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Chemotherapy patients' concerns: an application of multiple triangulation methodology

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triangulation methodology**

Cronin, Lucianne, M.S.

San Jose State University, 1992

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CHEMOTHERAPY PATIENTS' CONCERNS:
AN APPLICATION OF MULTIPLE TRIANGULATION METHODOLOGY

A Thesis
Presented to
The Faculty of the Department of Nursing
San Jose State University

In Partial Fulfillment
of the Requirements for the Degree
Master of Science

By
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Abstract

Chemotherapy Patients' Concerns:

An Application of Multiple Triangulation Methodology

by Lucianne Cronin

Concerns of 100 patients and their family members undergoing cancer chemotherapy were studied at seven testing sites as part of a longitudinal project on coping and self-care. Concerns were evaluated over a six month period by three instruments: Weisman and Worden's (1976) Omega Coping Strategies (COPE), Lewis, Wood and Ellison's (1986) Problem-Centered Family Coping Interview (PCFCI), and Weisman and Worden's (1976) Inventory of Current Concerns (ICC). Data from 40 patients were chosen to evaluate the extent of congruence between the qualitative and quantitative findings of these instruments.

Qualitatively, the three instruments showed similar reports of health concerns as their primary finding. Differences existed in that the COPE, the PCFCI, and the ICC illuminated other concerns relevant to chemotherapy patients. Quantitatively, the three instruments had significant patterns of reporting health concerns across testing sessions. These findings emphasize the importance of the use of triangulation in the evaluation of qualitative and quantitative data.

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Chapter 1

INTRODUCTION AND REVIEW OF LITERATURE

Introduction

Dodd, Lindsey, Musci, and Larson (1990) examined coping and self-care in chemotherapy patients and their families. Measurement of the chemotherapy patients and their families' concerns was also undertaken, but they were never examined in detail. This present analysis will examine in greater depth the concerns of those chemotherapy patients.

Measurements of chemotherapy patients' concerns by Dodd et al. (1990) were made by the use of three instruments. These were the Omega Coping Strategies (COPE), the Problem-Centered Family Coping Interview (PCFCI), and the Inventory of Current Concerns (ICC). The assessments with these instruments were taken three times over a six month treatment period and usually occurred immediately following a chemotherapy session.

As well as using the COPE, the PCFCI, and the ICC in their study, Dodd et al. (1990) used other instruments, multiple interviewers, and many sites for testing. A research design with this complexity is called multiple triangulation. The term triangulation refers to multiple methods or to a type of research

analysis used to compare data from different sources within the same study. In this present analysis of chemotherapy patients' concerns, triangulation serves in this latter fashion. By facilitating a multiple comparison of these concerns, triangulation will allow an effective evaluation of the results of the COPE, the PCFCI, and the ICC.

By using triangulation, validity of the findings across the three instruments may be enhanced. The authenticity of substantiated results may serve as a stepping stone to further investigation of concerns of chemotherapy patients.

Conversely, when the use of triangulation shows inconsistencies or disparities, further research must be undertaken to find out why this is the case. Using triangulation to evaluate a combination of instruments' results helps to determine either that an omission has occurred or that a confirmation of pertinent data between instruments exists.

The purpose of this research and the problem statement will now be presented. These will be followed by a review of the coping literature which will focus on the concerns of chemotherapy patients. A discussion of nursing research methodology then introduces the reader to the area of triangulation.

Purpose of The Research

The purpose of this study is to analyze in depth the data from three instruments which are the COPE, the PCFCI, and the ICC. These instruments were used in a large longitudinal study on coping and self-care to measure the concerns of chemotherapy patients and their families. This analysis will only focus on the chemotherapy patients' concerns and will do this by use of triangulation methodology. This type of methodology will provide an evaluation of the data and illuminate the consistency or lack of consistency of individuals responses by comparing responses to the COPE, the PCFCI, and the ICC.

Problem Statement

Nursing methodology has changed over the last 15 years to accomodate the needs of researchers who are dissatisfied with having to decide between a qualitative or a quantitative approach to their research. Currently a type of research methodology has evolved which allows both qualitative and quantitative data to be evaluated meaningfully within the same study. Triangulation methodology allows such an evaluation to occur, and maximizes what both approaches and their data offer.

This study is an in depth analysis of the results of a long term study by Dodd et al. (1990) on the concerns

of chemotherapy patients. The analysis will consist of a comparison of the qualitative and the quantitative data from the 1990 study with triangulation methodology of primary importance.

Review of Literature

Coping

Lazarus in 1966 introduced three types of appraisals undertaken by individuals to facilitate coping. The types of appraisals are an assessment of a threat, an assessment of the individual's own coping options or choices, and a reappraisal when reevaluation of the threat or challenge occurs. Combining both the process of cognition and a transaction with the environment, appraisals result in either a problem focused approach or a palliative approach to a challenge (Dodd, Lindsay, Larson, & Musci, 1990).

By using the framework introduced by Lazarus (1966), Weisman and Worden (1976) investigated coping in cancer patients from 1972-1976. Following patients with different types of cancer for periods of time up to one year, they showed that patients who were less emotionally vulnerable had a larger repertoire of coping skills than those who were more vulnerable. The greater an individual's emotional vulnerability, the less able he or she was to cope effectively by using a large number of personal resources. Hence, the more emotionally

vulnerable patient was less likely to cope effectively.

Omega Coping Strategies (COPE)

Weisman and Worden's (1976) study resulted in the creation of the Omega Coping Strategies instrument (COPE). See Appendix A. The COPE measures coping strategies and has three components: (a) a presenting problem, (b) strategies for its resolution, and (c) an evaluation of the efficacy of the strategies. This analysis deals with only the first component which is qualitative in nature. It asks the patient what problem has the highest priority or importance for him/her.

The remaining two components of the COPE are quantitative in nature. One component asks the patient to rate how well the strategies worked on a 4 point Likert scale (from 1 = no resolution to 4 = a definite solution). The other component offers strategies used to resolve problems. It asks for a check of each of 15 coping strategies with either a yes or no response. These behaviors are (a) rational inquiry, (b) mutuality, (c) affect reversal, (d) suppression, (e) displacement, (f) confrontation, (g) revision, (h) passive acceptance, (i) impulsivity, (j) if X then Y, (k) escape from threat, (l) disengagement, (m) projection, (n) cooperative compliance, and (o) masochism (Weisman and Worden, 1976).

Musci (1983) expanded upon Weisman and Worden's (1976)

study noting an inherent component of denial in many coping strategies. Denial helped to block the strong feelings which occurred when a person learned of the diagnosis of cancer and assisted with getting through a painful period. The adverse effect of denial was that it created isolation and alienation from a cancer patient's support system and negatively influenced the introduction of coping strategies. Thus individuals in denial were less able to understand the reason for treatment and felt more helpless overall. Predictably, this helplessness lead to the use of fewer coping strategies (Musci, 1983).

The presence or absence of coping strategies was not only dependent upon the persistence of denial: it also related closely to the problem perceived by the cancer patient. While the focus of this analysis is an in depth examination of concerns, the COPE instrument provides an appropriate measure of related coping strategies and has been used in many studies.

Dodd et al. (1990) addressed the issue of the reliability and the validity of the COPE instrument and found them to be adequate. The reliability and validity had been documented in Weisman and Worden's 1976 study while another study by Weisman and Worden in 1977 established construct validity.

Weisman and Worden's (1977) study examined the

effectiveness of coping strategies of 163 newly diagnosed cancer patients. They found that the number of coping behaviors used correlated significantly ($p < 0.05$) with both long-term survival and level of emotional distress. Emotional distress was considered to involve not only the present, but its presence was considered a predictor of future emotional stress in these patients.

In 1980 Weisman, Worden and Sorbel compared the impact of two types of intervention on future stress in cancer patients. The types of intervention were patient-centered intervention and problem-oriented intervention. Their conclusions were that regardless of the type of intervention, all individuals who participated in either of the two types benefited from reduced stress and a better problem solving ability. In contrast, individuals who were at high risk emotionally who did not experience an intervention had the same high stress after six months. Without intervention, individuals were unable to cope adequately and continued to have high stress or intense emotional responses.

In cancer patients, coping may involve the display of different emotional responses. These responses are the result of anxiety which accompanies this frightening diagnosis. To handle the immensity of this feeling, coping strategies develop which may remain for the rest of the

patient's life or which may be of short duration. The longevity of a coping strategy may be closely related to the problem or concern perceived by the patient (Musci, 1983).

Inventory of Current Concerns (ICC)

Weisman and Worden (1976) described seven categories of concerns in medical-surgical patients. The seven categories were (a) Health, (b) Self-Appraisal, (c) Work/Finance, (d) Family and Significant Relationships, (e) Religion, (f) Friends, and (g) Existential concerns related to both uncertainty and the possibility of impending death.

These seven categories of concerns provided the foundation for the Inventory of Current Concerns (ICC), a 72-item quantitative checklist of problems developed by Weisman and Worden (1976). The ICC has a three point Likert scale which ranges from 0 = not true to 2 = true. See Appendix B for a copy of this instrument.

Weisman and Worden (1977) established the content and construct validity of the ICC in their study of 163 newly diagnosed cancer patients. Dodd et al. (1990) reported that Internal Consistency reliabilites for this instrument's seven categories ranged from a Cronbach's alpha of 0.87 for Religion to a 0.69 for Work/Finance. These alpha coefficients provided stable reliability

indices. The Internal Consistency reliability coefficients for the remaining five categories were (a) Friends (0.71), (b) Health (0.75), (c) Family (0.76), (d) Existential (0.73), and (e) Self-Appraisal (0.86).

At the same time these investigators were concentrating on the concerns of cancer patients, other researchers found a new focus in the cancer realm. Musci (1983), Dodd et al. (1990), and Lewis, Wood, and Ellison (1986) became interested in the impact of a cancer diagnosis on the families of those diagnosed with this disease. Questions arose about the influence of cancer on the family's functioning, health, and coping abilities (Dodd et al., 1990).

Musci (1983) examined the relationship between family coping strategies and self-care during cancer chemotherapy treatments. She noted that families of cancer patients experience high distress when there is an interruption in its role as a resource and a support system.

Problem-Centered Family Coping Interview (PCFCI)

Lewis, Wood, and Ellison (1986) used the Problem-Centered Family Coping Interview (PCFCI) to measure family functioning. The PCFCI is a qualitative instrument developed by Lewis et al. (1986). It is a structured interview which takes place between family members and a paired interview team. See Appendix C. The PCFCI has

14 questions which ask the family to select "some" problems which they dealt with over the month. The family is then asked which of these problems or challenges was the most important.

Lewis et al. (1986) noted that interviewers and family's assessments of the problem differed. The interviewers reported problems more frequently with emotional distress, conflict, and family resources than did the families. Dodd et al. (1990) considered Lewis et al.'s findings with the PCFCI important enough to include this instrument in their large longitudinal study. They report no reliability or validity data existed, but noted that the PCFCI appeared to have content validity (Dodd et al., 1990).

As well as using the PCFCI, Dodd et al. (1990) incorporated the previously mentioned ICC and COPE instruments into their study. Using these three instruments as well as others, they examined coping and self-care in 100 cancer patients and their families. Measuring responses to the instruments over a six month time period, they evaluated both the patients' concerns and the family's concerns at specific times in relation to cancer chemotherapy.

The COPE's responses showed cancer related health problems were of primary concern each of the three

times it was used. The percentages of the cancer related responses were 34.96%, 46.97%, and 35.38% at one month, four months, and six months (each after a session of chemotherapy), respectively. Similarly, the PCFCI's responses showed cancer related health problems to be primary each of the three times it was used. Thus with both of these instruments, cancer related health problems were the most commonly reported.

The third instrument used to measure concerns was the ICC. Similarly to the other two instruments, it was administered three times over six months. Unlike the other instruments, the most frequently reported concerns with the ICC were existential in nature. These concerns focused on the future and not cancer related health problems.

The discussion of Dodd et al.'s (1990) results as to chemotherapy patients' concerns was introduced for two purposes. The first purpose was to introduce their findings in order that these may be compared to this analysis. The second purpose is to draw attention to the diversity and complexity of the entire Dodd et al. (1990) study. To this end, the aims of the original project by Dodd et al. are given in Appendix D.

The present study refines the findings of Dodd et al.'s (1990) work by a more in depth analysis of the

chemotherapy patients' concerns. For instance, when 30-40% of the respondents of the COPE report cancer related problems as their primary concern over the three measurements, were the same individuals reporting this same concern all three times, or were different individuals reporting this same concern? By the use of triangulation, a comparison of the individual responses to the three instruments over time will result in a better understanding of the concerns of these cancer patients. Since the Dodd et al.'s 1990 study is a vigorous exercise in multiple triangulation, an in depth evaluation of the qualitative and quantitative data are warranted using this method of analysis. How do the qualitative COPE responses, the qualitative PCFCI responses, and the quantitative responses of the ICC compare to the reporting of chemotherapy patients' concerns across and between individuals?

As Weisman et al. (1980) said when referring to the cancer process, "Patients must also deal with a variety of emotional, mental, and social difficulties and concerns, some of which may cause more distress than the disease itself" (p.1). It is the intention of this analysis to clarify what those concerns are.

Nursing Research Methodology:

The Qualitative/Quantitative Debate

The evolution of research tradition was addressed

by Gorenberg (1983) who deliberated on the relevance of both qualitative and quantitative methodologies to nursing science. Gorenberg (1983) questioned the ability of both qualitative ("observational") and quantitative ("experimental") methods to generate answers which addressed the concerns of the discipline of nursing. She asked whether these methods could be appropriately applied to nursing research. Instead the focus must be on the question to be asked and not which method was to be used.

Gorenberg introduced a new model for determining methodology for nursing research which was suggested by Huck, Cormier, and Bounds in 1974. This model would elicit cooperation across disciplines and would result in an expanded research tradition. She contended that the new model still might not meet the need of nursing research because the central issue was ignored.

The central issue was that a strategy should be employed which asked how a nursing question could best be answered. Unless a nursing question could be answered effectively, the methods used in nursing science were not the most conducive to understanding the problems unique to this area. Because of the unique problems of the nursing area, nursing research might benefit from alternative methodologies.

Gorenberg (1983) presented a strong case for nursing researchers who explore and question different methodologies. These researchers attempt creation of an unique knowledge, and in doing so, alter nursing tradition. Research traditions are evolutionary and develop and change over time. Change in nursing research traditions may occur by evaluating the appropriateness of qualitative and quantitative paradigms.

Goodwin and Goodwin (1984) agreed with Gorenberg's (1983) observations as to the lack of revelance of qualitative and quantitative methodology to nursing research. Their article attempted to dispel myths about the differences between the two approaches since it was unproductive to artificially dichotomize qualitative and quantitative research procedures and data. The myths they were concerned with were:

1. The two research methods represent mutually exclusive approaches.
2. Qualitative methods are always natural and and subjective while quantitative methods are controlled and objective, and
3. Qualitative research is typified by a discounting of the results except within its own context.

Their rebuttals of the myths were concise. They were, respectively, that the choice of research design

should match the research question regardless of believed exclusivity. Objective data can be measured in an observational or qualitative setting. Lastly, validity and reliability of qualitative data can be assessed by using triangulation. Triangulation allows for concurrent validation and an in depth examination of the data.

Goodwin and Goodwin (1984) introduced two advantages of obtaining both qualitative and quantitative data from a single research study. The first advantage was that by using a combined approach, greater comprehensiveness will be achieved. The second advantage was that a cross-validation of the findings occurs which ultimately offers external validity. These advantages not only increase much needed validity within the qualitative realm, but will also help to lessen the prevailing gaps between the qualitative school and the quantitative school. The combined use of the two approaches or a triangulation methodology is beneficial and lends credence to a study.

Sandelowski (1986) suggested that triangulation methodology could be used to ensure credibility of a qualitative study. Triangulation across data collection procedures and across data sources would facilitate the examination of congruence. When isolated, the finding of congruence would add to the meaning and the impact of a study.

By 1986 Sandelowski (1986), Goodwin and Goodwin (1984), and Gorenberg (1983) had addressed serious issues with qualitative or quantitative methodologies. While Gorenberg suggested different methodologies be used in nursing research, the others had specifically mentioned triangulation as an appropriate method to integrate the two approaches. Goodwin and Goodwin (1984) noted that triangulation would be useful in comparisons between qualitative and quantitative data, while Sandelowski (1986) suggested that this technique might lend credibility to qualitative studies.

Haase and Myers (1988) addressed the continuing concern that nursing research still involved a choice between a qualitative or a quantitative approach. Specifying exactly when each methodology should be used, they noted that both were limited in scope. The answer to this dilemma was to value equally both objectivity and subjectivity as both contribute to an understanding of the findings of research. Additionally, triangulation may be used integrate qualitative and quantitative approaches to research questions.

Integration of qualitative and quantitative methodology was the theme of Myer and Haase's 1989 article. They defined three principles which justified integration which were (a) nursing practice uses both

qualitative and quantitative research, (b) both types of research must be equally valued, and (c) similarities between the two methods will benefit researchers.

Five guidelines were presented to facilitate integration of qualitative and quantitative research. Their five guidelines briefly described were:

1. The world is interactive.
2. Data from both subjective and objective research are valuable.
3. Both paradigmatic approaches should be used in the design of research.
4. Participants in the study include both the researchers and the subjects, and
5. Differences in view should be actively confronted.

By developing these guidelines, Myers and Haase (1989) enhanced of the nursing research process.

Enhancement of the nursing research process can occur through a better understanding of similarities of the qualitative and the quantitative perspectives. Porter (1989) discussed both the differences and the similarities of qualitative and quantitative methods. As she chose to emphasize the similarities of the two methods, these similarities will be dealt with here.

Porter (1989) reported three similarities between the qualitative and quantitative methods. They were

replicability, causal attribution, and error variance. Replicability occurs when research decisions are made that other researchers could follow. Causal attribution, the second similarity, is the belief that quantitative research is inductive while qualitative is deductive. Generalizations about cause are usually not associated with qualitative studies. Porter (1989) stressed that it was possible to determine causal relationships in qualitative studies if the researcher carefully considered threats to internal validity and designed the study procedures to prevent this.

Error variance, the third similarity, is based on the assumption that quantitative methods use large samples to demonstrate significant effects. Alternatively, qualitative methods compensate for errors by including unexpected results until evolving hypotheses are found significant as well.

Porter (1989), while acknowledging the similarities between the qualitative and quantitative methods, noted that triangulation was not the answer to finding the appropriate method. Triangulation would not diminish differences between qualitative and quantitative paradigms when both methods are used in a study. The answer to this quandry, she maintained, is not the use of triangulation, not the reconciliation of the two paradigms,

but a different focus instead. There must be a focus on how nursing practice and nursing research, on the one hand, and how qualitative and quantitative research methods, on the other, are both intrinsic parts of a larger unity,"...the unity of the everyday practice of nursing research" (Porter, 1989, p.101). This focus would ensure that the diverse nature of reality was evidenced and also isolate and confirm nursing tradition.

This review of the value and application of qualitative versus quantitative research methods within the nursing area emphasized the following changes. Initially there was a decisive framework based on qualitative and qualitative methodologies used to design and evaluate nursing research. Over a relatively short period of time, questions entered as to the singular worth of qualitative or quantitative methods, and nursing research tradition changed to accommodate the challenges to this methodological dichotomy.

Challenges to this methodological dichotomy began by using quantifiable methods to lend meaning to qualitative concepts. The next challenge was to use both methods together to evaluate measurable events. This proved unsatisfactory to certain nursing researchers, and from this, a method emerged to compare the concurrent results of both types. Triangulation, the latter method,

is clearly the choice of evaluation used within the area of nursing research at the present time, except for Porter's (1989) challenge to return to nursing's unique capability of phenomenological observation and documentation.

Triangulation

Denzin (1970) is often quoted as a primary reference for triangulation methodology enthusiasts (Murphy, 1989; Duffy, 1987; Mitchell, 1986). Maintaining that researchers should actively confront methodological and conceptual issues with current tools, he defined triangulation as the use of multiple methods and described five basic types.

The types of triangulation were data, investigator, theory, methodological, and multiple. Data triangulation is accomplished by obtaining different measurements of the same phenomenon. Data triangulation includes three important variables which are time, space (as in ecology studies), and persons. The persons category is further differentiated into aggregate-person analysis (when individuals are not related), interactive analysis (family or work crew), or a collectivity analysis (a community or a society). With his sociological perspective, Denzin suggested that a classic study should not only include concern for time, place, and persons, but must also note

the social unit.

Investigator triangulation occurs with the use of multiple researchers, observers, or analysts in the same study. Denzin (1970) thought that greater reliability could be demonstrated by the participation of many individuals. Potential bias from more limited approaches would be restricted in this fashion.

Theoretical triangulation is best accomplished when several different hypotheses are examined within the same research setting simultaneously. When hypotheses are evaluated in the same setting, the result is a maximum use of the data which encourages the broadest possible input about a certain phenomenon.

Methodological triangulation is the fourth type discussed by Denzin (1970). It is divided into within-method and across-method approaches. The former takes place when one researcher's method is used to measure an event which is then broken down into smaller units. A survey which contains different scales was the example offered by Denzin.

Denzin (1970) considered the across-methods approach useful when dissimilar methods measure the same unit as it strengthened assessments. The cross-methods approach uses one method to counter the imperfections of the others with resultant increased validity of the

chosen methodology. In summation, methodological triangulation can take many forms, but it always combines two or more different strategies in the same study.

The most complex type of triangulation is called multiple triangulation which Denzin (1970) considered to be of the highest order. This methodology combines varying theoretical perspectives, differing methods, multiple observers, several sites, and data from several instruments, both qualitative and quantitative in nature.

Mitchell (1986) closely adhered to Denzin's (1970) framework of triangulation by expanding on each type. She offered a wider description of instances where different types of triangulation may be used to better advantage by nursing researchers. Mitchell's main thrust was that triangulation is a valuable tool to be used by health researchers.

To encourage the application of triangulation, Mitchell (1986) examined three problems encountered with both the implementation and the analysis of multiple triangulation. The problems were the unit of analysis, time and money constraints, and investigator demands. The first problem, unit of analysis, could introduce disparity in its findings when the study did not have a central focus. This is a crucial aspect of combining data sources as the unit of analysis serves as a guide

to the design, data collection, and statistical analysis of the research.

Time and money constraints also pose problems to a nursing researcher in multiple triangulation. Because many observations are made over a considerable period of time, the availability of the cost of this research, as well as commitment, is necessary.

The third problem, investigator demands, stems from Mitchell's (1986) observation that this position requires expertise in the area of methodology. All nurse researchers should be well informed in both methods and statistics in order to be able to handle the diverse nature of investigator requirements in multiple triangulation.

Problems associated with the analysis of multiple triangulation had not been addressed in the literature in any detail prior to Mitchell's (1986) contribution. She suggested that the combination of qualitative and quantitative data could best be accomplished either by multivariate analysis or by the conceptual merging of data. Used appropriately, these methods of analysis would benefit nurse researchers.

Duffy (1987) discussed the benefits of triangulation and listed six advantages of its application to nursing studies. Concisely outlined, they were:

1. Using qualitative methods, conceptual frameworks

can be created either in part or entirety.

2. Quantitative data can be verified by qualitative methods when the data overlap.

3. Data from qualitative surveys can be used to develop quantitative tools.

4. Constructs developed from reliable items can be gathered from observational findings.

5. Models derived from statistics can be portrayed through specific case studies.

6. Explanation of unclear responses can be accomplished by reexamining field notes.

The above section provided an introduction to triangulation. Denzin's (1970), Mitchell's (1986), and Duffy's (1987) articles provided nursing researchers with a stable, reasonable alternative to the quandry of the choice of statistical methods. As well as outlining types of triangulation, discussion of both its advantages and disadvantages took place. Nursing applications of triangulation will now be presented.

Triangulation in Nursing Research

Triangulation in nursing research will be discussed by the use of three articles which focus on its application. These three articles represent concerted attempts to use triangulation methodology, and the authors emphasized that this approach will maximize the findings

of their research. In addition, one other paper is introduced which adds to the triangulation literature in general.

In 1989 Murphy presented findings from an examination of the processes and outcomes of a disaster project which took eight years. It involved evaluation of the survivors of the volcanic eruption of Mt. St. Helens in the state of Washington in 1980. Because this evaluation included multiple observers, multiple data sources, multiple investigators, as well as the use of both qualitative and quantitative analyses on the data, the methodology was labeled multiple triangulation.

Data were collected both at one year and three years after the catastrophe. The goals were three-fold. The first one was to detect the relationships between disaster-related stress and mental and physical health outcomes. The second goal was to examine the extent to which self-efficacy and social support would mediate the stress-health relationship, and the third was to explore the effects of mass media coverage on health delivery using multiple triangulation methods (Murphy, 1989).

While not specifying the precise instruments used in her research, Murphy reported that data were collected on 36 attributes. Testing was undertaken by both

qualitative and quantitative means, and no models existed by which to scrutinize such a disaster.

As may be anticipated, one year after the disaster, persons who had lost a loved one, or who had a loved one disappear and be presumed dead, suffered the most in terms of health consequences. A surprise finding was that individuals who lost their homes suffered more than the bereaved at the third year evaluation. The homeowner's loss was more significant as time passed in terms of personal repercussions.

Hinds and Young (1987) also used triangulation to study the health outcomes of a population of individuals over 55 years of age who had community health nursing intervention related to wellness concepts. Using multiple triangulation methodology, the authors also used a multitude of instruments over four different time intervals, and subjected their data to both qualitative and quantitative analyses.

Their conclusions were that follow-up care by nurses helped to reinforce wellness concepts. They also found that by using triangulation, understanding of both the quantified results and the themes were expanded. They chose to use Mitchell's (1986) suggestion of multivariate analyses as the method of combining qualitative and quantitative data, and stressed that the convergence

between methods helped make the construct of wellness operational.

The third research article to be discussed in this section is Hinds' (1989) work. She used triangulation methodology to examine adolescent hopefulness.

Methodological triangulation was used in the form of a longitudinal, descriptive-correlational design. This incorporated both types of analyses and allowed for the detection of change in hopefulness in an inpatient adolescent population who were being treated for drug abuse.

A visual analogue scale of 24 items, the Hopefulness Scale for Adolescents, measured quantitatively current perceptions of hopefulness. The qualitative data were obtained via interview to define factors which were thought to influence hopefulness. Both instruments were given at three time intervals; 24-48 hours after admission, four to five days before discharge, and four-five weeks after discharge.

Hinds' (1989) finding that adolescent hopefulness changed only from the first evaluation to the second was verified by both the qualitative and the quantitative analyses. Adolescents experienced more hopefulness as treatment progressed, and Hinds noted that by use of a combination approach, areas which needed remediation

could be identified prior to discharge. If a triangulation methodological analysis had not been undertaken, quantified responses would not have been further examined, and information would have been lost. In this instance, it meant that an adolescent would have left the hospital with a different set of issues than those with which he or she had arrived.

The final report to be discussed here is that of Kimcki, Polivka, and Stevenson (1991). They have added to this body of literature by examining facets of triangulation which have not been previously undertaken. Their contribution was to offer operational definitions of the different types of triangulation which further aid in the application of triangulation methodology.

Having concluded with the presentation of a short history of nursing research methodology, an effort has been made to acquaint the reader with the available literature on triangulation. Triangulation provides researchers with options to study phenomena in a more indepth fashion. It allows for congruence of instruments to be readily acknowledged, and offers an avenue to evaluate the meaningfulness of data gathered from the same set of data in a variety of ways. The study undertaken here uses triangulation methodology to examine the concerns of chemotherapy patients.

Measurements were taken three times over six months with three different instruments, the COPE, the PCFCI, and the ICC. Comparisons between the findings of these three will allow for further information to be available on the usefulness of triangulation as a methodology for nursing research.

The conceptual framework from which this study evolved will now be presented. Following this, a list of definitions will be given. Chapter 2 constitutes this study written in article format. Because of the length of the unabridged results, they have been placed in Appendix E, and a shortened result section is included as part of Chapter 2. Chapter 3 offers the summary, limitations, and further research evoked by the results of this study.

Conceptual Framework

The conceptual framework reported by Dodd et al. (1990) included three main areas. These were the areas of coping, the area of family functioning, and the area of self-care. The area of coping is distinguished by emphasis on Lazarus and associate's (1966) development of the theory of coping. As Dodd et al. (1990) stressed, Lazarus established a relationship between the appraisal process and the choice of coping strategies. Whichever coping mechanisms were used, coping is perceived as a

dynamic process, individual to each patient's resources and constraints.

The model of family functioning used in Dodd et al.'s (1990) study was taken from McCubbin and Patterson's 1981 study. This study dealt with the intense process of family adaptation to the cancer situation. Both the agent which interacts with the community and the agent which responds to the stress, the family's interpretation of the experience of cancer is crucial to its well being.

The third main area introduced by Dodd et al. (1990) in their conceptual framework is that of self-care. Based primarily on Drem's (1980) theory of self-care, emphasis was placed on the problem solving ability of individual cancer patients. Dodd et al. (1990) maintained both that self-care behaviors are learned, and that all people have the potential to develop the knowledge, the skills, and the motivation necessary for self-care. Basic to self-care is the individual capacity for acquiring new knowledge.

In summary then, Dodd et al.'s (1990) conceptual framework included the areas of coping strategies, family functioning, and self-care. The only addition in this study to the framework outlined above is the perspective gained by a review of the triangulation literature. As spokesperson, Denzin (1970) provided the

framework for this type of research methodology. The use of triangulation methodology in this study has directly descended from his work. Since this study involved multiple researchers, instruments, sites, measures, and stems from eclectic theoretical bases, the evaluation of its findings warrants this approach.

Definitions

a. Concern is a problem or issue which has meaning for the individual and which does not necessarily warrant a response. As defined by Weisman and Worden (1976-1977), concerns fall into the following groups; existential, family, friends, work/finance, religion, health, and self-appraisal.

b. Patient is an individual with the diagnosis of cancer who participated in the coping and self-care study (Coping and Self-Care of Cancer Patients: Nurse Prospectus, 1990).

c. Triangulation is a method of comparing different sources of data in order to assess validity or redundancy in instrumentation.

d. Consistency of responses is to report the same concern over two or more of the three testing sessions.

Summary

This first chapter has served as an introduction to the basic tenets of this study. They are:

1. Qualitative and quantitative paradigms have come under scrutiny within the last ten years, and now considerable debate exists as to their value when used in an isolated mannner.

2. This study on the concerns of patients with cancer who are undergoing chemotherapy represents only a small portion of a much larger study on coping and self-care.

3. Data was obtained from a sample of a population of 100 patients by taking the first 40 patients with a complete set of data.

4. By using many assessment tools, several measurements of specific variables were taken over a six month period. These assessment tools were both qualitative and quantitative in nature, and justify the use of triangulation strategy to maximize possible congruence;

5. Nursing researchers are forerunners in the uses of triangulation, or multiple evaluation, as this methodological technique suits the complexity and diversity of the phenomena which are nursing's interests; and

6. Concerns of patients receiving chemotherapy are a small part of the literature on coping strategies.

Chapter 2

ARTICLE

Abstract

Concerns of 100 patients and their family members undergoing cancer chemotherapy were studied at seven testing sites as part of a longitudinal project on coping and self-care. Concerns were evaluated over a six month period by three instruments: Weisman and Worden 's (1976) Omega Coping Strategies (COPE), Lewis, Wood and Ellison's (1986) Problem-Centered Family Coping Interview (PCFCI), and Weisman and Worden's (1976) Inventory of Current Concerns (ICC). Data from 40 patients were chosen to evaluate the extent of congruence between the qualitative and quantitative findings of these instruments.

Qualitatively, the three instruments showed similar reports of health concerns as their primary finding. Differences existed in that the COPE, the PCFCI, and the ICC illuminated other concerns relevant to chemotherapy patients. Quantitatively, the three instruments had significant patterns of reporting health concerns across testing sessions. These findings emphasize the importance of the use of triangulation in the evaluation of qualitative and quantitative data and offer nursing researchers an important research method.

Introduction

The purpose of this analysis is to compare chemotherapy patients' concerns by triangulation methodology. Dodd, Lindsey, Musci, and Larson (1990) examined coping, self-care, and concerns of chemotherapy patients and their families. Evaluation of the chemotherapy patients and their families' concerns was never examined in detail. This study will undertake the analysis of those concerns.

Measurements of chemotherapy patients' concerns by Dodd et al. (1990) were made by the use of three instruments. These were the Omega Coping Strategies (COPE), the Problem-Centered Family Coping Interview (PCFCI), and the Inventory of Current Concerns (ICC). Data were collected with these instruments three times over a six month period and usually occurred immediately after a chemotherapy session.

Since the original project by Dodd et al. (1990) utilized the three instruments, multiple interviewers, and many sites for testing, evaluation of such concerns was complex. An innovative way proposed to study such a complex design such is by triangulation.

Triangulation is a type of nursing research methodology implicated when complex analysis is necessary. Because of its diverse nature, triangulation facilitates a more in depth evaluation when comparisons are to be

undertaken. As the instruments used by Dodd et al. were both qualitative and quantitative, a method of analysis which allowed for the greatest amount of information had to be used. Using triangulation to evaluate a combination of instruments' results helps to determine either that an omission has occurred or that a confirmation of pertinent data between instruments exists. It is within this framework, that the concerns of chemotherapy patients will be examined.

Coping

Lazarus (1966) introduced three types of appraisals used by individuals to facilitate coping. These types of appraisals were an assessment of a threat, assessment of an individual's coping options, and a re-evaluation of the threat when it reoccurs (Musci, 1983; Dodd, Lindsay, Larson, & Musci, 1990).

Weisman and Worden (1976) used Lazarus' framework to investigate coping behavior in cancer patients. They found that patients who coped best had a larger repertoire of responses and were less emotionally vulnerable than those who did not. These findings resulted in the development of the Omega Coping Strategies (COPE) by Weisman and Worden (1976). The COPE elicits an important problem, identifies strategies used for its resolution, and evaluates the effectiveness of these strategies.

Of the COPE's three sections, this analysis will deal with only the qualitative section which elicits an important problem. It asks the patient to write the problem which has the highest priority for him/her. The remaining two components of the COPE which are quantitative in nature will not be dealt with here.

The reliability and validity of the COPE were documented in Weisman and Worden's 1976 study, while a different study in 1977 established construct validity. The 1977 study monitored the effectiveness of coping strategies in 163 newly diagnosed cancer patients. Weisman and Worden (1977) found that the number of coping strategies used correlated significantly ($p < .05$) with long-term survival and level of emotional distress by use of the COPE.

The coping strategies of the COPE were later expanded upon by Musci (1983) who emphasized the potent effect of denial. Denial restricted an individual's capability to make strategy decisions and use coping strategies effectively. Additionally, the use of coping strategies was not only dependent upon a persistence of denial, but it was also inherently related to the perceived problem. Thus coping strategies must be appreciated within the context of both the persistence of denial and the particular problem or concern it was to resolve.

Weisman and Worden (1976) defined seven major categories of concerns found in medical-surgical patients. Those were; (a) Self-Appraisal, (b) Health, (c) Work/Finance, (d) Family, (e) Religion, (f) Friends, and (g) Existential concerns. They used these seven categories to develop the Inventory of Current Concerns (ICC), a 72 item quantitative checklist of problems. The ICC has a three point Likert scale which ranges from 0 = not true to 2 = true.

Weisman and Worden (1977) established the content and construct validity of the ICC in their study of newly diagnosed cancer patients. Dodd et al. (1990) reported that Internal Consistency reliabilities for its seven categories ranged from a Cronbach's alpha of 0.87 for religion to 0.69 for Work/Finance. These alpha coefficients provided stable reliability indices. The Internal Consistency reliability coefficients for the remaining five categories were; (a) Friends (0.71), (b) Health (0.75), (c) Family (0.76), (d) Existential (0.73), and (e) Self-Appraisal (0.86) (Dodd et al. 1990).

At the same time these investigators were concentrating on the concerns of cancer patients, other researchers became interested in the impact of a cancer diagnosis on the families of those diagnosed with this disease (Musci, 1983).

Lewis, Wood, and Ellison (1986) used an instrument called the PCFCI to measure family functioning. The PCFCI consists of an interview between the family members and a paired interview team. One question asked of the family is to select the one concern experienced within the last month which to them was most important. Finding that the interviewers in the Lewis, Wood, and Ellison (1985) study reported more frequent problems with emotional distress, conflict, and resources on their form than the families had verbally reported, Dodd et al. (1990) included the PCFCI in their study on coping and self-care. Dodd et al. (1990) reported no reliability or validity data existed, but noted that the PCFCI appeared to have content validity.

Using the PCFCI, Dodd et al. (1990) incorporated the COPE and the ICC into their self-care study of 100 cancer patients and their families to measure concerns. Evaluation with each instrument occurred three times in six months following chemotherapy. The times of the administration of the instruments are given in Table 1.

Cancer related health problems were the primary concerns found by both the COPE and the PCFCI in Dodd et al's (1990) study. Most of the responses to both instruments referred to either "cancer" or "health" problems. The ICC 72 item checklist results showed

different concerns which focused on existential issues with much less emphasis on cancer related health problems.

Table 1

Evaluation Times by Session and Instrument

	Session 1		Session 2		Session 3	
	Time 1		Time 2		Time 3	
	t1		t2		t3	
MONTH	1	2	3	4	5	6
COPE	X			X		X
PCFCI		Z	Z			Z
ICC		0		0		0

Having presented a short but relevant review of the coping literature, the reader has been introduced to the basic tenets which underlie the examination of chemotherapy patients' concerns. Because Dodd et al.'s (1990) study included both the use of qualitative and quantitative research and a multiple triangulation methodology, a review of triangulation literature is indicated.

Triangulation

Denzin (1970) is often quoted as the primary reference by triangulation methodologists (Murphy, 1989; Duffy, 1987; Mitchell, 1986). Maintaining that researchers

should confront methodological and conceptual issues actively with current tools, he defined triangulation as the use of multiple methods to evaluate a research question and described five types.

The five types of triangulation described by Denzin (1970) were data, investigator, theoretical, methodological, and multiple. In multiple triangulation, many researchers unite in one investigation with a number of observers, data, varying theoretical perspectives, and differing methods. Denzin maintained that multiple triangulation was the most refined and of the highest order.

Myer and Haase (1989) considered triangulation an effective way to integrate qualitative and quantitative paradigms. They offered nursing researchers five guidelines to facilitate the intermeshing of the two approaches. These were (a) both qualitative and quantitative data are of worth, (b) nursing deals with the complex interactions of people and environment, (c) both types of analyses (questions) should be included in research studies, (d) both subject and researcher are participants in a study, and (e) examination of disparities should be actively evaluated. By using these guidelines, nursing research would benefit immeasurably. An approach such as triangulation would incorporate these guidelines

and facilitate the exchange of qualitative and quantitative information (Sandelowski, 1986; Goodwin and Goodwin, 1984; Myer and Haase, 1989).

Recently researchers Kimchi, Polivka, and Stevenson (1991) made an additional contribution to the area of triangulation. As well as focusing on the different types of triangulation, they offered an operational definition for each type by way of a review of past literature in this field. Their work will assist other researchers in undertaking studies using triangulation methodology.

This analysis will also add to the literature in the triangulation arena. It is an attempt to expand, by the use of triangulation, on the findings of Dodd et al's (1990) research on concerns of chemotherapy patients as reported above. By the use of triangulation, a comparison of the individual responses over time to these three instruments will take place. This comparison will provide a better understanding of the concerns of chemotherapy patients. For instance, when 30-40% of the respondents on the ICC report a primary concern with their cancer status, were these the same individuals reporting this concern over the six months, or did responses vary by individual over time?

Method

Design of the Study

This study measured the data reported from three instruments which dealt with chemotherapy patients' concerns over a six month period. Measurement of the concerns by both qualitative and quantitative instruments occurred three times after a chemotherapy session (See Table 1). A longitudinal survey technique was used to investigate concerns, self-care, and coping of both patients and their family members.

Subjects

Of the 100 patients used in the study by Dodd et al. (1990), the first 40 patients with the most complete data were chosen. All the patients had advanced cancer and received chemotherapy. The most common type of cancer was breast cancer (48%), followed by lymphoma, lung, colo-rectal, and Gu/Gyn. The age range of the patients was 20-78 years with 69% females and 31% males. The majority were married (58%) and were Caucasian (78%). Human Subjects' Approval was obtained (see Appendix F). All patients and families signed a consent form informing them of their rights and their right to withdraw from the study at any time. See Appendix G.

Setting And Data Collection

Measurement with the COPE and the ICC instruments

occurred at seven chemotherapy sites in a metropolitan area. The PCFCI was administered in the patients' homes with nurse researchers present.

Patients' responses were evaluated after filling out the COPE, and the ICC, and after completing the PCFCI interview three times over six months. The COPE asked the patients an open-ended qualitative question on concerns which was, what problem has the highest priority or importance for you? A qualitative question was also posed by the PCFCI instrument.

The PCFCI has 14 questions, and the first asked the patients and the family to select "some" major problems which occurred during the last month. The second question asked for the most important problem or challenge which is the one under consideration here.

The responses to the quantitative ICC were provided by the patients' marks on its 72 item checklist of possible problems. The ICC has a three point Likert scale (0 = not true to 2 = true), and respondents had to choose from one of the three responses for each item.

Procedure for The Analyses of The Results

The raw data were analyzed by using exact words from both the COPE and the PCFCI and the numerical responses to the ICC. Each response was individually evaluated and placed into the appropriate category of the ICC.

Thus categorized, the highest frequencies of the concerns from the COPE, the PCFCI, and the ICC were noted.

Each of the 40 patient's results were then collated individually. Because of the six possible testing times, the decision was made to condense the data into smaller units in order to be more workable. The results during the first two months were labeled as time 1 (t1): those from the third and fourth months were labeled as time 2 (t2): and those taken in the fifth and sixth months were labeled as time 3 (t3). The combined time analysis resulted in 2,232 data responses.

Because of the high number of responses in the health category, further analyses were undertaken noting both the frequency and timing of these concerns. Those who reported health concerns across all three sessions (or six months) were compared to those who reported the same health concern over two of the three sessions (or four months for all three instruments by Chi Square analyses.

Chi Square (X^2) analyses were undertaken between the instruments to compare the frequency of health concerns across testing sessions. These occurred between (a) the three instruments, (b) the COPE and the ICC, (c) the PCFCI and the ICC, and (d) the COPE and the PCFCI's health concerns. Due to the small frequencies in these categories, responses of individuals who reported the

same health concern in two of the three testing sessions (t1 and t2, t2 and t3, or t1 and t3), were collapsed into one category to enable comparison to those who reported the concern across all three sessions. Yates' correction allowed the conditions of the Chi Square to be met.

Results

Omega Coping Strategies (COPE)

Of the 120 possible responses to the COPE questionnaire, 59.2% or 71/120 occurred in the health category. Qualitatively, all but eight of the 71 answers dealt with cancer related problems or the wish to get well. The remaining eight were health concerns not related to cancer such as Parkinson's Disease or a broken ankle.

The second highest category of concerns was Work/Finance which was indicated by 15 individuals (12.5%). Work concerns were either whether they could carry a full load at work or whether they could return to work. Those who were concerned with finances were straightforward in their expression of needing money.

The COPE's results were evaluated further to determine whether a pattern of responses occurred across all three testing sessions. Of the 40 participants, 22 or 55% expressed a concern in the same category over all sessions. A majority of 19 used the health category. Of the 57 responses from these 19 individuals, 44 (77.2%)

made reference to cancer with the remaining 13 stating other health concerns

Of the 18 individuals who did not report the same category over all sessions, four had no similarity across sessions while 14 used the same category for two of the three sessions. Of this latter group, ten reported the same category of concern in both the t1 and t3 sessions. The categories were; Health (5), Work/Finance (3), Family (1), and Self-Appraisal (1). Those individuals who chose the same category of concern for all sessions combined with those who used two of the three accounted for 90% of the responses (22 and 14, respectively).

Problem-Centered Family Coping Interview (The PCFCI)

Of the 120 responses to the PCFCI, 47.5% (57) related to Health. The second highest frequency of concerns was Family with 14.2% while the category of Friends' frequency was 12.5%; these three categories totalled 74.2%.

Of the PCFCI's health responses, the majority were connected either to cancer related concerns or to chemotherapy except for seven. These seven reported problems such as diet, drinking, and a broken ankle.

Evaluation of the pattern of PCFCI's responses was undertaken and showed only eight of the 40 individuals used the same category across all sessions. Five of these were in the Health category, two had issues with Friends,

and the one remaining was a family concern.

An additional 23 individuals via the family interview expressed similar concerns across two of the three sessions. Nine occurred in t1 and t2, 7 in t2 and t3, and the last 7 were seen in t1 and t3. Of the 23 individuals, 15 or 65.2% related health concerns. The others were evenly divided across the categories of Friends, Family, Work/Finances, or Self-Appraisal.

Overall the results of the PCFCI were varied. While the major focus reported with this instrument was health issues, the frequencies were not as high as those seen with the COPE's findings. Additionally, a higher number of reports occurred in both the Family and Friend's categories with the PCFCI, a family interview.

Inventory of Current Concerns (The ICC)

Health concerns (24%) dominated the responses of the ICC by a small amount. The categories of Self-Appraisal (22.5%) and Family (14.9%) followed. The remaining four categories ranged from Existentialism (11.3%) to Friends (8.4%).

The question asked at this point was what pattern occurred in the distribution of the use of the seven categories over time? That is, did the same individuals report the same category of concern across all three testing sessions? Or did different individuals use

the same categories over the three testing sessions? Thirty percent (12/40) used the same category over all the testing sessions. Of the 12, five (41.7%) focused on health issues, and four (33.3%) reported Self-appraisal concerns. Twenty-two patients used the same category of concerns over two of the sessions with the majority occurring in both the Health and Self-Appraisal categories.

A Comparison between The Three Instruments

The COPE's results exhibited health concerns in much higher frequency (59.2%) than the ICC's finding of 24%. Quantitatively different, the two instruments differed in quality as well. The COPE's responses included global items such as cancer and health while the checked ICC health items were difficulty sleeping, pain, fatigue, and an inability to get around.

The categories of Family and Self-Appraisal also did not agree qualitatively between the instruments. Family issues with the COPE were more specific than what the ICC's checklist showed. Conversely, the Self-Appraisal responses of the COPE were more global than were the ICC's items. The COPE's responses focused on concepts such as being secure or referred to other personality attributes while the specific responses of the ICC included restlessless and anxiety.

Comparing the PCFCI's responses to the ICC allowed

other findings to emerge. The health concerns of the PCFCI were individual with an almost equally high number focused on health changes associated with chemotherapy.

Both the PCFCI and the ICC had a large number of family concerns proportionately. While the PCFCI's responses centered on a particular individual's health status, the ICC's most frequent responses differed. The items used in the family category of the ICC were that sexual needs were not being met or wanting to be more self-sufficient.

Triangulation Results

Qualitatively, the COPE's responses were concentrated in two areas: Health and Work/Finance. Of the 40 participants, the majority indicated that health concerns about cancer were the main priority. Another small group was concerned about their work or financial condition. Both the Health group and the Work/Finance group had the same concern either across all testing sessions or for two of the three of the sessions.

The PCFCI's responses were largely focused on health issues as well. As with the COPE, most of these responses were global in nature (cancer or health), with a few unique entries (broken ankle). Additionally, there were a high number of entries in both the Family and Friend's categories with the PCFCI. See Table 2 for the total

numbers and percentages of each category for the three instruments across the three testing sessions.

Both Health and Self-Appraisal responses occurred

Table 2

Number of Responses and Percentages per Instrument
for The Three Testing Sessions

CATEGORIES .	COPE		PCFCI		ICC	
	#	%	#	%	#	%
Health	71	59.2	57	47.5	488	24
Work/Finance	15	12.2	9	7.5	207	10.2
Family	11	9.2	17	14.5	303	14.9
Existentialism	8	6.7	6	5	229	11.3
Self-Appraisal	9	7.5	10	8.3	483	22.5
Friends	1	0.8	15	12.5	170	8.4
Religion	1	0.8	0	0	177	8.7
No Answer	4	3.3	6	5.0	0	0
TOTAL	120	100	120	100	2032	100

in equal numbers with the ICC, and qualitatively, neither of these categories of the ICC resembled the PCFCI's content, The ICC's items were more specific than the counterparts of both the COPE and the PCFCI. A quantitative similarity was noted between these two instruments in that the PCFCI did resemble the ICC in its distribution of health

concerns across testing sessions.

Examination of the pattern of distribution of the instruments was undertaken on the Health responses

Table 3

Number of Individuals Who Reported Health Concerns
across Testing Sessions

	t1t2t3	t1t2	t2t3	t1t3	Total
COPE	19	1	5	0	25
PCFCI	5	7	4	4	20
ICC	5	3	4	2	14

because of their high frequencies. No other category allowed this comparison due to their low numbers. Table 3 presents the number of individuals with health concerns for all three instruments with their distribution across time. Given that each instrument had a different pattern of health responses, a Chi Square (X^2) analysis was undertaken between the frequencies of these individuals with the COPE, the PCFCI, and the ICC to assess the degree of association (Robson, 1973).

The analysis between the three instruments was highly significant as $X^2 (2, n = 59) = 15.17, p < .001$. This finding indicates the three instruments differed in their pattern of reports of health concerns over the testing sessions.

To examine this in more depth, further Chi Square analyses compared the health frequencies of the individual instruments across time. These analyses occurred between the COPE and the ICC, between the PCFCI and the ICC, and lastly, between the COPE and the PCFCI.

The COPE and the ICC analysis was significant; $\chi^2 (1, n = 39) = 7.32, p < .01$. Clearly, the COPE had a higher number of individuals who reported health concerns across all three sessions compared to the number of individuals who used the ICC to report the same health concern in two of the three sessions.

The association between the PCFCI and the ICC was not greater than can be expected by chance; $\chi^2 (1, n = 34) = 0.82, p > .05$. The distributions of reported health concerns between the PCFCI and the ICC were not dissimilar enough across testing sessions to warrant significance.

The final analysis between the COPE and the PCFCI was highly significant; $\chi^2 (1, n = 45) = 11.73, p < .001$. Examination of Table 3 reveals a large number of responses occurred across all three sessions (t1, t2, and t3) with the COPE unlike the PCFCI's pattern. The PCFCI's responses were evenly distributed across all sessions.

The Chi Square analyses showed the three tools differed both qualitatively and quantitatively in the treatment of health concerns. Not only did different foci of concerns

enter with the three instruments, but the distribution of individuals reporting health responses over time was also notable.

Discussion

While health was a primary focus in all three instrument's results, there were notable differences both as to type of concern and the timing of concerns. The COPE showed a continuity across time which neither the PCFCI or the ICC exhibited. While having a greater number of similar concerns across two of the three sessions, both the PCFCI and the ICC had fewer reports of the same concern over the entire testing period of six months.

Chi Square analyses (X^2) undertaken on the most frequent category Health across instruments provided diverse results. There was a significant difference when all three instruments were compared. Analyses between the COPE and the PCFCI, and the COPE and the ICC also showed significant differences. Clearly the COPE's health concerns were located consistently across all three testing sessions, while the PCFCI and the ICC had these reports distributed either across all the testing sessions or in two of them. This means that the health concerns reported by the COPE instrument were essentially constant over the testing period, unlike the PCFCI and the ICC. The majority of health reports of the PCFCI and the ICC occurred in

two of the three sessions. Additionally, there was no preference as to which two sessions were used, as the reports were evenly distributed across t1&t2, t1&t3, and t2&t3. Thus, a quantitative difference in the patterning of qualitative concerns occurred. This may have been due to the wording of the different instruments.

The COPE, in asking the respondents which problem had the highest priority for them, differed from the PCFCI's focus on the most important problem and from the specific health items of the ICC instrument. It seems clear that the cancer patients were able to distinguish between their major concern (cancer or health) and other meaningful yet peripheral concerns.

Further examination of the qualitative differences in concerns showed the following. Secondary to the Health category, the COPE had frequent reports in the Work/Finance area. Family and Friends came to the fore with the PCFCI, while the ICC's second highest category was Self-Appraisal. This was similar to Dodd et al.'s (1990) findings with the exception of the ICC which showed a primary concern with health instead of existential concerns as they reported. This analysis most likely differed from Dodd et al. (1990) results in that only a sample of their chemotherapy patients' data were used for this evaluation.

Out of the seven categories, four agreed qualitatively

across instruments. They were Work/Finance, Religion, Family, and Existentialism. The responses to these categories were similar in content regardless of the tool used.

Three categories did not agree in content across instruments. This was due to the general responses given to the qualitative COPE and PCFCI instruments which did not match the specific item content of the quantitative ICC.

With an analysis combining both qualitative and quantitative data sets, the evaluation of the relationship between these instruments was maximized by the use of triangulation. By allowing a comparison of qualitative instruments (the COPE and the PCFCI) to the quantitative ICC, findings emerged which may assist in a better determination of chemotherapy patients' concerns.

The findings propose all three instruments deal effectively with health issues, although a choice must be made by an individual researcher as to whether general or specific information is sought. When general information is needed as to chemotherapy patients' concerns, qualitative instruments should be used. Specific information about these concerns may be provided by the quantitative instrument with its structured items. Additionally, each instrument had qualitative strengths.

Each instrument has a strength in emphasizing different concerns. For example, the ICC brought out Self-Appraisal, the COPE brought out Work/Finance, while PCFCI brought out both Family and Friends issues. Since the PCFCI's responses were obtained through a structured family interview, it is reasonable to expect the category of Family concerns would predominate. When the patients answer the questions, these concerns may be meaningfully compared to the other instruments' findings on concerns as they were here.

The findings taken in concert with an appropriate intervention would improve care to patients in this area. For instance, when a patient reports a health concern using the COPE in the first testing session, it may be that this concern will exist over the entire first six months of chemotherapy. Having this awareness, a health care provider can devise interventions which may address this need in a timely fashion.

Conclusion

Multiple triangulation is an innovative approach to the analysis of data originating from a need to combine both qualitative and quantitative responses. Given triangulation's flexibility, it allows for a maximum appreciation of the findings of research. The use of triangulation augments the possibility of defining relevant

and cohesive findings, and allows for more indepth comparisons to be made between qualitative and quantitative results.

In this study, triangulation helped to facilitate both a qualitative and a quantitative analyses of the concerns of chemotherapy patients. The qualitative insights included the findings that each instrument provided a secondary emphasis of different categories as related to chemotherapy patients' concerns, while all agreed that health concerns were primary. It also brought out the fact that concerns within categories may be specific or general in nature. The quantitative approach not only enabled the qualitative differences to be recognized numerically, but provided for the observation that there was a pattern to the reporting of the concerns. Utilizing triangulation allowed the integration of the qualitative and quantitative findings. These comprehensive findings enabled a greater depth of understanding of the concerns of chemotherapy patients.

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Chapter 3

SUMMARY, LIMITATIONS, AND FURTHER RESEARCH

Summary

This study integrated an in-depth examination of the concerns of cancer chemotherapy patients with the methodology of multiple triangulation. Triangulation methodology provided a convenient medium by which to meaningfully interpret concerns of cancer chemotherapy patients. As well as providing a medium conducive to the examination of such concerns, triangulation also allowed for analyses of both the resulting qualitative and quantitative data.

As part of a longitudinal study at a large medical center, the analyses of data of the concerns from 40 cancer chemotherapy patients were undertaken. The sources were the COPE, the PCFCI, and the ICC instruments. While only one question from each of the former two tools was assessed for its qualitative value, all responses of the quantitative ICC were used for comparison.

The seven categories of the ICC offered a thorough and inclusive vehicle by which to measure the other two instrument's responses. The results incorporated both qualitative and quantitative interpretations and led to the following conclusions. Each instrument showed

the highest frequency in the health category. This only partially supported Dodd et al.'s (1990) results as in their study, the highest health frequencies were found with the COPE and the PCFCI instruments. This finding most likely differed from Dodd et al.'s (1990) results because this analysis used only a sample of their data.

The second highest frequency differed between all three instruments. The COPE's results brought out Work/Finance; the PCFCI showed a preponderance of concerns in both the categories of Family and Friends, while Self-Appraisal category came out with the ICC.

Out of the seven categories of concerns of the ICC, four agreed qualitatively across instruments. These were Work/Finance, Existentialism, Family, and Religion. That is, the concerns in the COPE and the PCFCI were specific enough to match the content of the ICC's items. Possibly the issues in both the Work/Finance and the Existentialism areas were defined sufficiently by the ICC's specific items to be identical with the qualitative responses of the COPE and the PCFCI.

Three categories did not agree across instruments as to qualitative content. This was due to concerns in Health, Family, and Self-Appraisal categories being more general with the COPE and the PCFCI than the quantitative ICC's items allowed.

Quantitative data were evaluated by the Chi Square (χ^2) analyses on the health responses across time. Two findings at the $p < .001$ level and one at the $p < .01$ level emphasized the significantly different distribution of health responses across time and instruments. Generally, the qualitative COPE had high numbers of the same health concerns reported over all the testing periods while both the PCFCI and the ICC showed this same concern with health over two of three sessions. Thus, the COPE differed significantly from the other two instruments because of its consistent recording of the same health concerns over the entire testing period of six months.

All three instruments dealt with health as the primary qualitative concern. The COPE, the PCFCI, and the ICC each had an additional strength in emphasizing specific types of secondary concerns. The COPE showed a high number of responses in the Work/Finance area. The PCFCI had a preponderance of Family and Friends concerns, while the ICC introduced a high number of concerns in the category of Self-Appraisal.

With respect to the overall results, these findings have the following ramifications. Aside from health concerns, when a research question exists about another category of concern, the appropriate instrument may be used to identify its existence. For example, when a researcher

is interested in self-appraisal concerns, it would be advantageous to use the ICC for specific information gathering in this area. If more general information is sought, then the PCFCI or the COPE may offer additional critical information. Another way the above information may be used is in anticipation of when the concern may be reported. If research is to be conducted on the constancy of health concerns across a cancer study, the COPE should be used with the understanding that this instrument would also provide general responses. Knowing when an issue may be reported and whether it will be general or specific in nature can be anticipatory of the choice of one versus another of these instruments.

Limitations

As with any research conducted using an innovative method, careful evaluation is appropriate in the interpretation of the results. This exploratory study arrived at some interesting findings relevant to the reporting of concerns of cancer chemotherapy patients. Limitations included a lack of structure or procedure to be followed. This lack of structure persevered until certain results became clear.

Other limitations were more troublesome and continued through the study. One limitation related to the design of the primary study. It is difficult to conclude the

instruments can be compared meaningfully when they in fact were administered at different times. Given the difficulty of multiple triangulation and its inherent methodological diversity, does the use of this nursing research methodology actually facilitate an understanding of the concerns of the cancer chemotherapy patient? It is clear that the results of this study show that there is more information than there was at the onset. It is also possible that these results could have been found by using an open-ended questionnaire and item checklist combination instead of the three instruments it did.

A second more engulfing limitation is the fact that eventually all data, even that labelled qualitative, was interpreted within a quantitative framework. With the 2232 datum items of this study, no other option was available. Ironically, it was necessary to convert most of the qualitative data to quantifiable numbers in order to obtain an overall synopsis of what transpired.

A third limitation needs to address a basic assumption of this research which is that the instruments ask the same question of the participants. Notwithstanding the potential of the chosen instruments to elicit similar concerns, the question exists as to whether the instruments enabled primary concerns to be isolated. Another question around this is whether the instruments differ, i.e., why

were there different concerns expressed across instruments?

In order to answer this question, consideration must be given to the questions posed by the three instruments. The COPE asked the chemotherapy patients, what concern has the highest priority for you? The PCFCI asked the patient and the family their most important problem for the family both within a family setting and within the context of having already discussed "some important problems or challenges." Lastly, it should be noted that these questions were contextually directed toward identifying the problems of the family.

The ICC asked the respondents to check the degree to which the 72 items were true for you in the context that they "are true to some extent for everyone."

Clearly different information was asked by the three instruments. The COPE responses were those which had the highest priority for the patient, and it is interesting that health concerns showed up consistently across the entire testing period with this instrument.

The PCFCI asked in a family setting about "some" problems faced by the family and then asked which one of these was the most important problem or challenge for the family. Perhaps if the most important problem had been asked at the onset, different results would have emerged. Hence, these results offered the most important problem

of "some problems" faced by the family in a family setting. It did not address the most important problem which the patient may have been dealing with singularly. Therefore, it is not surprising that the PCFCI had the largest numbers of responses within the Friends and Family category. Within the context of a family setting, these are expected results.

The ICC checklist asked for the degree of truth to 72 items. By nature of its format, no assumptions may be made as to which response was most true or less true. Unless the patients were told that the number of items checked in a particular category would lend interpretative validity to their most important concerns, the ICC measured degrees of truth of itemized concerns. In this case, quality does not equal quantity. What concerns were checked give no indication of the intensity of feeling around those issues, and with that in mind, the ICC serves presumably as an useful inventory of concerns which show equal meaning to the participant.

Perhaps a singular emphasis on the concerns which were most important should have been made at the onset of this study. Directions for each instrument except for the COPE would have changed accordingly. Directions for the PCFCI would have included starting with the question which addressed the most important issue or problem for the patient. The ICC's directions would have asked for

checks of the most important issues or problems listed as part of the 72 items. From the subsequent analyses, primary concerns relevant to chemotherapy patients may be better isolated.

A third limitation was that the COPE and the PCFCI responses were qualitative while the ICC was quantitative in nature. Since many of the responses were similar except for their origin, the difference between qualitative data and quantitative data in this case is a scale to which numbers can be attached. With this in mind, the concept of the dichotomous typology could have been done away with a long time ago had this idea be implemented particularly in paradigms similar to the one studied here.

Further Research

Further research is ongoing and is focused on the concerns of the families of chemotherapy patients. These concerns are relevant to the family's experience and will provide useful information which may alter the application of health care in this arena. Certainly the focus of primary concern is the patient and his/her cancer experience. But it is also very important that the caregivers' needs be identified and addressed during the process of the cancer experience.

Recommendations for further nursing studies include:

1. Nursing research on the concerns of chemotherapy

patients with the stated purpose of finding out the most important concerns or what the concerns are in general.

2. Determination of what manuevers undertaken by health professions provide the most emotional support to chemotherapy patients.

3. Identification of precise health concerns of chemotherapy patients, i.e., an extension of the findings of this study where many qualitative responses in the health category were generally described as cancer related.

4. Personality attributes of chemotherapy nurses compared to longevity of their chemotherapy patients.

5. The typology of families of cancer patients in relationship to the type of cancer.

6. Isolation of patterns of concerns in patients with different types of cancer.

7. Identification of the primary concerns of patients treated with radiation instead of chemotherapy.

8. The perserverance of primary concerns in cancer patients who have undergone radiation treatments in constrast to chemotherapy.

9. An examination of the concept of concerns versus the concept of problems by cancer chemotherapy patients, and

10. The advantages of undertaking a continuation of a cancer nursing study in contrast to initiating one.

Nursing research devoted to the concerns of chemotherapy patients based on this study offers new insights and new knowledge. The new insights and new knowledge came as result of the use of triangulation. Triangulation allowed for the concerns of chemotherapy patients to be examined in a depthful manner and added to the knowledge about cancer experiences. Hopefully, insights gained from this study by interested health care specialists will benefit cancer chemotherapy patients and their families by the provision of professionals who are knowledgeable about their concerns.

APPENDIX A

The Omega Coping Strategies Instrument (COPE)

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APPENDIX B

The Inventory of Current Concerns Instrument (ICC)

APPENDIX C

The Problem-Centered Family Coping Instrument (PCFCI)

APPENDIX D

Aims of The Original Project

Purpose. The purpose of this nursing study is two-fold:

- 1) to determine the coping strategies and self-care behaviors of cancer patients and their adult family members for a six month period during chemotherapy treatment and,
- 2) to compare responses of those receiving chemotherapy for the first time with those receiving chemotherapy for recurrence of cancer.

The specific aims of the study are:

1. To determine the coping strategies and self-care behavior initiated by the patient, each family member, and the family as a unit (patient and family members) for the side effects of treatment and other concerns over a six month period.
2. To compare coping and self-care behaviors in families (both individual members and family as a unit) and patients who are receiving their first series of chemotherapy treatments with families and patients who have recurrence of disease and are again receiving chemotherapy.
3. To compare coping and self-care behaviors in families and patients who have different types of cancer (breast, lung, colorectal, Gu/Gyn, or lymphoma).
4. To determine the influence of independent variables: interpersonal resources (social support, informal caregiver strain, dyadic adjustment and patient's role e.g., spouse, mother, father, or adult child) and intrapersonal resources (control, chemotherapy knowledge, concerns and functional status, affective state, and age) on patient's, each family member's, and the family units' coping strategies and self-care behaviors.
5. To compare the responses of families (individuals and unit) and patients who are receiving the first series of chemotherapy with that of families (individuals and unit) and patients who are receiving the second series of chemotherapy for recurrence on the independent variables: interpersonal resources (social support, informal caregiver strain, dyadic adjustment and role of patient), and intrapersonal resources (control, chemotherapy knowledge, concerns, functional status, affective state and age).
6. To determine if there are differences in coping strategies and self-care behaviors between patients and their family members.
7. To determine the association of the family unit's coping strategies with self-care behaviors.
8. To gain understanding of coping strategies and self-care behaviors which will provide a basis for nursing assessment, interventions and family research.

Dodd et al.'s (1990) Aims of The Study

APPENDIX E
Unabridged Results Section

Results

Prior to undertaking a comparison of how the results of the COPE, the PCFCI, and the ICC relate to each other qualitatively and across time, the findings of each tool were evaluated. Providing a stable framework, the quantitative ICC with its seven categories was used as the basis of classifying the qualitative data from both the COPE and the PCFCI instruments. The seven categories of the ICC were (a) Health, (b) Work/Finance, (c) Family, (d) Friends, (e) Existentialism, (f) Self-Appraisal, and (g) Religion.

Omega Coping Strategies (COPE)

The analyses of the COPE began by asking a very general question which was, of the 120 possible responses (40X3), which categories occurred the most frequently? Table 1 provides this information in descending order.

Health concerns were by far the most frequently reported of the seven possible categories. Of these health responses, all but eight of the 71 responses dealt with cancer related problems (getting well, health, being free of cancer). The eight answers which did not conform to this were other health issues existent at the time of the evaluation. These included entries such as a broken ankle, swollen arm, diet, flu, drinking, and Parkinson's Disease.

Table 1

Number of COPE Responses per ICC Category

CONCERNS	NUMBER	PERCENT
Health	71	59.2
Work/Finance	15	12.5
Family	11	9.2
Self-Appraisal	9	7.5
Existentialism	8	6.7
Religion	1	0.8
Friends	1	0.8
No answer	4	3.3
Total	120	100

Work/Finance, with a frequency of less than 25% that of Health, dealt with two central issues. These issues were either needing more money or were job-related such as being able to carry a full load at work again.

All Family concerns were straightforward. The respondents answered this question with reference to a certain family member such as a husband/wife, daughter, or mother with one exception. One person reported sexuality concerns.

Respondents chose the category of Self-Appraisal only 7.5% of the time. Self-Appraisal issues centered

on feelings of being ill or on personality attributes such as impatience or anxiousness.

Concerns of Existentialism were evidenced by reports dealing with the quality or meaning of life. Many of these statements were linked to a fear of recurrence, and in this sense, could have been added to the Health category, had this category not existed.

The last three entries of Table 1 are those categories with minute frequencies. These are Religion (closer to God), Friends (isolation), and finally, a category of No Answer which included four responses.

The next question asked of the 40 patients was, how many reported a concern in the same category over the three testing periods? That is, how many patients used the same category for all three measurements over the six months?

Of the 40 patients, 22 (55%) had a concern within the same category across the three measurements. Closer examination of these 22 individuals' responses showed that while three individuals focused on either money, family, or existentialistic issues, the majority or 19 of the 22 (86%) reported health concerns.

Of the possible 57 (19 X 3) responses from these 19 individuals, 44 (77.2%) statements related directly to having cancer. For example, the words cure

cancer, getting well, effects of "chemo" and health were frequently noted. The remaining 13 entries dealt with other facets of health such as queasiness, sore muscles, and Parkinson's disease.

Of the remaining 45% (18/40) who did not report similar concerns across the three time intervals, a majority (14 of 18) used the same category twice. These results were examined further to see if any category was reported more frequently, and to note any patterns. When similar categories were used, did they occur the first and second times (t1 and t2), the second and third times (t2 and t3), or the first and third times they were assessed (t1 and t3)?

None of the respondents reported the same categories at the t1 and t3 assessments. Instead two other distinct classes of respondents emerged. These were four patients who answered with the same category at t1 and t2, and the remaining 10 patients whose responses were similar in category at t2 and t3.

The former four individuals responded uniquely by using different categories, none of which was equivalent to any other person. The categories used were Existentialism, Family, Self-Appraisal, and Health. That is, each used one of the above categories for both t1 and t2, and reported a completely different concern for

t3.

The latter group numbering 10 had more diverse responses. One reported Self-Appraisal, one focused on Family matters, 3 were concerned with Work/Finance, and 5 gave Health responses. When the health concerns were examined in more depth, references were made both to cancer and to the side effects of chemotherapy with one exception. This was the report of a broken ankle both at t2 and t3.

Overall the COPE instrument offered considerable information about different concerns. When the responses from all the three sessions were coupled with those from two sessions (22 and 14), 90% (36/40) of the patients were shown to have two or more categorizations over the three measurements. Furthermore, of the 90%, 25 of these 36 individuals (69.4%) reported health concerns. These health concerns focused on cancer, the effects of chemotherapy, or getting rid of the cancer.

Problem-Centered Family Coping Interview (PCFCI)

When the PCFCI was evaluated for the possible categorization of the 120 responses by the 40 patients, the concerns were better distributed across six areas. No one chose Religion as a concern, and there were five No Answers. See Table 2.

Similarly to the COPE data, the constituents

Table 2

Number of PCFCI Responses by ICC Category

CONCERN	NUMBER	PERCENTAGE
Health	57	47.5
Family	17	14.2
Friends	15	12.5
Work/Finance	9	7.5
Existentialism	6	5.0
Self-Appraisal	10	8.3
Religion	0	0
No Answer	<u>6</u>	<u>5.0</u>
	120	100

of each category was examined in more depth. In the Health category, all but seven comments related to the cancer or chemotherapy process. The seven which did not relate to the cancer experience were other health issues such as diet, drinking, broken ankle, and flu.

Within the category of Work/Finance, the most common response dealt with money problems. In addition a small number (33.3%) was concerned with work-related issues such as being able to work with a swollen arm.

Family and Friends, as categories, were seen in higher frequencies than in the COPE's results. This

was due to many patients' reports of relocating.

Entries in both the Existential and Self Appraisal categories were similar to those noted with the COPE's results. Existential concerns were those of meaning and perspective, while Self-Appraisal issues were those of personality attributes such as mood swings.

The second question asked of the PCFCI data was, how many reported a concern in the same category over the three testing periods? Only 8 of the 40 respondents (20%) used similar concerns across all the testing sessions. Of these 8, 5 responses were concerned with health, 2 with friends and one with family issues.

Of the remaining 32 patients, 23 patients reported concerns over two testing periods. Most frequently these similarities extended over the first two times of measurement (t1 and t2) in contrast to either t1 and t3, or t1 and t3. See Table 3 for the categorization of responses. Of the 4 groups shown in Table 3, 20 out of the 31 respondents dealt with health concerns all three periods or over two of the three testing sessions.

The nine individuals who did not fall into the above framework distinguished themselves by not having any similar categories of concerns across two or three measurements. Furthermore none reported the same

categories as another person.

Table 3

Categorization of PCFCI Responses By Sessions

CONCERNS	t1,t2,t3	t1&t2	t2&t3	t1&t3
Health (20)	5	7	4	4
Friends (4)	2		2	
Family (4)	1	1		2
Finances (1)				1
Self-Appraisal(2)		1	1	
TOTAL (31)	8	9	7	7

Of these dissimilar responses, Health was the most frequently noted as it occurred 29.6% of the time. This was followed by Work/Finance (14.8%), Friends (11.1%), Family (11.1%), Self-Appraisal (11.1%), no answer (11.1%), and Existentialism (7.4%). The second most frequent concern Work/Finance was noted in four responses. The word finance was used to describe this category in 75% (3/4) of the reports.

Overall the results of the PCFCI were varied. While the major focus was health issues, the frequencies were not as high as those seen with the COPE tool. Additionally, a higher number of responses occurred in both the Family and Friends categories with the PCFCI.

Inventory of Current Concerns (ICC)

The results of the tabulation of the ICC into its seven categories are given in Table 4. Health concerns generally dominated the responses. When this category was coupled with Self-Appraisal, these two areas of concern accounted for 47% of all the ICC responses.

Further item analysis of each category was then undertaken to determine the response with the highest

Table 4

Categorical Responses of The ICC

CATEGORY	NUMBER	PERCENT
Health	488	24.0
Self Appraisal	458	22.5
Family	303	14.9
Existentialism	229	11.3
Work/Finance	207	10.2
Religion	177	8.7
Friends	<u>170</u>	<u>8.4</u>
	2032	100.0

frequency (H) and the lowest frequency (L). This information is presented below along with the respective items from the ICC instrument.

Health: (80H) "I am concerned about feeling tired most

of the time."

(16L) "I wish that I wasn't losing weight."

Self-Appraisal: (58H) "I would feel better if I was able to do more things for myself."

(14L) "I am afraid that I will be thought a bad person."

Family: (52H) "I wish that I wasn't so dependent on my family."

(4L) "I am afraid that my marriage is breaking apart."

Work/Finance: (54H) "I wish that I could work regularly."

(27L) "I am afraid that I'm not doing my job well."

Existentialism: (82H) "I am concerned about the future."

(71L) "I am afraid that I face an uncertain future."

Religion: (51H) "I am concerned about being more religious."

(7L) "I am losing my earlier religious faith,"
and lastly,

Friends: (50H) "I wish that I could see more of my friends."

(7L) "I am concerned about having to move away from my friends."

The data from the ICC was next evaluated to find how many individuals reported similar concerns over all three testing sessions, and if so, to note which categories were highest in frequency. Examination of the data revealed that 30% (12/40) individuals reported the same

primary category over the testing sessions. Out of these 12, five (41.7%) focused on Health issues. Virtually every patient using this category chose items dealing with fatigue and sleep. Pain, getting about better, and the effects of chemotherapy were also reported frequently.

As with the COPE and the PCFCI, the responses were next tabulated to note how many individuals used the

Table 5

ICC Responses by Category Across Sessions

PRIMARY CONCERN	t1t2t3	t1t2	t2t3	t1t3	TOTAL
Health	5	3	4	2	14
Self-Appraisal	4		4	5	13
Work/Finance	1		1	1	3
Family	1		1		3
Friends		1			1
Existential	1				1
Religion			1		1
No Pattern					5
TOTAL (40)	12	4	11	8	

same categories over two testing periods. Of the remaining 28 patients, five had no pattern of using the same category over two measurement, while 22 did. Table 5 presents this data.

The ICC showed both the Health category and the

Self-Appraisal category as inclusive of the majority of primary concerns overall. Self-Appraisal concerns were prominent both in the t2 & t3 sessions and the t1 & t3 sessions, while Health issues emerged over all times.

A Comparison of The Three Instruments

When the COPE's responses were compared to the items checked on the ICC, the largest category to emerge was that of Health. Of the 71 COPE responses, only two related to items on the ICC qualitatively. These two items were checked a total of six times, emphasizing a noteworthy dissimilarity. Table 6 offers the total number of times a response from the COPE fit into one of the seven ICC categories. This table also includes the qualitative themes exemplified by the COPE's responses and compares this to the items with highest frequency of the ICC in the same category.

The categories of Health, Family, and Self- Appraisal qualitatively did not agree between these two instruments. The concerns of the Health category were much more global in their context when employed in the COPE than in the ICC. Reports of difficulty sleeping, pain, fatigue, and ability to get around typified the ICC responses while those reported via the COPE were more broad in perspective. Such responses were given as Cancer or Health, etc. Similarly, the other two categories which seemingly were

Table 6

The Most Frequent Responses of The COPE And The ICC

HEALTH (71)

COPE: "Health"; "Cancer"

ICC: "Tired"; "Having lengthy treatments"

WORK/FINANCE (15)

COPE: "Money"; "Adjusting to job"

ICC: "Needing financial help"; "Could work regularly"

FAMILY (11)

COPE: Relationship to a family member

ICC: "Be self sufficient"; "Sexual needs not met"

SELF APPRAISAL (9)

COPE: "Centering"; "Feeling secure"

ICC: "Feel anxious and restless"; "Do more myself"

EXISTENTIAL (8)

COPE: "Survival"; "Recurrence and dying"

ICC: "How long I might live"; "The future"

FRIENDS (1)

COPE: "Isolation"; "A place to live"

ICC: "Could see my friends"; "Ask for help"

RELIGION (1)

COPE: "To get closer to God"

ICC: "Be more religious"

alike in area of concern differed in their substance.

Family issues in the COPE responses dealt with precise problems the patient was experiencing with a family member, be it with a daughter, husband, wife, partner, or child. The ICC responses, on the other hand, dealt with dependency issues and sexuality (albeit in low numbers).

Self-Appraisal, as the third category which varied from the ICC content appraisal, also focused on more global issues. In this context, descriptors such as being secure or personality attributes existed in contrast to the ICC's more specific restless feelings. Concerns of Self-Appraisal combined with the other two categories which differed from the ICC results accounted for 77.7% of the COPE's answers.

The 20.5% (24/117) of the responses of the three categories which agreed qualitatively with the ICC's concerns were housed within the Work/Finance, the Existential, and the Religion categories. All three showed a close alliance between the COPE and ICC's responses.

Similar to the comparison between the COPE and the ICC, the PCFCI, when compared to the ICC, exhibited a high number of responses within the health category. The health concerns gleaned from the PCFCI were individual in nature. Of the 57 responses in this category, 45.6% (26) related to specific changes such as not feeling

good, spread, voices, pain, and arm swelling. Health concerns which referenced chemotherapy numbered 23 (40.3%), and a third group reported concepts such as health or cancer.

Following the health responses, familial entries were second in frequency. Of these 17, 11 or 64.7% focused on a specific family member such as daughter, mother, or spouse. The remaining six (35.3%) dealt with a generalized reference to the family unit (our relationship), or to family functions (getting ready for Thanksgiving).

The category of Friends was next highest in frequency as 15 individuals considered this the most important problem area. The majority of responses in this category were concerned with a move to another house (seven or 46.7%). Acknowledgement of a friend's illness or death also occurred in five responses, while the three remaining were divided between a wedding, a conflict, or not having friends around them.

The Self-Appraisal category was represented by ten individuals who focused on personality attributes. While individual in nature, they all exemplified a particular element or personal characteristic which the person acknowledged was causing difficulty. These included descriptors such as self-worth, coming apart, and

a restoration to their former self.

Work/Finance's nine concerns centered on either money or work. Six Existential concerns related to the future, adjustment, or control, while none were reported in the Religion category.

Overview

Qualitatively, the COPE's responses were concentrated in two areas, Health and Work/Finance. Of the 40 participants, the majority indicated that health concerns about cancer were the main priority. Another small group was concerned about their work or financial condition. Both the Health group and the Work group had a concern either across all testing session or for two of the three sessions.

The PCFCI's responses were largely focused on health issues as well. As with the COPE, most of these responses were global in nature (cancer or health), with a few individualistic entries (broken ankle). Additionally, there were a high number of entries in both the Family and Friend's category with the PCFCI. See Table 7 for the total numbers and percentages of each category for the three instruments across the testing sessions.

Both Health and Self-Appraisal responses occurred in higher frequency with the ICC than the PCFCI. Qualitatively, neither category of concerns of the ICC

Table 7

Number of Responses and Percentages per Instrument
for The Three Testing Sessions

CATEGORIES	COPE		PCFCI		ICC	
	#	%	#	%	#	%
Health	71	59.2	57	47.5	488	24
Work/Finance	15	12.2	9	7.5	207	10.2
Family	11	9.2	17	14.5	303	14.9
Existentialism	8	6.7	6	5	229	11.3
Self-Appraisal	9	7.5	10	8.3	483	22.5
Friends	1	0.8	15	12.5	170	8.4
Religion	1	0.8	0	0	177	8.7
No Answer	4	3.3	6	5.0	0	0
TOTAL	120	100	120	100	2032	100

resembled the PCFCI's findings. The ICC's items were more specific than the global counterparts of both the COPE and the PCFCI. The PCFCI did resemble the ICC in its distribution of frequencies in the Health category across time.

Examination of the pattern of distribution between the three instruments was undertaken on the Health responses because of their high frequencies. No other category allowed this comparison due to their low numbers.

Table 8

Number of Individuals Who Reported Health Concerns
across Testing Sessions

	t1t2t3	t1t2	t2t3	t1t3	Total
COPE	19	1	5	0	25
PCFCI	5	7	4	4	20
ICC	5	3	4	2	14

Table 8 presents the number of individuals with responses in the health concerns for all three instruments with their distribution across time. Given that each instrument had a different pattern of health responses, a Chi Square (X^2) analysis was undertaken between the frequencies of these individuals with the COPE, the PCFCI, and the ICC to assess the degree of association (Robson, 1973).

The analysis between the three instruments was highly significant as $X^2 (2, n = 59) = 15.17, p < .001$. This finding indicates the three instruments differed in their pattern of reports of health concerns over the testing sessions. To examine this in more depth, further Chi Square analyses compared the health frequencies of the individual instruments across time. Chi Square analyses occurred between the COPE and the ICC, between the PCFCI and the ICC, and lastly, between the COPE and the PCFCI.

The COPE and the ICC analysis was significant; χ^2 (1, n = 39) = 7.32, $p < .01$. Clearly, the COPE had a higher number of individuals who reported health concerns across all three sessions compared to the number of individuals who used the ICC to report the same health concern in two of the three sessions.

The association between the PCFCI and the ICC was not greater than can be expected by chance; χ^2 (1, n = 34) = 0.82, $p > .05$. The distributions of reported health concerns between the PCFCI and the ICC were not dissimilar enough across testing sessions to warrant significance.

The final analysis between the COPE and the PCFCI was highly significant; χ^2 (1, n = 45) = 11.73, $p < .001$. Examination of Table 3 reveals a large number of responses occurred across all three sessions (t1t2t3) with the COPE unlike the PCFCI's pattern. The PCFCI's responses were evenly distributed across all sessions.

The Chi Square analyses showed the three tools differed both qualitatively and quantitatively in the treatment of health concerns. Not only did different foci of concerns enter with the three instruments, but the distribution of individuals reporting health responses over time was also notable.

APPENDIX F

Human Subjects-Institutional Review Board Approval

A campus of The California State University

Office of the Academic Vice President • Associate Academic Vice President • Graduate Studies and Research
One Washington Square • San Jose, California 95192-0025 • 408/924-2480

To: Lucianne Cronin, Nursing
4271 North First Street #52
San Jose, CA 95134

From: Serena W. Stanford *Serena W. Stanford*
AAVP, Graduate Studies and Research

Date: March 27, 1992

The Human Subjects-Institutional Review Board has reviewed and approved your request for exemption from Human Subjects Review for the proposed study entitled:

"Chemotherapy Patients' Concerns: An Application of
Multiple Triangulation Methodology"

You may proceed with this study without further review by the Human Subjects-Institutional Review Board.

I do caution you, however, that Federal and State statutes and University policy require investigators conducting research under exempt categories to be knowledgeable of and comply with Federal and State regulations for the protection of human subjects in research. This includes providing necessary information to enable people to make an informed decision regarding participation in your study. Further, whenever people participate in your research as human subjects, they should be appropriately protected from risk. This includes the protection of the confidentiality of all data that may be collected from the subjects. If at any time a subject becomes injured or complains of injury, you must notify Dr. Serena Stanford immediately. Injury includes but is not limited to bodily harm, psychological trauma and release of potentially damaging personal information.

Please also be advised when people participate in your research as human subjects, each subject needs to be fully informed and aware that their participation in your research project is voluntary, and that he or she may withdraw from the project at any time. Further, a subject's participation, refusal to participate or withdrawal will not affect any services the subject is receiving or will receive at the institution in which the research is being conducted.

If you have questions, please contact me at 408-924-2480.

CC: Emilie Musci, Ph.D.

APPENDIX G
Consent Form

(Patient)

COPING & SELF-CARE OF CANCER FAMILIES: NURSE PROSPECTUS
EXPERIMENTAL SUBJECT'S BILL OF RIGHTS

Persons who participate in a medical experiment are entitled to certain rights. These rights include, but are not limited to, the subject's right to: be informed of the nature and purpose of the experiment; be given an explanation of the procedures to be followed in the medical experiment, and any drug or device to be utilized; be given a description of any attendant discomforts and risks reasonably to be expected; be given an explanation of any benefits to the subject reasonably to be expected, if applicable; be given a disclosure of any appropriate alternatives, drugs, or devices that might be advantageous to the subject, their relative risks and benefits; be informed of the avenues of medical treatment, if any, available to the subject after the experiment if complications should arise; be given an opportunity to ask any questions concerning the experiment or the procedures involved; be instructed that consent to participate in the medical experiment may be withdrawn at any time and the subject may discontinue participation without prejudice; be given a copy of the signed and dated consent form; and be given the opportunity to decide to consent or not to consent to a medical experiment without the intervention of any element of force, fraud, deceit, duress, coercion, or undue influence on the subject's decision.

INFORMED CONSENT

You are invited to participate in a study examining coping strategies and self-care behaviors of patients and their family members during cancer chemotherapy treatment. We hope to learn how patients and families cope with and manage side-effects of chemotherapy and other concerns they have during this time. You were selected as a possible participant in this study because you are a patient receiving chemotherapy treatment for cancer.

If you decide to participate, one of the investigators or their associates will meet with you to help you answer several questionnaires which will take approximately 90 minutes. You can complete them at one time, or at additional times if you prefer. These meetings will take place in your home, or if you prefer, in another location mutually convenient for you and the researcher. In addition, you will be asked to keep a log (diary) of side effects from chemotherapy, and the actions you perform to lessen the side effects. You will also note the ways you manage other concerns which arise during this period. Each of these activities will be repeated three to five times over the next six months. You will also be asked to identify adult members of your family (over age 18) whom the

researcher may ask to participate in the study. Your medical record will also be reviewed to obtain information for this study.

There are no known risks from participating from this study other than a possible loss of privacy. There are no expected discomforts associated with this study, other than the possibility that you might become uncomfortable or upset by some of the interview questions. The disadvantages that you may experience while participating in this study include the inconvenience of keeping a log of symptoms and concerns. If you are sensitive to any of the interview questions, you do not have to answer them. If you agree to participate in this study, you will be able to call and talk with any of the investigators about your health status. If you complete your log, at the end of the study your family will receive \$100.00 as monetary compensation for participating. There may be no other direct benefit to you from participating in this study although the information obtained may help your physician in managing your treatment. You may enjoy the several follow-up contacts by the nurse researcher over the six months. **WE CANNOT AND DO NOT GUARANTEE OR PROMISE THAT YOU WILL RECEIVE ANY BENEFITS FROM THIS STUDY.**

Any data under the investigator's control will be disclosed in a manner that does not reveal your identity. Any data that may be published in scientific journals will not reveal the identity of the subjects. In the interest of public safety, patient information will be provided to Federal and regulatory agencies as required.

Your decision whether or not to participate will not prejudice you or your medical care. If you decide to participate, you are free to withdraw your consent and to discontinue participation at any time without prejudice to you or effect on your medical care.

If you have any questions, we expect you to ask us. If you have any additional questions later, Dr. Marilyn J. Dodd at (415) 476-4320 or Mary L. Thomas at (415) 476-9398, will be happy to answer them.

All forms of medical diagnosis and treatment -- whether routine or experimental -- involve some risk of injury. In spite of all precautions, you might be injured as a result of participating in this study. If physical injury results from this study, the investigators will assist you in obtaining appropriate medical treatment. The financial cost for this care will rest with you and any medical insurance you have, unless the treatment is necessary due solely to the negligence of Stanford University or Stanford Hospital. For further information, please call (415) 723-5244 or write the Medical Center for the Protection of Human Subjects at 703 Welch Road, Suite G-1, Palo Alto, California, 94304. In addition, if you are not satisfied with the manner in which this study is being conducted, you may report any complaints to the same telephone number and address.

YOUR SIGNATURE INDICATES THAT YOU HAVE READ AND UNDERSTAND THE ABOVE INFORMATION, THAT YOU HAVE DISCUSSED THIS STUDY WITH THE PRINCIPAL INVESTIGATOR OR HIS/HER STAFF, AND THAT YOU HAVE DECIDED TO PARTICIPATE BASED ON THE INFORMATION PROVIDED. A COPY OF THIS FORM IS AVAILABLE TO YOU UPON REQUEST.

Signature

Date

Investigator or witness