out-patient setting?

Quality of Life Index - Respiratory Version (QLI-RV). The mean score, standard deviation, and range for the overall QLI-RV and domains are reported in Table 3. Two of the subjects did not complete the last page of the questionnaire and were therefore excluded from the analysis of this tool (n = 54). The domain with the highest mean score was family (M = 25.50, SD = 4.98). The domain with the lowest mean score was health and functioning (M = 22.89, SD = 4.32). The socioeconomic domain and the psychological/ spiritual domain had the widest range of scores from 7.2 to 30.0 and 7.6 to 30.0 respectively.

Asthma Quality of Life Questionnaire (AQLQ). The mean score, standard deviation, and range for the overall AQLQ and the individual domains are reported in Table 4. One subject missed a question and therefore was excluded from the analysis of the overall score and the environmental domain in which the item was missed (n = 55). The five most frequently identified individualized activities that were impaired because of asthma were: walking upstairs/ uphill (n = 19); mowing the lawn/gardening (n = 15); jogging/ exercising/ running (n = 14); going for a walk (n = 14) and doing housework (n = 14).

The highest mean score of the AQLQ was on the emotional domain (M = 5.92, SD = 1.11). The lowest mean score was on the activity domain (M = 5.49, SD = 1.19). The

symptom domain and the environmental domain had the widest range of scores at 2.08 to 7.00 and 2.50 to 7.00 respectively.

Gender Differences and Quality of Life

Question 2: Are there differences between women and men with asthma and quality of life?

Gender and QLI-RV. The overall QLI-RV and domain mean scores, standard deviations and ranges for gender are displayed in Table 5. The lowest mean score for both women (M = 22.9, SD = 4.62) and men (M = 22.74, SD =3.95) was on the health and functioning domain. The highest mean score for both women (M = 25.43, SD = 5.68) and men (M = 25.59, SD = 3.86) was on the family domain.

Mean scores were slightly higher for women than men for the overall score and all the domains except family. The range of scores for both the overall QLI-RV and domains was wider for women than for men. No statistically significant differences were found between gender and the overall QLI-RV mean score or domain scores (Table 5). The clinical differences between gender on the overall QLI-RV and domain mean scores were: overall score .24; socioeconomic domain .43; psychological/ spiritual domain .65; health and functioning domain .25 and family domain .16. All mean differences were less than two, indicating no clinically significant differences were found between gender and quality of life using the QLI-RV.

Gender and AQLQ. The overall AQLQ and domain mean scores, standard deviations and ranges for gender are displayed in Table 6. For women, the five activities most often identified as limited by their asthma were: doing housework (n = 13); walking

up stairs or up hills (n = 12); going for a walk (n = 12); jogging or exercising (n = 12) and gardening (n = 7). For men, the five activities were: mowing the lawn ( n = 7); jogging or exercising (n = 7); bicycling (n = 6) and doing home maintenance or playing sports (n = 4). The lowest mean score for both women (M = 5.56, SD = 1.17) and for men (M = 5.38, SD = 1.23) was on the activity domain. The highest mean score for both women (M = 5.96, SD = 1.03) and men (M = 5.85, SD = 1.25) was on the emotional domain.

All mean scores were slightly higher for women than for men. Ranges in scores were similar for men and women. No statistically significant differences were found between gender on the overall AQLQ or domain mean scores (Table 6). The clinical differences between gender on the overall AQLQ and the domain mean scores were: overall score .22, environmental domain .13, emotional domain .11, symptom domain .36, and activity domain .18. All mean differences were less than .5 indicating no clinically significant differences were found between gender on quality of life using the AQLQ.

Disease Severity

Objective Asthma Severity. The Asthma Severity Risk Index (ASRI) scores for the sample and by gender are reported in Table 7. Scores ranged from 1 to 17 with a mean of 2.84 (SD = 2.30). The two highest scores were individually, an 8 and a 17. Women had the three highest scores on the ASRI and reported a wider range of scores with a mean of 3.03 (SD = 2.82). The female subject who scored 17 was the only subject who was previously intubated for asthma. The range for men on the ASRI was 1 to 5 with a mean of 2.55 (SD = 1.10). No statistically significant differences were found between gender on the ASRI (t = .24, p = .45).

When ASRI scores were divided into low and high groups the majority of the sample (n = 36, 64%) were placed in the low OAS group (Table 9). When ASRI scores for gender were divided into low and high groups the majority of women (n = 21, 62 %) and men (n = 15, 68 %) had low OAS (Table 9). There were no statistically significant differences between gender on OAS ($\chi^2$ = .240, df = 1, p = .76).

Subjective Asthma Severity Results for the total sample, and by gender, on subjective asthma severity, are reported in Table 8. The largest number of subjects perceived their asthma as low (n = 27, 48 %). No statistically significant differences were found between gender on the item assessing perceived asthma severity ($\chi^2$ = .346, df = 2, p = .84).

When the three categories of subjective asthma severity were divided into two groups the majority of subjects (n = 29, 52 %) were placed in the high SAS group (Table 9). Half of the women (n = 17, 50 %) and more than one third of the men (n = 10, 46 %) were placed in the low SAS group. There were no statistically significant differences between gender and SAS ($\chi^2$ =.111, df = 1, p = .79). Given the lack of gender differences on quality of life and measures of asthma severity further analysis of relationships between asthma severity and quality of life were collapsed across gender.

Disease Severity and Quality of Life

Question 3: Do asthmatics with low objective asthma severity compared to those with high objective asthma severity differ in quality of life?

Objective Asthma Severity and QLI-RV. The overall QLI-RV and domain mean scores, standard deviations and ranges for low and high OAS are reported in Table 10.

The lowest mean score for low OAS (M = 23.35, SD = 4.59) and high OAS (M = 22.02, SD = 3.73) were found on the health and functioning domain. The highest mean scores were found on the family domain for low OAS (M = 24.99, SD = 5.47) and high OAS (M = 26.42, SD = 3.89).

The scores on the overall QLI-RV and for the socioeconomic, psychological/ spiritual and the family domain were slightly higher for those identified with high OAS than those with low OAS. There were no statistically significant differences between subjects grouped by OAS on the QLI-RV or any of the domains (Table 10).

The clinical difference between low and high OAS groups and the overall QLI-RV and domain mean scores were: overall score .24; for the socioeconomic domain .67; for the psychological/ spiritual domain .35; for the health and functioning domain 1.33 and for the family domain 1.43. There were no clinically significant differences between subjects grouped by OAS on quality of life. The correlation between the scores on the ASRI and the overall QLI-RV were not statistically significant ($r = -.16$, $p = .23$).

Objective Asthma Severity and AQLQ. The overall AQLQ and domain mean scores, standard deviations and ranges for subjects by OAS are reported in Table 11. The lowest mean score for low OAS (M = 5.65, SD = .94) and high OAS (M = 5.21, SD = 1.52) were on the activity domain. The highest scores were on the emotional domain for both low OAS (M = 6.18, SD = .94) and high OAS (M = 5.45, SD = 1.26).

The mean scores on the overall AQLQ and each of the four domains are higher for the low OAS compared to high OAS. There were no statistically significant differences between subjects grouped by OAS on the overall AQLQ score or the environmental,

symptom or activity domains (Table 11). Those categorized as low OAS (M = 6.18, SD = .94) had a statistically significant (p = .02) higher score on the emotional domain compared to subjects with high OAS (M = 5.45, SD = 1.26).

There were no clinically significant differences between low and high OAS and the domains environment (.44), emotional (.43) and activity (.44). There was a clinically significant difference between low and high OAS on the overall score of the AQLQ (.5) and on the emotional domain (.73). The correlation between the scores on the ASRI and the overall AQLQ were statistically significant (r = -.34, p = .01).

Question 4: Do asthmatics with low subjective asthma severity compared to those with high subjective asthma severity differ in quality of life?

Subjective Asthma Severity and QLI-RV. The overall QLI-RV and domain mean scores, standard deviations and ranges for subjects grouped in two for SAS are reported in Table 12. The lowest mean score for low SAS (M = 24.91, SD = 3.77) and high SAS (M = 21.00, SD = 3.99) were found on the health and functioning domain. The highest mean scores were found on the family domain for both low SAS (M = 25.62, SD = 4.03) and high SAS (M = 25.39, SD = 5.8).

The mean scores on the overall QLI-RV and the four domains are all higher for low SAS compared to high SAS. There were no statistically significant differences between subjects grouped by SAS in the QLI-RV socioeconomic, psychological/ spiritual or family domains. Those categorized as low SAS had a significantly higher score on the total score of the QLI-RV (p = .01) and the health and functioning domain (p = .0001) compared to those subjects with a high SAS.

The clinical difference between subjects, grouped by high and low SAS, on the overall QLI-RV and each domain were: overall, 2.59; socioeconomic domain, 1.98; psychological/ spiritual domain, 1.56; health and functioning domain, 3.9; and the family domain, .23. There were clinically significant differences for the overall QLI-RV and for the health and functioning domain.

Subjective Asthma Severity and AQLQ. The overall AQLQ and domain mean scores, standard deviations and ranges for low and high SAS are reported in Table 13. The lowest mean score for low SAS ($M$ = 5.87, $SD$ = .85) was on the environment domain. The lowest mean score for subjects grouped as high SAS was on the activity domain ($M$ = 5.00, $SD$ = 1.26). The highest mean scores were found on the emotional domain for both low SAS ($M$ = 6.31, $SD$ = .67) and high SAS ($M$ = 5.56, $SD$ = 1.3).

The mean scores on the AQLQ and the four domains are all higher for subjects with low SAS compared to high SAS. Statistically significant differences were found between subjects grouped by SAS on the overall AQLQ and all four domains (Table 13). The clinical differences between subjects grouped by high and low SAS for the overall AQLQ and domain mean scores were: overall score .88, for the environmental domain .61; for the emotional domain .75, for the symptom domain .90 and for the activity domain 1.02. There were clinically significant differences for the overall AQLQ and all four domains. Statistically significant correlation's were found between the subjective asthma severity categories and the overall QLI-RV ($r = .36$, $p = .007$, $p < .01$) and for the overall AQLQ ($r = .56$, $p = .0005$, $p < .01$).

## Other Findings

### Psychometric Properties of the QLI-RV and the AQLQ

Chronbach's alpha coefficients were calculated for the overall QLI-RV and each domain and are displayed in Table 3. Chronbach's alpha coefficients were calculated for the overall AQLQ and each domain and are displayed in Table 4.

### The Relationship between the QLI-RV and the AQLQ

The correlation between scores on the overall QLI-RV and on the overall AQLQ were statistically significant ($r = .36$, $p = .007$).

### The Relationship between the ASRI and Subjective Disease Severity

When divided into low and high OAS and SAS, 35 (63 %) of the subjects were grouped in the same category for objective and subjective asthma severity. Six (11 %) of the total sample, that were placed in the low SAS group, were placed in the high OAS group. This included 4 (12 %) women and 2 (32 %) men. Fifteen (27 %) of the total sample that were placed in the high SAS group were placed in the low OAS group. This included 8 (24 %) women and 7 (32 %) men. The correlation between the ASRI and the subjective asthma severity category were not statistically significant ($r = -.22$, $p = .107$).

Table 1

Demographic Characteristics of Sample

| Demographic Characteristics | Total Sample (n = 56) | Female (n = 34) | Male (n = 22) |
|---|---|---|---|
| marital status | | | |
| married/ common law | 44 (79 %) | 24 (71 %) | 20 (91 %) |
| single | 9 (16 %) | 7 (21 %) | 2 ( 9 %) |
| widowed | 3 ( 5 %) | 3 ( 9 %) | - |
| living arrangement | | | |
| alone | 7 (13 %) | 7 (21 %) | - |
| spouse | 19 (34 %) | 13 (38 %) | 6 (27 %) |
| spouse & children | 24 (43 %) | 11 (32 %) | 13 (59 %) |
| parents and siblings | 4 (17 %) | 2 ( 6 %) | 2 ( 9 %) |
| highest education level | | | |
| grades 7 - 11 | 7 (13 %) | 3 ( 9 %) | 4 (18 %) |
| high school diploma | 26 (46 %) | 15 (44 %) | 11 (50 %) |
| post secondary degree | 23 (41 %) | 16 (47 %) | 7 (33 %) |
| annual combined income | | | |
| < $30,000 | 15 (27 %) | 11 (32 %) | 4 (18 %) |
| $31,000 - $50,000 | 19 (34 %) | 12 (36 %) | 7 (31 %) |
| $51,000 - $70,000 | 9 (16 %) | 5 (15 %) | 4 (18 %) |
| $71,000 - $90,000 | 5 (14 %) | 1 ( 3 %) | 4 (18 %) |
| > $91,000 | 6 (11 %) | 3 ( 9 %) | 3 (13%) |
| other illnesses | | | |
| no | 30 (54 %) | 17 (50%) | 13 (59%) |
| yes | 25 (45 %) | 17 (50%) | 8 (36%) |

Numbers may not add to total due to missing or not applicable coding.
Percentages have been rounded to the nearest whole number.

Table 2

Clinical Characteristics of Sample

| Clinical Characteristics | Total Sample (n = 56) | Female (n = 34) | Male (n = 22) |
|---|---|---|---|
| number of yrs diagnosed | | | |
| 1 year or less | 10 (18 %) | 8 (24 %) | 2 ( 9 %) |
| greater than 1 year | 46 (82 %) | 26 (77 %) | 20 (90 %) |
| a.m. symptoms | | | |
| never | 25 (45 %) | 17 (50 %) | 8 (36 %) |
| 1 to 3 mornings | 12 (21 %) | 6 (18 %) | 6 (27 %) |
| 4 to 8 mornings | 11 (20 %) | 7 (21 %) | 4 (18 %) |
| 9 to 13 mornings | 1 ( 2 %) | - | 1 ( 5 %) |
| every morning | 7 (13 %) | 4 (12 %) | 3 (14 %) |
| p.m. symptoms | | | |
| never | 48 (86 %) | 32 (94 %) | 16 (73 %) |
| 1 to 3 nights | 6 (11 %) | 1 ( 3 %) | 5 (23 %) |
| 4 to 8 nights | 2 ( 4 %) | 1 ( 3 %) | 1 ( 5 %) |
| mucus production | | | |
| no | 26 (46 %) | 19 (56 %) | 7 (32 %) |
| yes | 30 (54 %) | 15 (44 %) | 15 (68 %) |
| ever gone to ER | | | |
| no | 21 (38 %) | 12 (35 %) | 9 (40 %) |
| yes | 35 (63 %) | 22 (65 %) | 13 (59 %) |
| ever been hospitalized | | | |
| no | 27 (48 %) | 17 (50 %) | 10 (46 %) |
| yes | 22 (39 %) | 22 (65 %) | 9 (41 %) |
| ever had CPR | | | |
| no | 49 (88%) | 29 (85 %) | 20 (91 %) |
| yes | 1 (2%) | 1 ( 3%) | - |

Numbers may not add to total due to missing or not applicable coding.
Percentages have been rounded to the nearest whole number

Table 3

Quality of Life Index - Respiratory Version

| QLI - RV Scale (N = 54) | M | SD | Range | Reliability Coefficient |
|---|---|---|---|---|
| Overall score | 23.59 | 3.73 | 10.4 - 28.9 | .90 |
| Socioeconomic | 24.12 | 4.51 | 7.2 - 30.0 | .82 |
| Psychological/ Spiritual | 24.24 | 4.07 | 7.6 - 30.0 | .87 |
| Health & Functioning | 22.89 | 4.32 | 13.6 - 29.4 | .90 |
| Family | 25.50 | 4.98 | 8.0 - 30.0 | .62 |

Scores range from 0 to 30 with a score of 30 indicating higher perceived quality of life.

Table 4

Asthma Quality of Life Questionnaire

| AQLQ Scale | N | M | SD | Range | Reliability Coefficient |
|---|---|---|---|---|---|
| Overall score | 55 | 5.63 | .99 | 3.00 - 6.94 | .92 |
| Environmental | 55 | 5.56 | 1.13 | 2.50 - 7.00 | .84 |
| Emotional | 56 | 5.92 | 1.11 | 2.60 - 7.00 | .71 |
| Symptom | 56 | 5.63 | 1.10 | 2.08 - 7.00 | .91 |
| Activity | 56 | 5.49 | 1.19 | 2.82 - 7.00 | .90 |

Results are expressed from 1 maximum impairment to 7 minimum impairment to quality of life.

Table 5

Comparison of Quality of Life Index - Respiratory Version Scores for Subjects Grouped by Gender.

| | female (n = 32) | | | male (n = 22) | | | |
|---|---|---|---|---|---|---|---|
| QLI - RV (N = 54) | M | SD | range | M | SD | range | p value |
| Overall score | 23.69 | 4.22 | 10.38 - 28.26 | 23.45 | 2.97 | 17.82 - 28.89 | .82 [a] |
| Socioeconomic | 24.29 | 5.22 | 7.21 - 30.00 | 23.86 | 3.31 | 16.50 - 29.64 | .73 [a] |
| Psychological/ Spiritual | 24.51 | 4.48 | 7.57 - 29.29 | 23.86 | 3.46 | 17.36 - 30.00 | .57 [a] |
| Health & Functioning | 22.99 | 4.62 | 13.63 - 29.43 | 22.74 | 3.95 | 14.65 - 28.13 | .84 [a] |
| Family | 25.43 | 5.68 | 8.00 - 30.00 | 25.59 | 3.86 | 15.00 - 30.00 | .91 [a] |

[a] equal variances

Table 6

Comparison of Asthma Quality of Life Questionnaire Scores for Subjects Grouped by Gender.

| | female (n = 34) | | | male | | | | |
|---|---|---|---|---|---|---|---|---|
| AQLQ Scale | M | SD | range | n | M | SD | range | p value |
| Overall score | 5.71 | .88 | 3.34 - 6.94 | 21 | 5.49 | 1.16 | 3.00 - 6.84 | .43 [a] |
| Environmental | 5.61 | 1.02 | 3.50 - 7.00 | 21 | 5.48 | 1.32 | 2.50 - 7.00 | .67 [a] |
| Emotional | 5.96 | 1.03 | 2.60 - 7.00 | 22 | 5.85 | 1.25 | 3.00 - 7.00 | .72 [a] |
| Symptom | 5.77 | 1.01 | 2.08 - 7.00 | 22 | 5.41 | 1.21 | 2.58 - 6.67 | .23 [a] |
| Activity | 5.56 | 1.17 | 2.91 - 7.00 | 22 | 5.38 | 1.23 | 2.82 - 7.00 | .58 [a] |

[a] equal variances

Table 7

Frequencies for Scores on the Asthma Severity Risk Index Total Scores for the Sample and Separated by Gender

| ASRI Score<br>Objective Asthma Severity | Total<br>(N = 56) | Female<br>(n = 34) | Male<br>(n = 22) |
|---|---|---|---|
| 1 | 4 ( 7 %) | 3 ( 9 %) | 1 ( 5 %) |
| 2 | 32 (57 %) | 18 (53 %) | 14 (64 %) |
| 3 | 11 (20 %) | 7 (21 %) | 4 (18 %) |
| 4 | 3 ( 5 %) | 3 ( 9 %) | - |
| 5 | 3 ( 5 %) | - | 3 (14 %) |
| 6 | 1 ( 2 %) | 1 ( 3 %) | - |
| 8 | 1 ( 2 %) | 1 ( 3 %) | - |
| 17 | 1 ( 2 %) | 1 ( 3 %) | - |

Table 8

Frequencies for Coding Categories on Subjective Asthma Severity for the Sample and Separated by Gender

| Subjective Asthma Severity | Sample<br>(N = 56) | Female<br>(n = 34) | Male<br>(n = 22) |
|---|---|---|---|
| mild | 27 (48 %) | 17 (50 %) | 10 (45 %) |
| moderate | 23 (41 %) | 14 (41 %) | 9 (41 %) |
| severe | 6 (11%) | 3 ( 9 %) | 3 (14 %) |

Table 9

Summary of Low and High Objective and Subjective Asthma Severity Groups for the Sample and Separated by Gender

| | Sample<br>(N = 56) | Female<br>(n = 34) | Male<br>(n = 22) |
|---|---|---|---|
| Objective Asthma Severity | | | |
| low | 36 (64 %) | 21 (62 %) | 15 (68 %) |
| high | 20 (36 %) | 13 (38 %) | 7 (32 %) |
| Subjective Asthma Severity | | | |
| low | 27 (48 %) | 17 (50 %) | 10 (46 %) |
| high | 29 (52 %) | 17 (50 %) | 12 (55 %) |

Table 10

Comparison of Quality of Life Index - Respiratory Version scores for Subjects Grouped by Objective Asthma Severity

| | low asthma severity (n = 35) | | | high asthma severity (n = 19) | | | |
|---|---|---|---|---|---|---|---|
| QLI - RV Scale | M | SD | range | M | SD | range | p value |
| Overall score | 23.68 | 4.16 | 10.38 - 28.89 | 23.44 | 2.87 | 17.58 - 28.26 | .82 [a] |
| Socioeconomic | 23.88 | 5.09 | 7.21 - 30.00 | 24.55 | 3.27 | 18.75 - 30.00 | .60 [a] |
| Psychological/ Spiritual | 24.12 | 4.59 | 7.57 - 30.00 | 24.47 | 2.99 | 18.64 - 29.14 | .77 [a] |
| Health & Functioning | 23.35 | 4.59 | 13.63 - 29.43 | 22.02 | 3.73 | 14.17 - 28.07 | .28 [a] |
| Family | 24.99 | 5.47 | 8.00 - 30.00 | 26.42 | 3.89 | 15.00 - 30.00 | .32 [a] |

[a] equal variances
* $p \leq .05$

Table 11

Comparison of Asthma Quality of Life Questionnaire scores for Subjects Grouped by Objective Asthma Severity

| | low asthma severity | | | | high asthma severity (n = 20) | | | |
|---|---|---|---|---|---|---|---|---|
| AQLQ Scale | n | M | SD | range | M | SD | range | p value |
| Overall score | 35 | 5.81 | .85 | 3.34 - 6.94 | 5.31 | 1.15 | 3.00 - 6.66 | .10 [b] |
| Environmental | 35 | 5.72 | .96 | 3.50 - 7.00 | 5.28 | 1.35 | 2.50 - 7.00 | .16 [a] |
| Emotional * † | 36 | 6.18 | .94 | 3.00 - 7.00 | 5.45 | 1.26 | 2.60 - 7.00 | .02 [a] |
| Symptom | 36 | 5.78 | 1.10 | 2.08 - 7.00 | 5.35 | 1.07 | 2.58 - 6.83 | .16 [a] |
| Activity | 36 | 5.65 | .94 | 3.09 - 7.00 | 5.21 | 1.52 | 2.82 - 7.00 | .25 [b] |

[a] equal variances
[b] unequal variances
* $p \leq .05$
† clinical significance (difference $\geq .5$)

Table 12

Comparison of Quality of Life Index - Respiratory Version Scores for Subjects Grouped by Subjective Asthma Severity

| | low asthma severity (n = 26) | | | high asthma severity (n = 28) | | | |
|---|---|---|---|---|---|---|---|
| QLI - RV Scale | M | SD | range | M | SD | range | p value |
| Overall score * † | 24.94 | 3.29 | 17.73 - 28.89 | 22.35 | 3.74 | 10.38 - 28.26 | .01[a] |
| Socioeconomic | 25.14 | 3.78 | 17.81 - 30.00 | 23.16 | 4.98 | 7.21 - 30.00 | .11[a] |
| Psychological/ Spiritual | 25.05 | 3.38 | 18.64 - 30.00 | 23.49 | 4.56 | 7.57 - 29.29 | .16[a] |
| Health & Functioning * † | 24.91 | 3.77 | 15.69 - 29.43 | 21.00 | 3.99 | 13.63 - 28.07 | .00[a] |
| Family | 25.62 | 4.03 | 16.50 - 30.00 | 25.39 | 5.80 | 8.0 - 30.00 | .87[a] |

[a] equal variances
* $p \leq .05$
† clinical significance (difference ≥ 2)

Table 13

Comparison of Asthma Quality of Life Questionnaire Scores for Subjects Grouped by Subjective Asthma Severity

| | low asthma severity (n = 27) | | | high asthma severity | | | | |
|---|---|---|---|---|---|---|---|---|
| AQLQ Scale | M | SD | range | n | M | SD | range | p value |
| Overall score * † | 6.07 | .58 | 4.78 - 6.94 | 28 | 5.19 | 1.11 | 3.00 - 6.53 | .00[b] |
| Environmental * † | 5.87 | .85 | 3.50 - 7.00 | 28 | 5.26 | 1.30 | 2.50 - 7.00 | .04[b] |
| Emotional * † | 6.31 | .67 | 4.40 - 7.00 | 29 | 5.56 | 1.31 | 2.60 - 7.00 | .01[b] |
| Symptom * † | 6.09 | .70 | 4.42 - 7.00 | 29 | 5.19 | 1.23 | 2.08 - 7.00 | .00[b] |
| Activity * † | 6.02 | .85 | 3.91 - 7.00 | 29 | 5.00 | 1.26 | 2.82 - 7.00 | .00[b] |

[b] unequal variances
* $p \leq .05$
† clinical significance (difference ≥ .5)

# CHAPTER FIVE

## Summary and Discussion

In this chapter, a summary of the significant findings in relation to each research question and other findings will be presented and compared to current literature. General limitations and recommendations for future research are addressed. Implications for nursing practice are found at the end of this chapter.

### Asthma and Quality of Life

Question 1: What is the quality of life of adults with asthma who have been referred to a pulmonary specialist in a Canadian out-patient setting?

The results of this study indicate that the quality of life of adult asthmatics in this sample was high. The mean score of the sample on the overall QLI-RV and the overall AQLQ were in the upper quartile of the possible range of scores for each instrument. These findings are congruent with reports of other studies using samples of chronically ill adults. Using adapted versions of the QLI, the quality of life of cardiac disease patients (Arteaga & Windle, 1995; Daumer & Miller, 1992), patients with hemodialysis (Ferrans & Powers, 1985), and liver transplant patients (Hicks, Larson & Ferrans, 1992) were relatively high. Similarly, high mean scores on the AQLQ have been reported in studies of asthmatics with mild to moderate disease severity (Gibson, Talbot & Toneguzzi, 1992; Juniper, Johnston, et al. 1995).

The rank order of the mean scores on the domains within each of the quality of life measures are also congruent with previous work. Given that the domains for each instrument differ, each instrument is discussed separately.

The highest mean score on the QLI-RV for this group of asthmatics was found on the family domain. This indicates that subjects in this study had high satisfaction and placed a high importance on issues related to the health and happiness of their family members and their relationship with their spouse or significant other. The highest mean score on the family domain was also reported in other studies involving chronic illness groups (Anderson & Ferrans, 1997; Arteaga & Windle, 1995; Dalmer & Miller, 1992; Hick, Larson & Ferrans, 1992).

The lowest mean score on the QLI-RV for this group of asthmatic subjects was on the health and functioning domain. Subjects had a lower satisfaction with areas they identified as important such as their own health, the ability to breath without shortness of breath and the amount of energy they have for everyday activities. This domain was also found to have the lowest domain score for other chronic diseases including chronic fatigue syndrome and cardiac disease (Anderson & Ferrans, 1997; Arteaga & Windle, 1995; Dalmer & Miller, 1995). Of the four domains, it seems reasonable that the health and functioning domain would have the lowest mean score. The health and functioning domain examines the potential direct physical effects of respiratory disease on the individual.

The highest mean score on the AQLQ for this sample was found on the emotional domain. This suggests that individuals in this study rarely reported feelings of concern or frustration about having asthma, fear of not having asthma medication readily available or becoming short of breath. Malo and colleagues (1993) reported similar results on the emotional domain with a group of occupational asthmatics. For moderate to severe

asthmatics, the emotional domain was reported as the lowest mean score indicating the most impairment to quality of life (Apter et al. 1996; Gibson, Talbot & Toneguzzi, 1995).

The lowest mean score on the AQLQ in this study was on the activity domain. The five activities individually identified by the sample and overall limitation of those activities, including avoiding situations due to cigarette smoke, dust, weather pollution, perfumes or strong smells had the most impairment to their quality of life. This is similar to findings of asthmatics with occupational asthma (Malo et al., 1993). In contrast, the activity domain for severe asthmatics in two other studies was reported as the highest mean scores ($\underline{M}$ = 4.39 and $\underline{M}$ = 4.81)(Apter et al. 1996; Gibson, Talbot & Toneguzzi, 1995). These scores were still lower than the activity domain for this sample ($\underline{M}$ = 5.49).

Considering the four domains of the AQLQ, it is expected that feeling frustrated and concerned about having asthma would be less with individuals with well controlled asthma. The emotional domain focuses on feelings and fears about asthma and the availability of medications. The specific symptoms of asthma including chest heaviness, wheezing, difficulty breathing and not getting a good night's sleep are the focus in the symptom domain. It would not be expected that individuals with well controlled asthma would frequently experience these symptoms.

It is likely that relatively high scores on the quality of life measures indicate that these patients have adapted to their chronic illness. Alternatively, high quality of life scores may reflect the nature of the sample. Overall, the clinical characteristics of the sample are congruent with a well controlled mild category of asthma. To bear this out, further research is needed to compare the quality of life of newly diagnosed asthmatics

with those with similar disease severity and who have had asthma for longer periods. Longitudinal or cross-sectional studies with patients grouped by similar disease severity are needed to further examine the rank order of domains of quality of life. Closer examination of the domains could provide further information regarding the process of adaptation and how health care workers could assist in this process.

Gender and Quality of Life

Question 2: Are there differences between women and men with asthma and quality of life?

The results of this study failed to reject the null hypothesis. There were no clinical or statistical differences between gender on the overall or the domain scores on the QLI-RV or on the AQLQ. These findings were supported by the similar results using two different quality of life tools. Other researchers report similar findings using the generic QLI (Anderson & Ferrans, 1997; Hicks, Larsen and Ferrans, 1992) and the AQLQ (Malo et al., 1993). There were no differences between gender on the ranked order of the lowest and highest domain on the QLI-RV or the AQLQ.

It may be that gender differences on quality of life do not exist. The findings in this study and other reports support this conclusion. However, it may be that differences exist, but to date, differences have not been captured for two important methodological reasons. First, in this study and others, non-random sample techniques and small sample sizes were used (Anderson & Ferrans, 1997; Hicks, Larsen and Ferrans, 1992; Malo et al. 1993). Secondly, the instruments may be gender neutral.

To establish whether or not gender differences exist further research is warranted. Replication, using a more representative sample, is needed to reduce the possibility of type two error. In depth examination of the meaning of quality of life from the perspective of men and women using qualitative methods may help to determine if the current tools are gender neutral.

Objective Asthma Severity and Quality of Life

Question 3: Do asthmatics with low objective asthma severity compared to those with high objective asthma severity differ in quality of life?

The results of this study fail to reject the null hypothesis. The mean difference between low and high OAS on the overall QLI-RV and on the overall AQLQ were not statistically significant. There were no clinically or statistically significant differences between low and high OAS on any of the domains of the QLI-RV. The mean difference on the overall AQLQ was not statistically significant, but was clinically significant. The mean difference between low and high OAS on the emotional domain was clinically and statistically significant. Individuals with higher OAS had more feelings of concern about having asthma, getting out of breath, and the availability of their medications compared to those with low OAS.

The level of asthma severity has been shown to be negatively associated with quality of life using the AQLQ (Juniper, Guyatt, Ferrie & Griffith, 1993; Juniper, Johnson et al. 1995; Rowe and Oxman, 1993). The lack of statistical significance between low and high OAS on total scores and on the majority of domains in both instruments may be due to the lack of variance on ASRI scores. The scores on the ASRI were skewed.

Eighty-four percent of the sample had a score of three or less on the ASRI which has a potential score range of zero to 25. It may also be that the ASRI lacks precision in detecting differences in asthma severity. The significant differences between OAS on the emotional domain may be a spurious finding. Alternatively, of all of the domains used, the emotional domain may be more sensitive to differences on OAS.

Further research, with a larger sample of individuals representing a wider range of scores on the ASRI and using another objective asthma severity measure (e.g. $FEV_1$), may clarify the relationship between OAS and quality of life. To lend more precision to the ASRI, it could be further developed to include a disease history, dosage and frequency of various medications taken by the individual. These additions may be important factors related to disease severity that have implications when measuring quality of life. Cross-sectional or longitudinal studies using a more representative sample of asthmatics may clarify the relationship between the domains and measures of quality of life and OAS. Greater understanding of the relationships between the various domains and OAS may enlighten interventions related to asthma care.

Subjective Asthma Severity and Quality of Life

Question 4: Do asthmatics with low subjective asthma severity compared to those with high subjective asthma severity differ in quality of life?

The results of this study reject the null hypothesis. The mean difference between low and high SAS on the overall QLI-RV and on the health and functioning domain were clinically and statistically significant. The mean difference between low and high SAS on the overall AQLQ and on all domains were clinically and statistically significant.

Other published research studies comparing subjective disease severity and the quality of life of asthmatics could not be found. However, Rowe and Oxman (1993) found changes in the AQLQ total score was highly correlated with subject's assessment of physical changes one week following a visit to the ER ($r = .78$).

The significant differences between low and high SAS on both quality of life measures suggests that an individual's perception of their disease is positively associated with quality of life. Caution is advised in generalizing this finding beyond this sample due to two methodological issues. First, the non-random sample size limits generalizability. Secondly, the item used to measure subjective severity is of concern. The fixed options for responses of the item measuring subjective asthma severity are somewhat ambiguous. Subjects were asked "How would you rate the overall severity of your asthma condition?" Three fixed-alternative options were: severe (seriously interferes with normal lifestyle), moderate (occasionally interferes with normal lifestyle), and mild (infrequently interferes with normal lifestyle). The distinction between these definitions, particularly between mild and moderate are not clear. Furthermore, the definitions confine the subjects to considering the severity of their condition in terms of the impact on lifestyle.

Replication of this study with a larger, randomized sample is needed to corroborate these results. The single item would be clearer if the definitions were not provided and subjects were simply asked to choose between the three categories, mild moderate or severe. Further research on the relationships between the various domains and SAS may provide insight into interventions to increase the quality of life of asthmatics.

## Other Findings

### Psychometric Properties of the QLI-RV and the AQLQ

Internal validity was established for the overall QLI-RV and the overall AQLQ using Nunnally's (1978) criterion of .70. These results corroborate previous findings of high internal consistency for the QLI-RV (Anderson & Ferrans, 1997; Ferrans & Powers, 1985, 1992; Hicks, Larson & Ferrans, 1992) and for the AQLQ (Malo et al., 1993; Rowe & Oxman, 1993). The family domain of the QLI-RV had an alpha of .62 which was lower than alpha's reported for the family domain in the previously mentioned studies, but similar to a result of .66 for the QLI-cancer version (Belec, 1992).

The low alpha level for the family domain of the QLI-RV may suggest that there were an inadequate number of items in the domain to relate this item to measuring quality of life in the overall instrument (Brink & Wood, 1989). Beyond this study, the QLI-RV has not been utilized therefore, further research using this instrument is warranted.

### The Relationship between the QLI-RV and the AQLQ

There was a weak relationship between the overall QLI-RV and the overall AQLQ. This adds evidence of convergent validity to the QLI-RV. This relationship is likely due to similarities between the health and functioning domain of the QLI-RV and the activity domain of the AQLQ.

The QLI-RV is based on a person's sense of well-being with important areas of their life (Ferrans & Powers, 1985), whereas, the AQLQ is specifically focused on how patients feel about and function with asthma (Juniper, 1995). These two tools have a different focus but both provide information on the quality of life of individuals with

asthma. Further research using the QLI-RV to compare subjects with asthma and other respiratory diseases (e.g. chronic obstructive pulmonary disease, cystic fibrosis, lung cancer) may provide increased knowledge about asthma and quality of life. Individual domains in each tool can also provide more information on asthma and quality of life.

The Relationship between ASRI and Subjective Asthma Severity

There was no relationship between the ASRI and subjective disease severity. When individual assignments to objective and subjective categories were compared, in the majority of cases the assignments were the same. However, there was a percentage of subjects for whom the objective and subjective categories differed. Caution is advised in terms of generalizing these findings, given the limitations of the measures as previously mentioned. Never the less these findings are similar to those of previous work. Nguyen, Wilson and German (1996) found a significant proportion of asthmatics accurately estimated their disease severity (54 %) while 20 % underestimated their disease severity, and 27 % overestimate their disease severity.

Individuals that underestimate their asthma severity may be at risk of increased mortality and those that overestimate their severity could be limiting their activity unnecessarily (Nguyen, Wilson & German, 1996). Further exploration of the relationship between objective and subjective asthma severity is warranted.

## Implications for Nursing Research and Practice

Further nursing research is required to clarify the relationship between objective and subjective disease severity, gender and quality of life. Ideally, a larger sample, with random sampling techniques would enhance the ability to generalize these study findings

to a broader population. Although it may not be possible to obtain a probability sample, as the actual population of adult asthmatics is unknown, future studies could employ quota sampling techniques. Objective criteria such as $FEV_1$ measures could be used to divide asthmatics into different severity groups.

It is important for nurse researchers to realize that the concept of quality of life is subjective and multidimensional. How best to capture the subjective nature of quality of life has yet to be determined. The factors that contribute to the asthmatics quality of life are complex and as of yet not well understood. The two disease specific tools used in this study are complex and focus on different aspects of quality of life. One tool has not been found that captures all the important aspects of quality of life for an individual. Perhaps a single broad question measuring quality of life would be appropriate. What contributes to quality of life could then be explored on an individual basis. Qualitative methodologies may also help to capture gender differences and the subjective nature of quality of life.

It is equally important for nurses working at the bedside to recognize the need to assess an individual's quality of life. Nursing assessments should lead to the provision of appropriate and effective nursing interventions. Once the nurse has assessed the quality of life of an individual, exploration of what contributes and detracts from a higher quality of life can be explored. Nurses can then be involved in providing interventions that could help the individual adapt to their disease and potentially improve their quality of life.

Patient's perceptions of their asthma severity may play an important role in contributing to their quality of life. There is evidence to suggest that some patients may perceive their asthma to be either more or less severe than it is by objective measures of

asthma severity. These perceptions have the potential to affect not only physical functioning but also psychological aspects of quality of life. Nursing assessments of asthmatic patients should include information on the individual's perception of their asthma severity. It may be that in cases where there is an incongruency it is a result of misconceptions about asthma. Education, including the appropriate use of medications, lifestyle choices and awareness of symptoms can contribute to a better understanding of asthma. Accurate knowledge regarding the positive outcomes related to asthma may have an influence on an individual's quality of life.

The implications for nursing, described in the above paragraphs, emerged from a study of the quality of life of adult asthmatics and disease severity that was conducted during 1997 in Alberta. The improvement or deterioration in the quality of life of an individual has become an important outcome measure to consider when planning nursing research and patient care interventions.

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# Appendix A

## CONSENT FORM

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Edmonton, T6G 2G3

**Purpose of the study**

Some patients with asthma experience anxiety with their asthma symptoms. This is to be expected. Asthma symptoms can be frightening. For some people with asthma, anxiety can be problematic. The nurse researchers want to interview adults who have asthma. They will use the interviews to increase our understanding about normal and problematic anxiety in asthma patients. The results of this study will help us to improve our care of patients with asthma in the future.

**Procedures**

Being in this study involves about four hours of your time. You will:

(1) meet with a nurse researcher in an office in the Faculty of Nursing.

(2) the nurse will ask you questions about the following:
- Some personal information (example: age, marital status)
- your asthma symptoms.
- your asthma management
- the impact of asthma on your life
- your anxiety symptoms

(3) the nurse will ask you to complete five questionnaires related to asthma and anxiety symptoms.

**Voluntary Participation**

Being in this study is your choice. After the study is done, you will be given the chance to attend a small group patient-education program. We will base this patient-education program on the results of the study. We will design the patient-education program with the intent of helping you to better manage your symptoms.

Being in the study is risk free. If you need medical attention during the assessment, we will refer you to suitable medical services right away.

Even if you enter the study, you may refuse to answer any questions during the study. You may withdraw from the study anytime. You can withdraw by telling the nurse researchers of your wish (492-0784). Taking part in this study or dropping out will not affect your care.

We will keep information collected during the study in a locked cabinet for seven years. After seven years, the researcher will destroy this information. Only code number will appear on any form or question sheets. We will store consent forms separate from the questionnaires. We will keep all consents for at least five years.

We may use information collected in this study in future studies. We will get permission from the appropriate Ethics Review Committee before using it in other studies.

We may report findings from this study in published material or conferences. We will not use any information that may identify you in any report.

If you have any questions about this study later, you can contact the researchers by telephone (492-0784).

Consent

I agree to take part in this study. I understand the nurse-researchers will tell me the results of my interview assessment. I grant permission for the researchers to send an assessment report to Dr. _____(Specialist) and to Dr. _____ (General Practitioner), if necessary. I will receive a copy of this report.

The researchers have described the study to me. The researchers answered all my questions about the study to my satisfaction. I can contact the researchers (492-0784) if I have more questions. I understand the possible benefits and risks of joining the study. I understand the researchers will keep personal information about me confidential. I understand that I am free to drop out of the study whenever I wish without affecting my health care.

The researcher has given me a copy of this form to keep.

Signature _____Date_____ Signature: _____ Date_____
(Volunteer) (Researcher)

**I also give permission for Dr. Ross to contact me in the future to be part of another nursing study. Yes ____ No ____**

Signature _____Date_____ Signature: _____ Date_____
(Volunteer) (Researcher)

## Appendix B

## Demographic Form

Date: _____ Time Start:_____Time Complete: _____

(2) Subject's Age: _____

(3) Gender: 1 = female 2 = male

(4) Education (What is your highest level of education?)

1 grades 1 - 6
2 grades 7 - 11
3 granted high school diploma/ certificate or equivalent
4 completed some post secondary education courses toward degree/ certificate (technical, college, university)
5 granted post secondary (technical, college, university) degree/ certificate
6 completed some graduate courses Masters/ Doctorate

(5) What is your annual combined household income per annum (approximately)?

1 < $30,000
2 $ 31,000 - 40,000
3 $ 41,000 - 50,000
4 $ 51,000 - 60,000
5 $ 61,000 - 70,000
6 $ 71,000 - 80,000
7 $ 81,000 - 90,000
8 > $ 91, 000

(6) Marital Status

1 Married
2 Single
3 Widow
4 Divorce
5 Common Law
6 Other

(7) Who shares your living space (age of anyone described): _____

---

(8) Asthma Severity Index Score _____

## Appendix C

# Asthma Questionnaire - Select Questions

1. How old were you when your asthma was diagnosed by a doctor?

2. Do you have any other illnesses ?

   ☐ No (Go to question 3)
   ☐ Yes (Please specify other illnesses)

_____

_____

_____

3. How would you rate the overall severity of your asthma condition?

   ☐ Severe: seriously interferes with normal lifestyle
   ☐ Moderate: occasionally interferes with normal lifestyle
   ☐ Mild: interferes infrequently with normal lifestyle

4. In the last 12 months, did you need to go to the emergency room for your asthma?

   ☐ No
   ☐ Yes How many times? An estimate is OK _____

5. In the last 12 months did you need to increase your medication(s) to control your asthma?

   ☐ No
   ☐ Yes How many times? An estimate is OK _____

6. How often in the past two weeks did you wake up in the morning with asthma symptoms such as coughing, wheezing or chest tightness?

   ☐ Not at all
   ☐ 1 to 3 mornings
   ☐ 4 to 8 mornings
   ☐ 9 to 13 mornings
   ☐ Every morning

7. How often in the past two weeks did you wake up at night to use your asthma medications?

- ☐ Not at all
- ☐ 1 to 3 nights
- ☐ 4 to 8 nights
- ☐ 9 to 13 nights
- ☐ Every night

8. Do you often feel that you have mucus or phlegm in your chest that needs to be coughed out?

- ☐ No
- ☐ Yes

9. Have you ever needed to take steroids such as Prednisone, Deltasone or Cortisone by mouth or injection? *This does not refer to inhaled steroids such as Beclovent or steroid creams.*

- ☐ No
- ☐ Yes

10. In the last 3 months, did you need a "short burst" or "short course" of steroids (less than 2 weeks) or if you are on regular steroid pills, did you need a dose increase?

- ☐ No
- ☐ Yes How often? ____Are you currently taking steroid pills? ☐ No ☐Yes

11. Are your asthma medications or treatments prescribed by any of the following. Check all that apply.

- ☐ Acupuncturist
- ☐ Allergist
- ☐ Chiropractor
- ☐ Emergency room doctor
- ☐ Family doctor
- ☐ Herbalist
- ☐ Naturopath
- ☐ Respiratory doctor
- ☐ Other _____

12. Have you ever needed to go to an emergency room to get help for your asthma?

- ☐ No
- ☐ Yes

13. Were you ever admitted to the hospital for a day or more for your asthma?

- ☐ No
- ☐ Yes how many times in the past year? _____
  were you admitted in the past 3 months? _____

14. Have you ever had artificial resuscitation such as mouth to mouth, cardiac massage (CPR) or insertion of a tube into the airway (intubation) for your asthma?

- ☐ No
- ☐ Yes

15. Please tell me which asthma medications or treatments you used in the last 2 weeks. How often did you take the medication and what is the specific name of the medication?

| **List of Medications and Treatments** | **How often taken in the last 2 weeks?** | **Name of Medication** Please specify name & dose ordered |
|---|---|---|
| **No Medication** | | |
| | ☐ no medication taken in last 2 weeks | |
| **Symptom Relief Medications** | | |
| ***beta2 bronchodilators:*** Alupent, Berotec, Bricanyl, Bronkaid, Medihaler, Nephron, Pro-Air, Salbutamol, Ventolin | ☐ none<br>☐ occasionally<br>☐ every day | |
| ***ipratopium bronchodilator: (anticholinergic)*** Atropine | ☐ none<br>☐ occasionally<br>☐ every day | |
| ***bronchodilator tablets containing theophylline:*** Choledyl, Phyllocontin, Quibron, Somophylline, Tedral, TheoDur, Theolair, Uniphyl | ☐ none<br>☐ occasionally<br>☐ every day | |
| | | |

| List of Medications and Treatments | How often taken in the last 2 weeks? | Name of Medication Please specify name & dose ordered |
|---|---|---|
| **Preventative Medication** | | |
| ***inhaled steroids:*** Azmacort, Becloforte, Beclovent, Bronalide, Pulmicort, Vanceril | ☐ none<br>☐ occasionally<br>☐ every day | |
| ***steroid tablets:*** Cortisone, Deltasone, Prednisone | ☐ none<br>☐ occasionally<br>☐ every day | |
| ***inhaled cromoglycate/ nedocromil:*** Intal, Tilade | ☐ none<br>☐ occasionally<br>☐ every day | |
| Zaditen tablets | ☐ none<br>☐ occasionally<br>☐ every day | |
| allergy shots | ☐ none<br>☐ occasionally<br>☐ every day | |
| herbal remedies | ☐ none<br>☐ occasionally<br>☐ every day | |
| naturopath remedies | ☐ none<br>☐ occasionally<br>☐ every day | |
| other | ☐ none<br>☐ occasionally<br>☐ every day | |

## Appendix D

Quality of Life Index - Respiratory Version

Permission to use the Quality of Life Index - Respiratory Version was granted to Kathy Van Veen by Dr. Carol Estwing Ferrans.

Dr. Carol Estwing Ferrans
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## Ferrans and Powers
## QUALITY OF LIFE INDEX©
## RESPIRATORY VERSION

PART 1. For each of the following, please choose the answer that best describes how **satisfied** you are with that area of your life. Please mark your answer by circling the number. There are no right or wrong answers.

| HOW SATISFIED ARE YOU WITH: | Very Dissatisfied | Moderately Dissatisfied | Slightly Dissatisfied | Slightly Satisfied | Moderately Satisfied | Very Satisfied |
|---|---|---|---|---|---|---|
| 1. Your health? | 1 | 2 | 3 | 4 | 5 | 6 |
| 2. The health care you are receiving? | 1 | 2 | 3 | 4 | 5 | 6 |
| 3. The amount of pain that you have? | 1 | 2 | 3 | 4 | 5 | 6 |
| 4. Your ability to breathe without shortness of breath? | 1 | 2 | 3 | 4 | 5 | 6 |
| 5. The amount of energy you have for everyday activities? | 1 | 2 | 3 | 4 | 5 | 6 |
| 6. Your physical independence? | 1 | 2 | 3 | 4 | 5 | 6 |
| 7. The amount of control you have over your life? | 1 | 2 | 3 | 4 | 5 | 6 |
| 8. Your potential to live a long time? | 1 | 2 | 3 | 4 | 5 | 6 |
| 9. Your family's health? | 1 | 2 | 3 | 4 | 5 | 6 |
| 10. Your children? | 1 | 2 | 3 | 4 | 5 | 6 |
| 11. Your family's happiness? | 1 | 2 | 3 | 4 | 5 | 6 |
| 12. Your relationship with your spouse/significant other? | 1 | 2 | 3 | 4 | 5 | 6 |
| 13. Your sex life? | 1 | 2 | 3 | 4 | 5 | 6 |
| 14. Your friends? | 1 | 2 | 3 | 4 | 5 | 6 |
| 15. The emotional support you get from others? | 1 | 2 | 3 | 4 | 5 | 6 |

(Please Go To Next Page)

| HOW SATISFIED ARE YOU WITH: | Very Dissatisfied | Moderately Dissatisfied | Slightly Dissatisfied | Slightly Satisfied | Moderately Satisfied | Very Satisfied |
|---|---|---|---|---|---|---|
| 16. Your ability to meet family responsibilities? | 1 | 2 | 3 | 4 | 5 | 6 |
| 17. Your usefulness to others? | 1 | 2 | 3 | 4 | 5 | 6 |
| 18. The amount of stress or worries in your life? | 1 | 2 | 3 | 4 | 5 | 6 |
| 19. Your home? | 1 | 2 | 3 | 4 | 5 | 6 |
| 20. Your neighborhood? | 1 | 2 | 3 | 4 | 5 | 6 |
| 21. Your standard of living? | 1 | 2 | 3 | 4 | 5 | 6 |
| 22. Your job (if employed)? | 1 | 2 | 3 | 4 | 5 | 6 |
| 23. Not having a job (if unemployed, retired or disabled)? | 1 | 2 | 3 | 4 | 5 | 6 |
| 24. Your education? | 1 | 2 | 3 | 4 | 5 | 6 |
| 25. Your financial independence? | 1 | 2 | 3 | 4 | 5 | 6 |
| 26. Your leisure time activities? | 1 | 2 | 3 | 4 | 5 | 6 |
| 27. Your ability to travel on vacations? | 1 | 2 | 3 | 4 | 5 | 6 |
| 28. Your potential for a happy old age/retirement? | 1 | 2 | 3 | 4 | 5 | 6 |
| 29. Your peace of mind? | 1 | 2 | 3 | 4 | 5 | 6 |
| 30. Your faith in God? | 1 | 2 | 3 | 4 | 5 | 6 |
| 31. Your achievement of personal goals? | 1 | 2 | 3 | 4 | 5 | 6 |
| 32. Your happiness in general? | 1 | 2 | 3 | 4 | 5 | 6 |
| 33. Your life in general? | 1 | 2 | 3 | 4 | 5 | 6 |
| 34. Your personal appearance? | 1 | 2 | 3 | 4 | 5 | 6 |
| 35. Yourself in general? | 1 | 2 | 3 | 4 | 5 | 6 |

(Please Go To Next Page)

PART 2. For each of the following, please choose the answer that best describes how **important** that area of your life is to you. Please mark your answer by circling the number. There are no right or wrong answers.

| HOW IMPORTANT TO YOU IS: | Very Unimportant | Moderately Unimportant | Slightly Unimportant | Slightly Important | Moderately Important | Very Important |
|---|---|---|---|---|---|---|
| 1. Your health? | 1 | 2 | 3 | 4 | 5 | 6 |
| 2. Health care? | 1 | 2 | 3 | 4 | 5 | 6 |
| 3. Being completely free of pain? | 1 | 2 | 3 | 4 | 5 | 6 |
| 4. Being able to breathe without shortness of breath? | 1 | 2 | 3 | 4 | 5 | 6 |
| 5. Having enough energy for everyday activities? | 1 | 2 | 3 | 4 | 5 | 6 |
| 6. Your physical independence? | 1 | 2 | 3 | 4 | 5 | 6 |
| 7. Having control over your life? | 1 | 2 | 3 | 4 | 5 | 6 |
| 8. Living a long time? | 1 | 2 | 3 | 4 | 5 | 6 |
| 9. Your family's health? | 1 | 2 | 3 | 4 | 5 | 6 |
| 10. Your children? | 1 | 2 | 3 | 4 | 5 | 6 |
| 11. Your family's happiness? | 1 | 2 | 3 | 4 | 5 | 6 |
| 12. Your relationship with your spouse/significant other? | 1 | 2 | 3 | 4 | 5 | 6 |
| 13. Your sex life? | 1 | 2 | 3 | 4 | 5 | 6 |
| 14. Your friends? | 1 | 2 | 3 | 4 | 5 | 6 |
| 15. Emotional support? | 1 | 2 | 3 | 4 | 5 | 6 |
| 16. Meeting family responsibilities? | 1 | 2 | 3 | 4 | 5 | 6 |

(Please Go To Next Page)

| HOW IMPORTANT TO YOU IS: | Very Unimportant | Moderately Unimportant | Slightly Unimportant | Slightly Important | Moderately Important | Very Important |
|---|---|---|---|---|---|---|
| 17. Being useful to others? | 1 | 2 | 3 | 4 | 5 | 6 |
| 18. Having a reasonable amount of stress or worries? | 1 | 2 | 3 | 4 | 5 | 6 |
| 19. Your home? | 1 | 2 | 3 | 4 | 5 | 6 |
| 20. Your neighborhood? | 1 | 2 | 3 | 4 | 5 | 6 |
| 21. A good standard of living? | 1 | 2 | 3 | 4 | 5 | 6 |
| 22. Your job (if employed)? | 1 | 2 | 3 | 4 | 5 | 6 |
| 23. To have a job (if unemployed, retired, or disabled)? | 1 | 2 | 3 | 4 | 5 | 6 |
| 24. Your education? | 1 | 2 | 3 | 4 | 5 | 6 |
| 25. Your financial independence? | 1 | 2 | 3 | 4 | 5 | 6 |
| 26. Leisure time activities? | 1 | 2 | 3 | 4 | 5 | 6 |
| 27. The ability to travel on vacations? | 1 | 2 | 3 | 4 | 5 | 6 |
| 28. Having a happy old age/retirement? | 1 | 2 | 3 | 4 | 5 | 6 |
| 29. Peace of mind? | 1 | 2 | 3 | 4 | 5 | 6 |
| 30. Your faith in God? | 1 | 2 | 3 | 4 | 5 | 6 |
| 31. Achieving your personal goals? | 1 | 2 | 3 | 4 | 5 | 6 |
| 32. Happiness? | 1 | 2 | 3 | 4 | 5 | 6 |
| 33. Being satisfied with life? | 1 | 2 | 3 | 4 | 5 | 6 |
| 34. Your personal appearance? | 1 | 2 | 3 | 4 | 5 | 6 |
| 35. Are you to yourself? | 1 | 2 | 3 | 4 | 5 | 6 |

Appendix E

# ASTHMA QUALITY OF LIFE QUESTIONNAIRE

## SELF-ADMINISTERED

## McMASTER UNIVERSITY

## HAMILTON, ONTARIO

## CANADA

For further information:

Elizabeth Juniper, MCSP, MSc
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FEBRUARY 1995

ASTHMA QUALITY OF LIFE QUESTIONNAIRE PATIENT ID_____

SELF-ADMINISTERED DATE_____



## ACTIVITIES

We should like you to think of ways in which asthma limits your life. We are particularly interested in activities that you still do, but which are limited by your asthma. You may be limited because you do these activities less often, or less well, or because they are less enjoyable. These should be activities which you do frequently and which are important in your day-to-day life. These should also be activities that you intend to do regularly throughout the study.

Please think of all the activities which you have done during the last 2 weeks, in which you were limited as a result of your asthma.

Here is a list of activities in which some people with asthma are limited. We hope that this will help you to identify the 5 most important activities in which you have been limited by your asthma during the last 2 weeks.

| | |
|---|---|
| 1. BICYCLING | 15. SHOVELLING SNOW |
| 2. CLEANING SNOW OFF YOUR CAR | 16. SINGING |
| 3. DANCING | 17. DOING REGULAR SOCIAL ACTIVITIES |
| 4. DOING HOME MAINTENANCE | 18. HAVING SEXUAL INTERCOURSE |
| 5. DOING YOUR HOUSEWORK | 19. SLEEPING |
| 6. GARDENING | 20. TALKING |
| 7. HURRYING | 21. RUNNING UPSTAIRS OR UPHILL |
| 8. JOGGING OR EXERCISING OR RUNNING | 22. VACUUMING |
| 9. LAUGHING | 23. VISITING FRIENDS OR RELATIVES |
| 10. MOPPING OR SCRUBBING THE FLOOR | 24. GOING FOR A WALK |
| 11. MOWING THE LAWN | 25. WALKING UPSTAIRS OR UPHILL |
| 12. PLAYING WITH PETS | 26. WOODWORK OR CARPENTRY |
| 13. PLAYING WITH CHILDREN OR GRANDCHILDREN | 27. CARRYING OUT YOUR ACTIVITIES AT WORK |
| 14. PLAYING SPORTS | |

ASTHMA QUALITY OF LIFE QUESTIONNAIRE PATIENT ID_____

SELF-ADMINISTERED DATE_____



Please write your 5 most important activities on the lines below and then tell us how much you have been limited by your asthma in each activity during the last 2 weeks by checking the box with the appropriate rating.

HOW LIMITED HAVE YOU BEEN DURING THE LAST 2 WEEKS IN THESE ACTIVITIES?

| | Totally Limited | Extremely Limited | Very Limited | Moderate Limitation | Some Limitation | A Little Limitation | Not at all Limited | Activity Not done |
|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 9 |
| 1._____ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 2._____ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 3._____ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 4._____ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 5._____ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

HOW MUCH DISCOMFORT OR DISTRESS HAVE YOU FELT OVER THE LAST 2 WEEKS?

| | A Very Great Deal | A Great Deal | A Good Deal | Moderate Amount | Some | Very Little | None |
|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 6. How much discomfort or distress have you felt over the last 2 weeks as a result of CHEST TIGHTNESS? | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

ASTHMA QUALITY OF LIFE QUESTIONNAIRE PATIENT ID_____

SELF-ADMINISTERED DATE_____



IN GENERAL, HOW MUCH OF THE TIME DURING THE LAST 2 WEEKS DID YOU:

| | All of the Time | Most of the Time | A Good Bit of the Time | Some of the Time | A Little of the Time | Hardly Any of the Time | None of the Time |
|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 7. Feel CONCERNED ABOUT HAVING ASTHMA? | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 8. Feel SHORT OF BREATH as a result of your asthma? | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 9. Experience asthma symptoms as a RESULT OF BEING EXPOSED TO CIGARETTE SMOKE? | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 10. Experience a WHEEZE in your chest? | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 11. Feel you had to AVOID A SITUATION OR ENVIRONMENT BECAUSE OF CIGARETTE SMOKE? | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

HOW MUCH DISCOMFORT OR DISTRESS HAVE YOUR FELT OVER THE LAST 2 WEEKS?

| | A Very Great Deal | A Great Deal | A Good Deal | Moderate Amount | Some | Very Little | None |
|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 12. How much discomfort or distress have you felt over the last 2 weeks as a result of COUGHING? | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

ASTHMA QUALITY OF LIFE QUESTIONNAIRE PATIENT ID_____

SELF-ADMINISTERED DATE_____



IN GENERAL, HOW MUCH OF THE TIME DURING THE LAST 2 WEEKS DID YOU:

| | All of the Time | Most of the Time | A Good Bit of the Time | Some of the Time | A Little of the Time | Hardly Any of the Time | None of the Time |
|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 13. Feel FRUSTRATED as a result of your asthma? | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 14. Experience a feeling of CHEST HEAVINESS? | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 15. Feel CONCERNED ABOUT THE NEED TO USE MEDICATION for your asthma? | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 16. Feel the need to CLEAR YOUR THROAT? | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 17. Experience asthma symptoms as a RESULT OF BEING EXPOSED TO DUST? | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 18. Experience DIFFICULTY BREATHING OUT as a result of your asthma? | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 19. Feel you had to AVOID A SITUATION OR ENVIRONMENT BECAUSE OF DUST? | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 20. WAKE UP IN THE MORNING WITH ASTHMA SYMPTOMS? | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 21. Feel AFRAID OF NOT HAVING YOUR ASTHMA MEDICATION AVAILABLE? | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 22. Feel bothered by HEAVY BREATHING? | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

ASTHMA QUALITY OF LIFE QUESTIONNAIRE PATIENT ID_____

SELF-ADMINISTERED DATE_____



IN GENERAL, HOW MUCH OF THE TIME DURING THE LAST 2 WEEKS DID YOU:

| | All of the Time | Most of the Time | A Good Bit of the Time | Some of the Time | A Little of the Time | Hardly Any of the Time | None of the Time |
|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 23. Experience asthma symptoms as a RESULT OF THE WEATHER OR AIR POLLUTION OUTSIDE? | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 24. Were you WOKEN AT NIGHT by your asthma? | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 25. AVOID OR LIMIT GOING OUTSIDE BECAUSE OF THE WEATHER OR AIR POLLUTION? | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 26. Experience asthma symptoms as a RESULT OF BEING EXPOSED TO STRONG SMELLS OR PERFUME? | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 27. Feel AFRAID OF GETTING OUT OF BREATH? | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 28. Feel you had to AVOID A SITUATION OR ENVIRONMENT BECAUSE OF STRONG SMELLS OR PERFUME? | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 29. Has your asthma INTERFERED WITH GETTING A GOOD NIGHT'S SLEEP? | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 30. Have a feeling of FIGHTING FOR AIR? | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

ASTHMA QUALITY OF LIFE QUESTIONNAIRE PATIENT ID_____

SELF-ADMINISTERED DATE_____



HOW LIMITED HAVE YOU BEEN DURING THE LAST 2 WEEKS?

| | Most Not Done | | Several Not Done | | Very Few Not Done | | No Limitation |
|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 31. Think of the OVERALL RANGE OF ACTIVITIES that you would have liked to have done during the last 2 weeks. How much has your range of activities been limited by your asthma? | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

| | Totally Limited | Extremely Limited | Very Limited | Moderate Limitation | Some Limitation | A Little Limitation | Not at all Limited |
|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 32. Overall, among ALL THE ACTIVITIES that you have done during the last 2 weeks, how limited have you been by your asthma? | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

## Appendix F

### Asthma Severity Risk Index

| | | Points |
|---|---|---|
| Medication used now | | |
| | Inhaled beta agonist | 1 |
| | Inhaled anticholingergic | 1 |
| | Theophylline | 1 |
| | Inhaled cromolyn | 1 |
| | Inhaled corticosteroid | 1 |
| | Prednisone required now | 5 |
| | Prednisone course within last 3 months but not taking it now | 2 |
| Morbidity | | |
| | Hospitalization >1 within last year or within previous 3 months | 5 |
| | Previous intubation for asthma | 10 |
| Weighted Score | Total possible | 25 |

Adapted from "Clinical markers of asthma severity and risk: Importance of subjective as well as objective factors" by S. Janson-Bjerklie, S. Ferketich, P. Benner & G. Becker (1992), Heart and Lung, 21(21), p.268.

Permission to use the Asthma Severity Risk Index was granted to Dr. Carolyn Ross by Susan Janson-Bjerklie.

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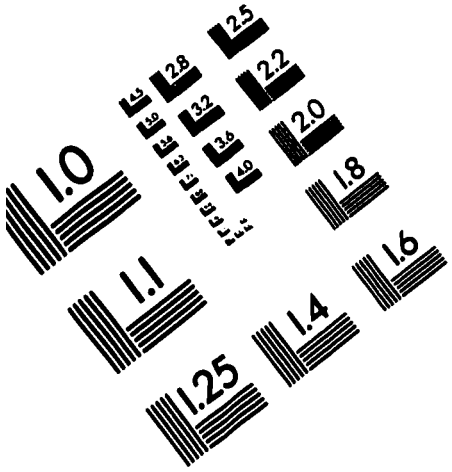
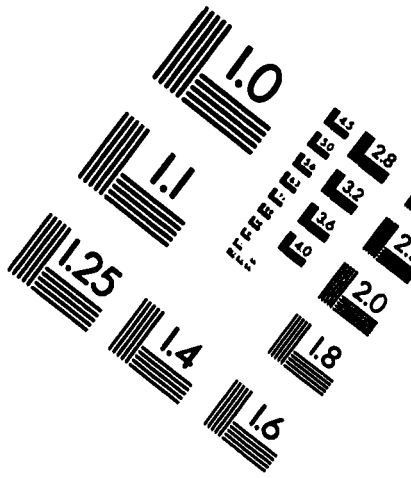
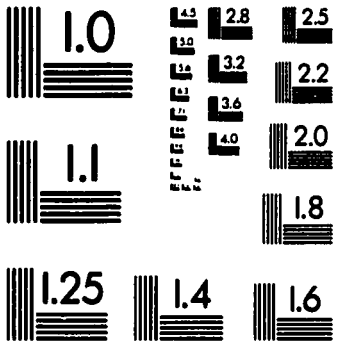
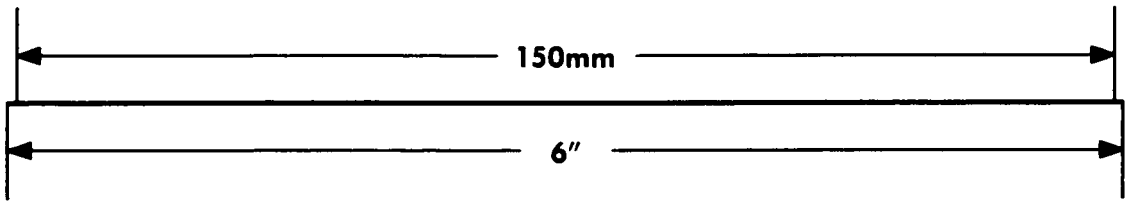
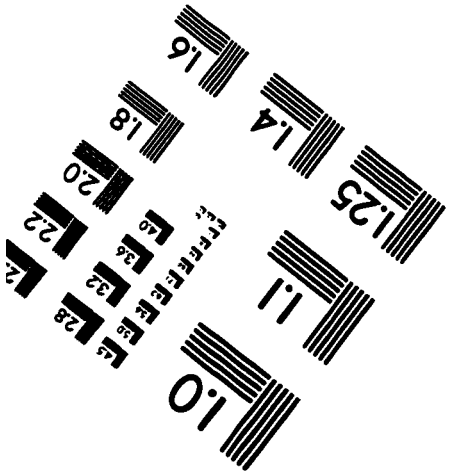
IMAGE EVALUATION
TEST TARGET (QA-3)

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