Jauernig's Conceptual Framework

for the Concept 'Force Fluids'

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Submitted to the School of
Nursing and the Faculty of the
Graduate School of the University
of Kansas in partial fulfillment of
the requirements for the degree
of Master of Nursing.

May 16, 1984
Date Thesis Accepted

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Abstract

Force fluids is a commonly used term in nursing and a required nursing intervention for multiple clients. Yet, it lacks an operational definition.

The purpose of this study was to operationally define the concept 'force fluids'. A three phase survey method was used. In Phase I, two National League of Nursing accredited schools were chosen randomly for each state and Washington, D.C. In Phase II, the Object Content Test (OCT) and a demographic data sheet were sent to the 102 undergraduate medical-surgical coordinators of the schools chosen. The two instruments were returned by 98 of the coordinators. Data were analyzed using the process of content analysis. The responses were clustered into 5 categories: antecedent conditions, assessment factors, operational definitions, plan of actions, and outcome criteria. Three nurse experts validated the assignment of responses to the categories.

Major findings from this phase were: a) responses ranged from extremely vague to those that defined the concept in operational terms, b) the majority of the responses related to assessment factors and nursing actions, c) some responses contained inaccurate information, d) only 16 appropriate statements that fit the criteria for an operational definition were documented, and e) the responses were substantial enough to write a beginning conceptual framework for the concept.

Phase III was designed to arrive at a consensus about the responses assigned to the categories. A selected category sheet designed from the responses was sent to the 98 subjects who had participated in Phase II. The participants were asked to check the responses they believed were most appropriate for each part of the conceptual framework. Appropriate factors checked most frequently plus additional factors from the literature were used to write a refined conceptual framework for the concept.

Overall, the study revealed the fact that this concept was well established in nursing, and used as a nursing care intervention without a set of parameters to measure the outcome. Establishing a set of defined measurable parameters through a schematic diagram and a conceptual framework for the concept will provide consistency in use of this term.

Acknowledgements

For her wisdom, guidance, and patience, I wish to thank my advisor, Virginia L. Cassmeyer, R.N., M.S.N., for her help and support during the course of this investigation. Appreciation is also extended to the other members of my thesis committee: Betty L. Hopping, R.N., Ed.D.; Nancy R. Lackey, R.N., Ph.D., and Barbara J. Lease, Ph.D. Their patience, guidance, and support throughout this study was timely and generous.

Appreciation is extended to the deans of each school involved in the study for their cooperation in asking their undergraduate medical-surgical nursing coordinators to participate in the study. A special thanks to those nurse educators who participated for their overwhelming interest and response to my study.

My special thanks to the senior citizens of Marian Hall Retirement Home in Kansas City, Kansas, under the management of Sister Bernard Ann Hinkle, M.S.G., and to Ida McMurray of Mid-City Towers, Kansas City, Missouri, who generously addressed the hundreds of mailing envelopes needed for the study.

To Debbie Holder, R.P.A., for her expertise in proofreading my material.

To the first grade class of Blessed Sacarament School, Kansas City, Kansas and Sister Anna Mary Lawrence, their teacher and my first grade teacher who prayerfully supported me this year.

Finally, to the Sisters of Charity of Leavenworth for their faith and prayerful support of me and their understanding throughout this project.

CHAPTER I

INTRODUCTION

Statement of the Problem

To date, no studies have been published which explore the factors which effect an operational definition of 'force fluids'. The phrase 'force fluids' is a household word among doctors' order sheets and nursing care plans. This researcher questions what type of platform the phrase 'force fluids' substantiated to have gained such a high vote of confidence among the best medical and nursing practitioners in the profession. Over the past ten years in clinical nursing practice from the emergency room to medical-surgical units including pediatrics, this researcher has yet to see this phrase prescribed with some guidelines that could be measured, indicating the order had been carried out. In other words, this concept of 'force fluids' that tops the list of ambiguous terms in nursing, with much esteem and respect, got there without a job description or in nursing terms, an operational definition.

The nursing profession operates under the mantle of many terms that for the most part are poorly defined. Bloch (1974) identified certain terminology that, as she stated, "by their inexactness, represents a semantic jungle" (p. 689). Vincent (1975) in a follow up study to Bloch (1974), wondered if we are to be "more concerned with 'poorly defined terms in nursing' or with the lack of agreement as to the terms' meaning and consistency in their usage" (p. 46). In the classic, Through the Looking Glass by Carroll (1951), Humpty Dumpty

said to Alice: "When I use a word, it means just what I choose it to mean--neither more or less". To which Alice replied, "The question is whether you can make words mean so many different things" (p. 151). One could go along with Humpty Dumpty and make words mean many different things, but Bloch (1974) and Vincent (1975) and this researcher suggest that we go with Alice and question crucial terminology in nursing practice and find operational definitions that can be measured.

Nurses are expected to evaluate health conditions of persons under their charge, but according to Hardy (1973), little thought has been given to evaluate the soundness of the theory or concepts which guide their actions. If nurses intend to direct their own actions in a responsible manner, they must operate from a well developed knowledge base, and make informed judgements that stem from a body of knowledge where operational definitions are a foundation. Lack of clarity in poorly defined terms in nursing--that are used in legal documents such as the nurses' progress notes should be of great concern. This concern has become the acute stimulus for this researcher to address the nursing concept of 'force fluids' as a term that is at the very heart of nursing with the potential of negligence and malpractice because it is lacking an operational definition.

An operational definition according to Hardy (1973), tells how the concept is linked to a concrete situation in a way that the concept can be measured, and the validity of the concept can be assessed. A review of the literature in search for an operational definition of 'force fluids' with these attributes mentioned was

almost fruitless. Burgess (1978) in her text, Nursing: Levels of Health Interventions, gave some parameters in her statement that "force fluids refers to continual encouragement and use of ingenuity on the part of the nurse to increase the patient's fluid intake. . .do not in any case attempt to forcibly administer liquids" (p. 551). Likewise, Mitchell and Loustau (1981) defined this concept by stating that, "force fluids does not mean literally to subdue patients and make them drink. . .it means to increase oral fluids to a specified amount" (p. 477). Both authors use the term 'force' but do not wish that it be used literally. Such phrases as "continual encouragement", "use of ingenuity", and to "increase oral intake to a specified amount", could be used in an operational definition of 'force fluids'. What is seriously lacking in these definitions are the measurable components that validate the concept.

Nurses are legally responsible for their actions. By law, under most Nurse Practice Acts, there is an intimate connection between nursing care performed and the patients' welfare. When a term or phrase is not operationally defined in measureable terms, where does the nurse get the information for documentation in the nurse's progress notes? It has been this researcher's experience that the concept of 'force fluids' is vaguely defined at best, generally meaning to 'increase oral intake'. Because of ambiguity, there are no universal parameters of measureable criteria about the concept to document when the order has been carried out. Secondly and equally important, is the use of the word 'force'. By definition (Webster, 1966), it is synonymous with 'violence', 'compulsion', and

'coercion', to mention only a few. Forcing or coercing someone to do anything against their will is a violation of the Assault and Battery Medical-Moral Code, the standards of nursing practice and the patient's rights to refuse care. The nurse could be legally responsible for such a violation if the patient/client were injured.

With nurses expanding their roles into broader and more independent clinical specializations, it seems important that terms used should be operationally defined, not only to measure the expected outcome, but also to legally defend one's actions. Questions that can be asked regarding this concept are: "What is an operational definition of 'force fluids', and then, "What action should be taken to alter nursing instruction to incorporate this definition into responsible nursing diagnoses and interventions".

Purpose of the Investigation

The purpose of this study was to operationally define the concept of 'force fluids'. It was assumed that this research would demonstrate that nurses often use the term 'force fluids' as a nursing order without a set of defined parameters outlined to indicate that the order has been carried out.

The Research Questions

The research questions explored in this study were: "What is an operational definition of the concept 'force fluids'?" It can be more fully stated as, "What are the definitions of 'force fluids' as conceptualized by medical-surgical nurse educators across the United States who work with nurses in a clinical setting", "What congruence or discrepancy exists among these definitions?", and "Can a universal

operational definition be derived from the conceptualization of nurse educators".

Theoretical Framework

For the purpose of this investigation, two principles were considered and are discussed: the principle of homeostasis or dynamic equilibrium (which this researcher used interchangeably), and the principle encompassing the defining of a concept operationally. These principles formed the premise upon which this study was based.

Homeostasis or Dynamic Equilibrium

The term homeostasis is one of the most important terms in physiology. It comes from two Greek words--'homoios', meaning the same, and 'stasis', meaning standing (Webster, 1966). "Standing or staying the same", then, is the literal meaning of the word. Bernard (1927), the 19th century physiologist, coined the expression, "constancy of the internal environment is the condition of life". The American physiologist, Cannon (1939), first used the word homeo--referring to the system of checks and balances which maintain internal consistency as "the wisdom of the body".

Among studies that investigated the principle of homeostasis, Deane (1966), Mikal (1967), Burgess (1978, 1979), Mitchell and Loustau (1981), and Talbner (1981) all agreed that the body functions as an integrated whole to the end that life is maintained in a state of homeostasis or dynamic equilibrium. They have defined these terms basically as meaning that a stable composition of the elements which are necessary for life are present in the body in a state of constant change; incessant movement, replacement, chemical transformation, and

excretion. The presence of essential elements constantly changing and interchanging creates and sustains an environment in which the body cells live. This environment both inside and outside the cell must have sufficient water to promote a balanced state. In normal health, Tablner (1981), defined fluid balance as 'water taken in equals water lost' and this is dependent, in part, on the homeostatic mechanisms. This concept of forced or encouraged fluids as used in this study is synonymous with Pfaff's (1968) fluid therapy principle; to maintain optimum volume and concentration of body fluid constituents so as to place the patient/client in the midpoint of normal range or homeostasis.

Derangements in fluid and/or its constituents impair the normal function of the body, resulting in physical changes. The physical changes observable in clients such as edema, fever, increased heart rate, decreased sensation, decreased urinary output, confusion, or decreased respirations all create problems for the patient which the nurse seeks to prevent, or identify and modify to promote the physical and mental well-being of the patient. There are many etiological factors found to be the cause of fluid and electrolyte derangement, among which Burgess (1979) concluded that inadequate intake was the most common.

Operationally Defining a Concept

A concept is an abstract idea expressed in words, a generalization from observed events which may range from a single word to several sentences to entire paragraphs (Fawcett, 1979). Krampitz and Pavlovien (1981) enlarged upon this definition and

defined a concept as a general term that expresses the presumed central idea behind a set of related particulars. Other researchers, Chinn and Jacobs (1978), and Hardy (1973), referred to concepts as complex ideas underlying and determining the direction of inquiry. The process of defining a concept is hampered by the dilemma of trying to achieve consistency in meaning. Chinn and Jacobs (1978) suggested that this required abandoning the notion that one understands what she or he thinks. When ideas are examined in terms of formulating an operational definition of a concept, the reality that reflects new ideas and the ramifications of choosing one reality over another are better understood.

Fawcett (1979) defined concepts constitutively and operationally. The constitutive definition, also referred to as the rational approach or the nominal definition, provides meaning for a concept by defining it in terms of other concepts; it is a circular definition. The operational definition, in contrast, gives concepts empirical utility by linking them with the real world. It defines the concept in terms of observable data, i.e., the activities necessary to measure the concept or manipulate it.

Hardy (1973) postulated that concepts may have both a theoretical definition and an operational definition. The theoretical definition gives meaning to the terms in context of the theory and permits any reader to assess the validity of the definition. The operational definition tells us how the concept is being linked to a concrete situation. The operational definition assigns a set of physical procedures which must be carried out in

order to assign to every case a value for the concept. Operational definitions permit the validity of concepts to be assessed.

For this study, an attempt was made to connect the principle of homeostasis to an operational definition of 'force fluids'. When the nurse receives an order to 'force fluids', he/she will understand the principle behind the order and his/her actions will be such that, the fluid therapy provided will be consistent and measurable. The conceptual definition of 'force fluids' used in this study is defined as "to increase oral fluids to a specified amount".

Definition of Terms

Terms that appear in this study that make up its framework were defined as follows.

1. Concept - an idea of what a thing should be, generalizations about particulars such as cause-effect, dimension, duration, and attributes of phenomena or objects.

2. Homeostasis or dynamic equilibrium - the tendency of an organism to maintain within itself relatively stable conditions as of temperature or chemical composition by means of its own regulatory mechanisms.

3. 'Force fluids' - to increase the oral intake of an adult by a specified amount.

4. Operational definition - statements where a method of measurement is clearly articulated.

5. Antecedent condition - conditions that occur prior to or must be present to warrant a nursing/physician order to 'force fluids'.

6. Assessment factors - objective and subjective data or criteria necessary to formulate a plan of care that rationalizes an order to 'force fluids', or nursing assessment necessary once the order to 'force fluids' has been instituted.

7. Plan of action - nursing interventions or statements that should be incorporated in a patient care contract (care plan) once an order to 'force fluids' was established.

8. Outcome criteria - those observable measures by which one will know if the objectives and goals have been accomplished. This criteria forms the basis for evaluating the success of the plan of care and whether the interventions were relative to alleviate the problem (antecedent condition). Outcome criteria can be both positive and negative as they are the consequences or incidents which occur as a result of the concept.

9. Conceptual framework - a device for organizing ideas and in turn, bring order to related objects, observations, events, and experiences.

10. Patient care contract - a mutual agreement of the nurse and client that: a) clarifies the roles and responsibilities of the client, b) identified the roles and responsibilities of the nurse, c) assists in establishing mutually agreed upon roles and responsibilities, and d) assigns appropriate level(s) of client self-care by identifying the client's placement on the self-care continuum.

11. Schematic model - a systematic arrangement of the words pertinent to the conceptual framework of the concept 'force fluids'.

12. Adult client - an adult person who requires nursing interventions to prevent fluid deficits. The average adult as identified in this study has a body weight of 115-165 pounds for women and 135-195 pounds for men. In this study, 'patient' and 'client' are used interchangeably.

Assumptions of the Investigation

That there are in general, a number of adult clients/patients in various states of illness with a diagnosis that will warrent a medical or nursing order to 'force fluids'.

CHAPTER II

REVIEW OF THE LITERATURE

A critical review of the literature reveals man's desire for knowledge of fluid phenomena began with prehistoric man and his problems of water supply, irrigation, navigation, and water power. With only a rudimentary appreciation of his needs, archeology has revealed that the groupings of man can be traced by their basic habits. There were the hunters and gatherers who migrated seasonally with crops and animal migration. The sedentary man learned to survive off the land and moved infrequently. Both had one thing in common, and that was a water source as their basic means of survival. The prehistoric concept of 'fluid' or water must have been a primitive concept meaning one thing: survival.

Prehistoric man's contact with fluids according to Olsen (1973), was confined largely to the air he breathed and the water he drank and swam in. Later, he made use of hydrostatic principles not only in swimming but in making rafts, and he learned to use dynamic principles of fluid motion (or motion in a fluid) when he developed crude boats or canoes. With only a rudimentary appreciation for the physics of fluid flow, man made holes in the earth to preserve rain, dug wells, constructed irrigation ditches and canals, operated crude water wheels and pumping devices, and, according to Vennara (1961), as his cities increased in size, constructed even larger aqueducts, which reached their greatest size and grandeur in the city of Rome. However, as

Vennara (1961) pointed out, with the exception of the thoughts of Archimedes (287-212 B.C.) on the principles of buoyancy, little of the scant knowledge of the ancients appears in modern fluid mechanics. After the fall of the Roman Empire (A.D. 476), there is no record of progress in fluid mechanics until the time of Leonardo da Vinci (1452-1519) as reported by Vennara. This great genius designed and built the first chambered canal lock near Milan and ushered in a new era in hydraulic engineering. Down through da Vinci's time, concepts of fluid motion must be considered to be more art than science.

Throughout history man has demonstrated his interest in fluids. Although there was some experimentation with fluid flow during the middle ages, the next really significant event according to Sebersky (1964) in the development of fluid mechanics did not occur until the 17th century when Newton stated his famous laws of motion. Sebersky proposed that fluid resistance as Newton defined it is proportional to what modern science calls velocity gradient. The mathematical science of fluid mechanics claims that the theory of hydrodynamics was demonstrated before the beginning of the 20th century. Vennara (1961) stated that in the broad sense, experimental hydraulics became a study of the flow phenomenon occuring in orifices, pipes, and open channels. Physiologists in their concern with fluid mechanics have linked the practice of medicine to this fluid flow theory by realizing that the heart is a pump which pumps a fluid (blood) through a piping system (vessels and arteries).

These bits of history borrowed from other sciences gave the researcher a clearer link of the mechanical fluid flow theory to

Newton's fluid resistance theory and how they can be proportional to the fluid dynamics of velocity gradient and in time, their link with what modern science calls fluid and electrolyte balance. Sebersky (1964) explains Newton's laws of motion as the speed at which a particle mass shifts from one pressure gradient to the other. In the study of homeostasis in man, a pressure gradient is evident in the internal environment that regulates the body's dynamic equilibrium of fluid flow. Man's internal environment is in a constant state of motion responding to different pressure gradients and areas of fluid and electrolyte concentrations (Anthony, 1967).

Antecedent Conditions

To understand fluid and electrolyte balance is to understand that the body functions as an integrated whole to the end that life is maintained in a state of dynamic equilibrium. This state of dynamic equilibrium is the basis of the fluid concept that this study investigated. Dynamic equilibrium is defined by Burgess (1979) as:

> . . .a stable composition of the elements which are necessary for life and present in the body in a state of constant change; incesssant movement, replacement, chemical transformation, and excretion. The presence of essential elements constantly changing and interchanging creates and sustains an environment in which the body cells can live. This environment bath inside and outside the cell must have sufficient water to promote transport of dissolved constituents as well as chemical reactions (p. 4).

It was this researcher's belief that fluids are compatible with life. They must be present in the body to provide a state of homeostasis. Therefore, some antecedent conditions must be necessary to help define the concept of 'force fluids' in a human being with a

biologic system capable of maintaining a dynamic equilibrium and adequate means of body fluid exchange.

Henderson (1978) supported this researcher's concept of fluids and went on to say that water is necessary for all the chemical and physical activity on which life depends. Henderson (1978) makes reference to Bernard's dictum that:

> . . .health depends on the constance of the fluids that make the 'internal environment', or, in other words, the entracellular fluids. Their constance depends on the nature of the intracellular fluids, and since there is a continuous interchange of water between the cells and their environment, the fluids of each must be studied together. The water need is in direct relation to the concentration of solids dissolved in the body fluid. If their intake of solids does not keep pace with the water ingested and eliminated, the cells drown--they are water-logged. When the water intake does not keep pace with the intake and output of solids, the cells shrivel--they are dehydrated. .(p. 661).

Bernard's dictum of over hydration or water intoxication and dehydration are antecedent conditions that lead the nurse to think about his/her action in regard to fluid therapy. An evaluation of what goes in the body in proportion to what comes out is essential for dynamic equilibrium or homeostasis.

According to the nutritionist Williams (1977), "the average adult metabolizes 2.5 to 3 liters of water per day" (p. 158). Henderson (1978) adds that the body is able to maintain a state of fluid balance by regular fluid intake and through normal renal and entrarenal excretion. Water enters the body not only through fluids and food ingested but by oxidation of nutrients in the body. Water is lost from the body insensibly through the skin and lungs, as well as through urine, perspiration, and feces. Thus, normal renal flow through the kidneys (approximately 1500 cc) in 24 hours according to Deane (1966)

is an antecedent condition that must be intact before fluids are encouraged.

Another antecedent condition to fluid therapy is availability of fluids and a means of ingesting them. In health, thirst and appetite regulate the fluid, electrolyte, and acid-base balance. If the individual has access to adequate food and drink, thirst and hunger are satisfied. Lack of these essentials or the ability to take them in has a direct relationship on the body's dynamic equilibrium.

Normal desires for eating and drinking are dulled or their satisfaction made impossible by altered body states such as shock, drugs, anesthetics, trauma, or any incapacitating illness or physiological manipulation of body functions. The correct evaluation of these conditions and satisfactory interventions is another prerequisite for fluid therapy. A random look at various interruptions in the health state as outlined in the examples to follow shows conditions where the authors made reference to 'increasing fluid intake' as a treatment to correct a specific problem. The Lippincott Manual of Nursing Practice (1978) has these instructions for the clinical condition of pneumonia listed as objectives of treatment and nursing managements:

> Encourage high levels of fluid intake within limits of patient's cardiac reserve--adequate hydration thins mucous and serves as an effective expectorant. . .maintain adequate hydration since fluid loss is high from fever, dehydration, dyspnea, and diaphoresis (p. 243-244).

For infections of the urinary tract:

> With a colony count of at least 100,000 colonies/ml of urine on a clean-catch midstream or catheterized specimen implies infection. . .encourage patient to drink sufficient fluids

> to promote renal blood flow and to flush out bacteria in urinary tract (p. 627).

In acute renal failure:

> Initiate adequate hydration before surgical procedures, during intraoperative period and following operative procedures. . .give only enough fluids to replace current losses during oliguria phase (usually 400-500 ml/24 hours) plus measured fluid losses associated with gastrointestinal drainage, fever, surgical drainage, or other routes (p.609).

While the authors of the Lippincott Manual are interested in treating the patients' condition as they present themselves, they fail to truly define the 'force fluid' concept as it should be practiced in these conditions. Some parameters are outlined and are measurable while others are ambigious. What they have done is talk about some antecedent conditions that warrant fluid therapy, or if you will, "forced fluids", but left the means and its evaluation to the nurse's intervention.

Tucker (1980) in Patient Care Standards, repeatedly mentions 'force fluids' for many medical and surgical conditions. Her approach is different and is worth looking at for this study. Care of the patient with an indwelling uretheral catheter: "Force fluids to 3000 ml daily unless contraindicated; force fluids to a maximum allotted for patients' condition" (p. 362). For pelvic inflammatory disease: "Encourage fluids to 3000 ml daily unless contraindicated" (p. 373). Care of a patient with fever: "Urge fluids, oral and parenteral, as ordered and tolerated" (p. 25). For lymphangiography: "Increase fluids to 3000 ml unless contraindicated" (p. 109). Thrombocytopenia purpura: "Maintain fluids intake to 3000 ml daily or as ordered unless contraindicated" (p. 11). These examples demonstrate several

interesting points. It is noteworthy that the author uses four other phrases to get the message across to 'force fluids'. While these four are of a more positive nature, Tucker (1980) has used them interchangeably throughout her book to mean the same action. These are not unfamiliar terms to the nurse, and the same end result will happen regardless of which word is used, but in defining a concept the same label must be applied to ensure the same measurable results. The second thing that these examples point out is the variety of antecedent conditions that nurses treat daily with 'force fluids' as a nursing action. This further encouraged the purpose of this study, of attaching an operational definition to this phrase, making it worth the importance nursing practice has placed on it.

Operational Definitions

When talking about an operational definition, we are talking about how a concept such as 'force fluids' is linked to a concrete situation such as nursing care of a patient. Hardy (1973) stated that the operational definition describes a set of physical procedures which must be carried out in order to assign to every case a value for the concept. In other words, the operational definition permits the validity of the concept to be assessed and measured.

A review of the literature did not produce any studies or definitions directly related to assessing the concept of 'force fluids'. Several authors such as Greco, Quintanella, and Huang (1979), Pflaum (1979), and Friedman (1982) talk about intake-output records and their value in assessing body fluid balance. Earlier in this study, it was mentioned that dynamic equilibrium and homeostasis

would be achieved if what went into the body was proportional to what was eliminated. It stands to reason that some record of what goes in the body and what comes out is a concept strongly related to fluid balance. Henderson (1978) outlined this concept in her operational definition of intake-output:

> While there are no hard and fast rules for the amount to be drunk in a 24 hour period, it should be sufficient in the case of adults to ensure the elimination of at least 1000-1500 ml of urine (p. 667).

Carpenter (1974) in his writings about "cholera" stated a similiar but different philosophy of fluid intake:

> If losses cannot be measured accurately as in diarrhea and vomiting, fluids should be given at a rate sufficient to maintain a normal radial pulse and normal skin turgor. Overhydration can be avoided by careful observation of neck venous flow and auscultation of the lungs (p. 856).

These definitions link the need for an intake-output schedule and support an operational definition of 'force fluids' in that a record of fluid intake and output assists in measuring homeostasis.

With the understanding that the concept of intake-output is important in operationally defining the concept of 'force fluids', again a look at the literature is important to establish a baseline as to what the normal adult's intake and output of fluids must be in a 24 hour period to maintain homeostasis. Williams (1977) reported that water enters the body in three forms: 1) as preformed water in liquids, 2) as preformed water in foods, and 3) as a product of oxidation. The average adult will ingest 1200 to 1500 cc of liquid daily. The amount of preformed water in food will vary with respect to water content contributing from 700-1000 ml/day. Water of oxidation

on the whole, is from 200-300 ml/day. This increases the daily intake to between 2100-2800 ml/day.

Water leaves the body through the kidneys, the skin, the lungs, and feces. The kidneys excrete 1000-2000 ml/day according to Williams (1977). This amount is divided into two portions, the obligatory water excretion and facultative water excretion. According to Williams, the obligatory water excretion is that amount of water that the kidneys are obligated to excrete in order to rid the body of its daily load of urinary solute. The average obligatory water excretion of an adult as reported by Williams is about 900 ml/day. The facultative water excretion is due to fluctuating body needs and the renal tubular reabsorption rate. This contributes another 500 cc more or less in a 24 hour period. The skin under normal circumstances will excrete about 450-700 ml/day. The lungs excrete approximately 350 ml/day and through bowel eliminations, approximately 150-200 ml/day is excreted. This is a total of 2000-2800 ml/24 hours. These parameters are accepted and supported by Tablner (1981), Deane (1966), Marbach (1980), and Mitchell (1981) and seem generally accepted parameters through the literature for normal intake and output for a normal, healthy adult when in a state of homeostasis.

Related Concepts

The concept of 'force fluids' has a number of related concepts that have already been mentioned. One that seems to have more empirical data published about it is that of 'intake-output records'. Because the principle of homeostasis is based on a balance of what goes in and is excreted by the body, it is important to talk about a means

of recording that balance. The true value of the intake-output record as reported by Friedman (1982) has various levels of value. To explore these various viewpoints, RN staff writers edited by Friedman asked many nurses and several doctors to comment on the issue. Some nurses believed that everything a patient takes in and everything a patient excretes should be precisely measured and recorded. If this isn't done, they contended, the record would be incomplete and may jeopardize the accuracy of the patient's therapy. Such precise, down-to-the-last 'cc' accuracy was believed seldom necessary by another group who contended that a modified approach was not only more reasonable but more practical. This group also indicated that the measurement of the oral and intravenous intake and the urine output would give an accurate enough indicator for the average patient. Still another group in the same study believed neither guideline could be generally applied because each case would be unique and demanded its own individual approach.

Although these interviews had no real practical conclusions as to the validity of the intake-output record of a patient's fluids, it did add support to the purpose of this study--to operationally define the concept of 'force fluids' so that related concepts such as intake-output records can be a measurable factor in fluid therapy.

Another related concept is that of daily weights. Employing the same concept as the intake-output record Deane (1966) stated,

> Body weight and urine volume are the main clinical indices for judging whether the 24-hour water intake which the patient is receiving is appropriate. Acute changes in body weight generally reflect a change in body water and should be interpreted accordingly. The volume of fluid given in 24 hours is adjusted to keep the body weight constant (p. 175).

Pflaum (1979) in her study of intake-output records concluded that, "If recording of intake-output is to continue as a nursing procedure, then it must be coupled with daily weights. . ." (p. 498).

Dehydration is another concept that employes the 'force fluid' concept very closely. Marbach (1980) defines dehydration as "negative water balance, that is, intake is less than output. . .it can occur as a result of two situations: decreased intake or increased output" (p. 14). To correct this clinical picture, an order to 'force fluids' is in order. The fluid deficit in dehydration regardless of the cause must be corrected carefully through measured amounts of fluids to be ingested. The severity of the dehydration or loss of body fluids is the governing mechanism for the amount of fluids necessary to correct the problem.

The larger principle of fluid and electrolyte balance and homeostasis is also a related concept to 'force fluids". Groer (1981) in talking about the regulatory processes of the body's internal environment states that there are many mechanisms that regulate the internal constance of the human organism:

> A salt and fluid load on the normal physiology will trigger many adaptive and regulatory mechanisms. Adaptive measures allow the organism to cope with change in the normal volume and electrolyte concentration, whereas regulatory mechanisms act to eliminate excess fluid and salt so that total body water and salt return to normal, or steady state and values (p. 2).

This internal environment of the body is dependent on the external effects of fluid ingestion. Life is dependent on this homeostatic balance. Morbach (1980) supports this process through his comments:

> Unless this process continues at a certain equilibrium, the individual cells will die and the totality of these cells,

> life, cannot exist. In normal situations, the body has no difficulty maintaining this water balance. Intake equals output (p. 12).

Other related concepts to 'force fluids' are: thirst, hydration, water intoxication, osmolar concentration, and restrict fluids. These concepts were not elaborated in this study. It is enough to realize that, what goes in the body must in some manner be excreted in approximately the same volume, and in turn be replaced. Any activity in this 'circle of life' of the human network that interrupts this delicate equilibrium is related to the fluid therapy concept and in turn related to the concept of 'force fluids'.

Man is in constant change and interchange with his environment. Infante (1982) supported this state of constant exchange, striving, action, and reaction on the part of man and also referred to it as dynamic equilibrium. She claimed that individuals strive to maintain for themselves this state of equilibrium through a constant series of adaptive maneuvers and characteristic problem-solving activities through which basic need-fulfillment takes place. In numerous life situations, most people succeed in maintaining this state of dynamic equilibrium. Yet throughout a life span, many situations occur that lead to sudden discontinuities by which the homeostatic state is disturbed and that result in a state of disequilibrium. To many such situations, the individual may possess adequate adaptive or reequilibrating mechanisms to respond. Homeostasis is maintained.

A number of factors combine to influence the state of dynamic equilibrium of a person--psychosocial, cultural, and biophysical factors (Infante, 1982). These considerations must be taken into

account when defining measurable characteristics of the term 'force fluids' as it relates to altering the patient's state of hydration. The discussion that follows is this researcher's perception of what an order for 'force fluids' may indicate, and what factors the nurse will have to address when assessing the patient's needs for fluid therapy in order to record the measurable outcome of the action.

Force or Encourage Fluids so That Intake Equals Output in a 24-Hour Period

One must be mindful of the earlier mentioned normal values of approximately 2100-2800 ml/day as the average adult intake of fluids. These totals include the insensible intake through foods and the process of oxidation. These insensible additions to the patient's intake are not considered by nurses when recording a patient's intake. This is obvious to this researcher by the lack of reference to this action in the studies by Greco, et al. (1979), Pflaum (1979), and Friedman (1982) in intake-output records. No reference was found in the literature of this parameter being recorded as a 'nursing action' or standard of nursing care for anyone on fluid therapy. The principle was defined by Williams (1977) and Henderson (1978) but not in conjunction with nursing practice. It is suggested that if accurate records of intake are to be measured, these concepts and parameters should become part of the nurses' orientation and education when assessing fluid therapy as a crucial part of the patient's care. It is this researcher's contention that nurses are not aware of the suggested amounts of fluid that various authors indicate should be included in daily totals of fluid intake and output as insensible.

These insensible gains and losses through other body functions are important when one is monitoring kidney function, the post-op patient who may be third spacing, the patient with inappropriate ADH (anti-diuretic hormone), or a wide variety of fluid and electrolyte imbalances that are manifest when the stress of illness is present.

To 'force fluids', individual assessment is necessary before any action can be taken. This order takes special care and evaluation of the patient's history of past and present illness and his ability to ingest liquids. Records from past 24 hours of fluid intake should be assessed to see what the pattern or baseline of intake and output has been. Then, a total assessment from head to toe is necessary before any specific treatment can be initiated. Once this has been done, Mitchell (1981) and Tablner (1981) suggest that creative innovation can be started.

Restrict Fluids to 3000 ml/Day

A good look at this order seems to indicate that fluids must be restricted. On the other hand, the parameter of 3000 ml/day is a little above the suggested normal intake for one day. This researcher believes that an order like this to increase fluid intake, even though it is a negative approach, would get the nurse's attention much quicker than one that states to 'force fluids'. In present practice, nurses are much more creative and likely to carry out an order to restrict fluids because it gives them some specific guidelines. When fluids are restricted, a number of actions are initiated: 1) a sign is put up in the patient's room stating that this patient is on restricted fluids to 3000 ml/day, and it will indicate how much should be taken each shift;

2) a call will be made to the dietary office to 'restrict fluids' to 3000 ml/day, and a plan will be worked out on how much liquid will be put on the tray and the nurses will be instructed on the amount they are responsible for over the 24 hour period; 3) a measuring cup marked with 'cc' will be given to the patient with instructions to use it for drinking and to carefully record the amounts taken; and 4) the message to restrict fluids will be communicated to all personnel by carefully marking the treatment in some manner on the care plan and passing the message from shift to shift. This researcher from practical experience in the clinical field is of the opinion that orders to 'restrict fluids', though negative in concept, will bring about a positive, more measurable nursing response.

Force Fluids Until Urine Output is 1500 ml/24 Hours

Again, a careful assessment must be made of the patient's past and present condition. This order could be difficult to measure in that the urine output is behind the intake in measureability. It is difficult to know how much one must encourage by mouth in liquids to produce the desired urinary output and over what time span. Normally the adult should produce 60 cc of urine per hour to indicate the kidneys are functioning in a normal range. Hourly output may be indicated until the nurse has a notion how each patient is going to respond to an 'increased fluid' routine. This parameter, though difficult to monitor, would be indicated in the elderly who can not take in large volumes of liquids but whose kidneys show adequate function for homeostasis.

Encourage Fluids to 3000 ml/Day

This does not necessarily mean that one measures out 3000 ml and deposits them at the patient's bedside. This order is fine for the alert adult who is motivated to increase his/her intake to this degree once instructed on the reasons necessary. Those patients who for some reason are not motivated in this manner may not be able to accomplish this task. Another aspect for this order that seems unreasonable is that maybe 3000 ml is too much for someone to take in when their daily intake routinely has been not much more than 1000 ml/day. If a patient is in the habit of taking in lesser amounts, has no output problems, has no electrolyte disturbance and his condition is stable except perhaps for a slight fever, then the place to start with fluid therapy is increasing the intake by small amounts each hour until a gradual goal is reached. Again, this takes creativity and patience on the nurse's part as well as constant assessment.

Weigh Daily--Report Any Gain, Loss Over 2 Pounds/Day

This order is simple to measure and record. Deane (1966) states that one should expect a weight gain of about two pounds for every two liters of fluid taken in. Pflaum (1979) used the same parameters of one pound per liter of fluid intake in her study of intake-output records and their relationship to body fluid balance. Using these guidelines, one could maintain a weight chart and not necessarily need an intake-output record. If the patient gained a pound or two it could, but not necessarily, indicate that he was well hydrated. What it doesn't tell you is what his kidneys are doing in relation to his intake. The physician in writing this order is allowing for some

water retention and it is assumed that he expects the weight to stay approximately the same from day to day indicating a fluid balance. More study is necessary on this subject before this researcher would rely totally on daily weights for an indication of fluid balance.

These samples of orders are not limited by any means. They were included in this study to point out the nursing involvement in responsibly carrying out such an order and the fact that it is more complicated than one realizes. Safe practice of medicine must include specific parameters to measure in order to legally document that the patient received the care necessary to maintain a state of homeostasis.

To further demonstrate the assessment of baseline parameters that would indicate the need to 'force fluids', it is necessary to retrieve from the literature a case model that is related to the concept. Such a related model was discussed by Price (1979) in her article, "The Patient is Starving. . .But Why". The article talks about the use of nursing diagnosis as a means of focusing on special care needs of a patient. The patient used to demonstrate the need for fluid therapy was admitted with a medical diagnosis of malnutrition. The patient is 60 years old and has recently lost her husband.

> ". . .the first, most obvious finding is Ms. Collinson's emaciated state: at 5'4", she weighs only 90 lbs. She's running a fever of 101^{0} F. Her B.P. is low at 96/70; her pulse, at 110, is high; resp. rate is 18, no abnormal breath sounds heard; skin is dry and pale, with poor turgor; motion, reflexes are normal, but she is too weak and dizzy to walk without help. She is well oriented, she cries off and on, urine is dark amber and concentrated with elevated specific gravity. The CBC shows hemoglobin and red cells to be low, hematocrit is high, sodium level is elevated, potassium level is low-normal. . ." (p. 45-46).

These parameters and clinical signs of dehydration coincide with Tucker's (1980) assessment. The nursing interventions following this assessment is as follows.

> ". . .based on Ms. Collinson's estimate of her fluid intake and output over the past few days, the nurse judges intake to be about 750 cc/day, and output to be approximately 400 cc/day. .the most crucial goal is to increase fluid intake. . .to double her present intake of 750 cc/day. The nurse compiles a list of the drinks Ms. Collinson likes and makes a point of offering her something once an hour while awake. . ; the nurse records intake and output every day and keeps a close watch on electrolyte balance. . .after one week, Ms. Collinson hasn't doubled her fluid intake, but the nurse rates the care plan to restore fluid volume a success. . . .Ms. Collinson is consuming 1100 cc/day now, her fever has subsided and her urine output has risen to between 900 and 1000 cc/day, her B.P. and electrolytes and urinalysis are within normal limits. . ." (p. 48).

This related case model describes a situation of fluid deficit and what nursing interventions were carried out to correct them. The main point was the setting up of the fluid intake according to the patient's past history of intake and present likes. Obviously doubling the admission intake was not accomplished, but perhaps it was not realistic. In the end, the intake almost equaled her output and a state of dynamic equilibrium was achieved. The amount taken in was satisfactory to bring about a physiologic change, and that is the end goal of any nursing intervention. This researcher believes that the case could be a good model if a daily weight was added to the care plan.

Summary

A review of the professional literature revealed a scarcity of research findings about the concept of 'force fluids'. Studies scattered among the sciences discussed and defined the

principles of homeostasis and the development of a concept in fair detail. Other studies contributed to the conceptual definition of 'force fluids' through discussion of related concepts and antecedent conditions that would warrent an order to increase oral intake of fluids. There were no studies to date including an operational definition of the concept of 'force fluids'. Of the few cases reported that related to fluid therapy, the concept of dehydration was the most talked about condition related to an order to increase oral intake or 'force fluids'. No studies addressed the fact that the word 'force' if taken literally could mean implication of violence. Measurable parameters mentioned such as intake-output records, daily weights, restrict fluids and output volume were listed as important nursing interventions when an increased fluid order was written. This researcher questions the variety of opinions among professional nurses regarding these concepts and the lack of defining characteristics available. It is this researcher's opinion that the concept of 'force fluids' and those related to it have been poorly defined and have been used ambigiously throughout the medical and nursing professions for some time. The lack of professional literature reiterates the necessity of this study, to pursue an operational definition of the concept in terms that are measurable and consistent.

A summary of the findings reveals the following criteria for the proposed definition. When an order is written to 'force fluids', the following parameters could be employed: 1) increase intake of fluids by mouth to at least 2000 cc/24 hours; 2) increase fluid intake by mouth by one half the patient's normal daily intake; 3) increase oral

intake until the urine or total output is equal to the intake in 24 hours and at least equals 1500 ccs; 4) increase or decrease oral intake to maintain body weight as specified by the doctor; and 5) increase oral intake in proportion to output in 24 hours.

CHAPTER III

METHODOLOGY AND PRESENTATION OF FINDINGS

The Research Design

The research design used for this study was a three phase nonexperimental descriptive survey approach. A content analysis method was used to categorize and refine the data collected through the survey obtained from medical-surgical nurse coordinators across the United States. It was believed that the survey format would provide the necessary data to substantiate the purpose of the study; first to document the need to formulate an operational definition of the concept 'force fluids', and secondly, to formulate this definition from a consensus of statements about the concept as accepted by nursing educators who greatly influence the practice of clinical nursing. Data collected from undergraduate medical-surgical nurse coordinators have provided material to expand the study to develop a conceptual framework for the concept which includes an operational definition. The results of this study are presented in three phases:

Phase I - sample; methodology

Phase II - sample; methodology (a. instrument, b. procedure); demographic data analysis; categorization of data; data analysis and discussion, and conclusion

Phase III - sample; methodology (a. instrument, b. procedure); data analysis and discussion, and conclusion

Statement of Risk

There was no anticipated risk to the participants in this study. Agreement or refusal to participate did in no way affect the respondent's employment, salary, or evaluation. Each subject was informed that return of the questionnaires would indicate their consent to participate. Anonymity was guarded by the investigator. Only the investigator had access to the raw data, only group data was reported, and the names of the participating agencies were not identified in the study.

Phase I

Sample

Subjects for this study were randomly selected undergraduate nurse educators now functioning as coordinators of medical-surgical nursing courses. Subjects were teaching in associate degree, baccalaureate, and diploma nursing programs accredited by the National League of Nursing (NLN).

Methodology

The procedure for Phase I was:

1. A listing of all associate degree, diploma, and baccalaureate undergraduate nursing schools accredited by the National League of Nursing (NLN) as listed in the 1982-83 NLN publications (#15-1311, #16-1314, #23-1309) was compiled.

2. Each accredited school in a specific state and Washington, D.C. was listed by name, address, phone number, type of school, and the name of the dean.

3. The listing was divided by states and Washington, D.C. The names of all schools for each state and Washington, D.C. were placed individually in a container; two names of nursing schools from each state and Washington, D.C. were randomly chosen.

4. A mailing list of 102 names of nursing schools was obtained. This final sample consisted of 42 baccalaureate schools of nursing, 34 associate degree schools of nursing, and 26 diploma schools of nursing.

Phase II

Sample

Initially, 102 letters (Appendix A) were sent to the deans of the schools of nursing chosen in Phase I of the study. The deans were asked for their cooperation in distributing the instructions and instruments to their undergraduate medical-surgical nursing coordinators for participation in the study. Ninety-eight medical-surgical coordinators returned the questionnaire and thus made up the sample for Phase II.

Methodology

The collection of data by mail was strategically planned to coincide with undergraduate nurse educators' academic schedules. A mid-October mailing in the middle of a semester for Phase II of the study was felt to contribute to the high response rate in this phase.

Instruments. Two instruments for data collection were used in this phase of the study: a) the Object Content Test (OCT) (Appendix C), and b) the demographic data sheet (Appendix D).

The OCT was developed by Garretson (1962) to differentiate and measure individuals' attitudes toward social objects. The OCT was derived from the Twenty Statement Test or "Who Am I?" test, developed by Kuhn (1954) 'to differentiate and measure the system of attitudes which defines the self as an object of experience'. Hartley (1970) extended the instrument to a description of social objects other than the self by substituting the question, "What is ____?", or "A ____ is?" (That is, "What is the particular social object which the researcher is investigating".) The Twenty Statement Test as Hartley substantiated "incorporates the assumption that important parts of the self-conception are available to awareness and can be put into words" (p. 2).

The OCT is a relatively unstructured device consisting of a single page, paper and pencil test. The test is largely self-administered with simple instructions, can by administered to individuals by mail, is not timely, and appears to be an efficient means of data collection.

The theoretical framework for the instrument is based on the Symbolic Interaction Theory as reported by Spitzer, Couch, and Stratton (1970). The Symbolic Interactionist Theory specifies that "the self-definitions of greatest significance are those made by the person himself" (p. 8). The Twenty Statement Test (TST) was developed to measure the self in a manner consistent with symbolic interactionist theory. The OCT was established by Hartley (1970) to extend the TST to describe social objects other than the self. Hartley remarked that "research indicates that persons who write

fairly consensual answers to 'Who Am I?' also describe other social objects in relatively consensual terms, although the level of consensuality and the degree of modality will not be quite as high for those answers as for the answers to the self questions" (p. 29). These findings support notions held generally by symbolic interactionists that the person views his world from a fairly consistent frame of reference, as a set of attitudes or definitions of which the self concept is the core. The test when used in this manner is known as the Object Content Test (OCT), developed primarily by Hartley (1970) and Garretson (1976).

The measurement and implications derived from the OCT are based on the assumptions of the TST that important parts of the self-conception are available to awareness and can be put into words (Hartley, 1970). When this is applied to describe an object other than the self as in the OCT, the instrument is used to differentiate and measure the systems of attitudes which defines the self as an object of experience.

It is known that adults, based on their experiences may make many hundreds of statements in response to a "What is ____?" The question proposed for this study was "When I see the term 'force fluids' it means ____?" The OCT is limited to 20 responses that represent only a fraction of all possible responses that a subject could make. The implications and measurements were limited to a single modality and collected by mail in a given period of time. It could comprehend differences in the thought process over time. The method depended upon the validity of the assumption of internal consistency as

presented in various modalities, in various places, to various others (Hartley, 1970).

The reliability of the Twenty Statement Test and the Object Content Test is based on the results of numerous other researchers who have used the instruments previously. Reliability has been established for both instruments. Spitzer, Couch, and Stratton (1970) reported multiple studies reporting test-retest reliability coefficients ranging from .38 to .85 from 1953-1967. They have published these results with capsules of the author reporting, the problem studied, the procedure, the version of the TST used, and scoring and major findings.

The OCT used in this study and its purpose was explained in a manner so as not to limit spontaneous thought and response to the questionnaire. This researcher believed the content of the responses were individual and time, place, or setting did not interfere with the results. It was believed that one's first thoughts on a subject are spontaneous and accurate.

The second instrument used was the demographic questionnaire (Appendix D). Subjects in Phase II were asked to respond to this questionnaire by circling the appropriate information as it pertained to themselves.

Procedure. The procedure for Phase II was as follows.

1. A letter was sent to the dean of each school chosen (Appendix A) asking that the OCT (Appendix C) with the cover letter of explanation (Appendix B) and the demographic sheet (Appendix D) be

forwarded to the coordinator of the undergraduate medical-surgical course, asking for their participation.

2. The purpose of the study was explained in the cover letter (Appendix B).

3. The subjects receiving the OCT were instructed to read the cover letter carefully before answering the test. They were instructed to read the explanation at the top of the OCT and to write their responses in the space provided. The subjects were asked to refrain from discussing the research question and possible responses that could be made. The subjects were instructed to finish the test in approximately 15 minutes; in other words, as quickly as possible.

4. To assure anonymity, code numbers were used instead of names for the schools of nursing and faculty chosen for the study.

5. Participants were informed that return of completed questionnaires would indicate their consent to participate in the study.

6. Participants were informed that a followup letter would be initiated (Appendix E & F) if responses were not returned within the given time frame. They were also asked to return the OCT if they did not wish to participate.

7. Alternate schools would be picked randomly from any state in which the faculty member indicated a desire not to participate.

8. Participants were asked to put their names on an enclosed separate blank sheet of paper and to return it with the OCT so information for Phase III of the study could be forwarded to the same sample.

9. Accompanying the OCT was a demographic data sheet (Appendix D) requesting the following information from each subject: age, years in nursing, program in which he/she is currently teaching, level of education, actual years of clinical nursing experience (not including those in teaching), and the state in which he/she is now licensed to practice.

10. The subjects were asked to use the self-addressed, stamped envelope accompanying the test to return their responses as soon as possible.

Demographic Data Analysis of Phase II

Fifty-six responses to the OCT were received with the initial mailing in mid-October. Three weeks after the initial mailing, a second letter to the dean (Appendix E) was mailed to the 46 subjects who had not returned their OCT, along with a second OCT, a demographic data sheet, and a second letter of explanation to the undergraduate medical-surgical nurse coordinators (Appendix F). The deans were again asked to pass on this information to their undergraduate medical-surgical nurse coordinators for participation in the study. At the end of a second 3-week period, an additional 42 responses were returned to give a total of 98 (96%) responses returned.

The data for Phase II came from 98 undergraduate medical-surgical nurse coordinators from across the United States. All states and Washington, D.C. were represented. Table 1 lists selected demographic data from these 98 subjects.

Table 1

Demographic Data - Phase II

(N=98)

Characteristics	Number of Responses
Nursing Program in Which Subjects Taught (N=98)	
Baccalaureate	39
Associate Degree	33
Diploma	26
Years in Nursing (N=98)	
0-5	7
6-10	11
11-15	26
16-20	13
21-25	19
26-30	12
30 plus	10
Level of Education (N-98)	
Ph.D. (Ed.D.=4, D.N.S.C.=1, Ph.D.=3)	8
Master's in nursing	59
Master's in another field	20
Master's in nursing and another field	3
Bachelor's of Science in nursing	7
Diploma	1
Years in Clinical Experience Other Than Teaching (N=97)*	
0-5	33
6-10	29
11-15	23
16-20	6
21-25	3
26-30	3
30 plus	0
Age (N=98)	
20-25	0
26-30	4
31-35	18
36-40	23
41-45	13
46-50	19
51-55	7
56-60	5
60 plus	4

*One participant did not include years of clinical experience

The subjects ranged in age from 26-60 plus, and their experience in nursing ranged from 1 year to 30 years. Thirty-three participants had 0-5 years of clinical experience other than teaching, while only 7 indicated 0-5 years in nursing. This indicates that many of the participants' clinical experience paralleled their teaching experience, and the majority of subjects had been in clinical nursing over 5 years. Thirty-nine subjects were undergraduate medical-surgical coordinators from baccalaureate schools of nursing, 33 were from associate degree schools of nursing, and 26 were from diploma schools of nursing.

Categorization of Data in Phase II

Subjects receiving the OCT were instructed to give 20 statements in response to the question addressed to themselves, "When I see the term 'force fluids' it means?" They were instructed to write their responses as they occurred to them quickly (in about 15 minutes) and with no attention to logic or complete sentences. This researcher believed that if there was an operational definition of the concept 'force fluids' in practice in clinical nursing, undergraduate medical-surgical nurse coordinators would relay that information through the OCT.

The number of responses given by individual subjects to the OCT varied. Twenty-eight participants submitted 20 responses. Other participating subjects submitted from 2 to 19 responses. A total of 1286 responses were received. The data was analyzed using content analysis. This researcher, along with two nurses familiar with content analysis, reviewed the responses looking for like themes,

phrases, or ideas about the concept 'force fluids'. Because the purpose of this research was to operationally define the concept of 'force fluids', the responses on the OCT were scrutinized looking for terms about the concept that could be measured. While some measureable terms or operational definitions were included, the majority of responses contained characteristics that allowed the formation of the following categories: a) antecedent conditions, b) assessment factors, c) plan of action (nursing interventions), d) operational definitions, and e) outcome criteria.

Once the responses from the OCT were listed according to content under these five categories; interrater reliability was used to validate their placement. Three nurse experts (defined in Appendix M) familiar with content analysis independently categorized the responses into one or more of the five categories. The interrater reliability was 84% (a predetermined rate of agreement of over 80% was considered reliable).

Data Analysis and Discussion of Phase II

The responses received from undergraduate medical-surgical nursing coordinators were varied in content. While some were part of an operational definition, many statements were part of a conceptual framework. A conceptual framework goes farther than an operational definition in that it reveals the relationships among factors that allow a thorough explanation of the concept. Thus, the original purpose of this study was broadened to include development of a conceptual framework and schematic diagram for the concept 'force fluids'. The broad spectrum of responses about the concept 'force

fluids' reiterates the fact that nurses operate from a broad knowledge base about the concept, but their judgements do not necessarily stem from a body of knowledge where operational definitions are a foundation. The number of responses in each of the five components of the conceptual framework that were the categories derived from the content analysis of the OCT are listed in Table 2.

Table 2 demonstrates that nurses use 'force fluids' routinely in their plan of action (47% of the total responses). Less emphasis is given to the antecedent conditions (17%) that must be present to warrant an order to 'force fluids', operational definitions (7%) that establish a set of defined parameters that assures consistency in carrying out the order to 'force fluids', and outcome criteria (5%) that would formulate some consistency in evaluating the plan of action to determine its success or failure.

The high rate of responses (24%) relating to assessment factors (Table 2) and 47% relating to nursing interventions support the long standing fact that most nurses are trained in science and are more skilled in analysis--the principle mode of the scientist--and less skilled in synthesis--the principle mode of the practitioner. Norris (1982) suggests that we must teach nurses to operate more effectively in the mode of synthesis if we are to have operational definitions of nursing concepts as a basis for practice.

Table 2

Component Parts of the Conceptual Framework of the Concept 'Force Fluids'

(Responses = 1286)

CATEGORY	NUMBER OF RESPONSES	PERCENT OF TOTAL
Antecedent Conditions		
1) Medical diagnosis that warrants an order to 'force fluids'	175	14%
2) Need to increase fluids for 'normal reasons'	37	3%
Assessment Factors		
1) Factors necessary to rationalize an order to 'force fluids'	195	15%
2) What nurses must do once 'force fluids' are instituted	113	9%
Plan of Action		
1) Nursing responsibilities within the patient contract	515	40%
2) Client's responsibilities within the patient contract	95	7%
Operational Definitions	94	7%
Outcome Criteria	62	5%

Appendix K lists the individual responses for each category according to frequencies and percents. An analysis and discussion of each category follows.

Antecedent Conditions

A total of 175 responses were placed in the category of antecedent conditions. The most frequent responses (Appendix K) under antecedent conditions that warrant an order to 'force fluids' were dehydration (18% of responses in this category), decreased urinary output (6.2%), and renal problems (6.2%). These responses are compatible with Henderson's (1978) belief that water is necessary for all chemical and physical activity on which life depends. An evaluation of what goes in the body in proportion to what comes out is essential for dynamic equilibrium or homeostasis. These results support Henderson's statement that dehydration and renal function are antecedent conditions that lead the nurse to think about his/her action in regard to fluid therapy.

Other responses listed under antecedent conditions (Appendix K) are signs and symptoms or those factors directly or indirectly related to fluid deficits. A total of 46 responses were in this subcategory under antecedent conditions. Table 3 outlines these signs and symptoms along with the number of responses and their percent of the 175 responses received in this category from the OCT.

Table 3

Signs and Symptoms of Fluid Deficit

(Categorical Responses = 175)

SIGNS AND/OR SYMPTOMS	NUMBER OF RESPONSES	PERCENT
Loss of skin turgor	11	6.2 %
Elevated temperature	10	6.0 %
Dry oral mucosa	8	4.5 %
Flushed, dry, warm skin	3	1.7 %
Poor fecal output (constipation)	3	1.7 %
Tachycardia	2	1.1 %
Sunken eyes	2	1.1 %
Change in neuro status	1	.57%
Lethargic, restless, apprehensive	1	.57%
Weak, atonic muscles	1	.57%
Husky speech	1	.57%
Low blood pressure	1	.57%
Dsyphasia and/or mental confusion	1	.57%
Weight loss	1	.57%

While many signs and symptoms of fluid deficit were reported, it is significant to note that very few nurses thought about these factors when completing the OCT. Only 3.5% of the 1286 responses received on the OCT pertained to signs and symptoms of fluid deficit. Signs and symptoms of fluid deficit not included in the responses on the OCT from the 98 participants but listed in major medical-surgical texts were: decreased tears, rapid respiration, thirst, hemoconcentration, and high urine specific gravity.

Some conditions that warrant an increase in p.o. fluids for 'normal' reasons were listed in a subcategory under antecedent conditions (Appendix K). Normal was defined as 'having no pathology present to indicate a fluid volume deficit'. A total of 37 responses were placed in this category. Conditions listed most frequently in this category were: indwelling urethral catheter (30% of responses in this category) and need to 'flush out kidneys' (24%). These and other statements listed under this subcategory of antecedent conditions are important in that they indicate nurses are thinking in terms of 'wellness' as well as illness. It should also be noted that terms such as 'need to flush out kidneys' (Appendix K) is very unscientific and vague, yet these folklore-like terms find their place in nursing care plans.

Assessment Factors

The response grouped as assessment factors are displayed in Appendix K. A total of 195 of the 1286 responses were placed in this category. The first subcategory of assessment factors was identified as that part of a data base necessary to rationalize an order to force oral fluids. The assessment factors most frequently recorded in this subcategory (Appendix K) were statements relating to the hydration status of the client (18% of total responses in this category). These statements are closely related to the most frequent antecedent condition recorded, namely 'dehydration'. These responses verify the fact that some nurses in this study used the nursing process as a tool to first identify the problem of dehydration and then to

assess the hydration status of the client prior to interventions. Further evidence of this process is shown in Table 4 which lists the assessment factors named in this study that correspond with the signs and symptoms of fluid deficit as listed in Table 3 as antecedent conditions.

The correlation on Table 4 gives evidence that some nurses in this study listed appropriate assessment factors for antecedent conditions given, but this was not done consistently. Weighing the patient (21 responses) occurred most frequently. Perhaps this can be explained in that this is a routine parameter to be measured on admission of all clients. However, so is taking the temperature and touching the client in some form, but no assessment factors were listed for body temperature evaluation, or temperature and/or condition of the skin. While the correlation depicted in Table 4 supports evidence that some undergraduate medical-surgical nurse coordinators in this study think in terms of the nursing process, it is not conclusive in broad terms.

Table 4

Antecedent Conditions Listed by Nurse Educators in This Study as Compared with Assessment Factors Listed by Nurse Educators in this Study

ANTECEDENT CONDITION	ASSESSMENT FACTOR (195)
Loss of skin turgor	Assess skin turgor
Elevated temperature	None
Dry oral mucosa	Evaluate mucous membranes
Flushed, dry, warm skin	None
Poor fecal output (constipation)	None
Tachycardia	Observe for fluid overload (tachycardia)
Sunken eyes	Evaluate condition of eyes
Change in neuro status	Assess neuro status of the client
Lethargic, restless, apprehensive	Assess neuro status of the client
Dsyphasia, and/or mental confusion	Assess neuro status of the client
Weak, atonic muscles	Assess neuro status of the client
Husky speech	Assess neuro status of the client
Low blood pressure	Monitor respiratory status and blood pressure
Weight loss	Weigh the patient

Other statements listed under assessment factors pertained to specific questions such as, "What are the electrolyte and hematocrit values?", "Are they in balance?", and "Are there any reasons for fluid restrictions?" These questions must be answered before an order to 'force fluids' is rationalized. Some obvious omissions from this list according to Kee (1982) are: date of onset, duration, age, and ability to correct the problem. In spite of some omissions, the assessment factors received from the participants in this study (Appendix L) are substantial enough to form a data base that would rationalize an order to force oral fluids.

The second group of assessment factors listed responses that indicated further assessing tasks that nurses must do once the order to 'force fluids' has been initiated (Appendix K). The most significant response in this category with 54 responses (48% of responses listed under this category) is assessment of the client's likes and dislikes. Nurses in this study seem to realize that an order to 'force fluids' is irrelevant unless the patient is allowed to participate. Other statements in this category were all considered relevant. Answers to these questions must be documented on the data base before a plan of care or nursing interventions can be initiated.

Although it is documented that nurses use the concept 'force fluids' ambigiously due to a lack of defining characteristics that are consistent and measureable, they don't initiate the order blindly. The assessment factors listed (24% of 1286 responses) in this study give some evidence that nurses in general think before they act.

Plan of Action

Responses indicating nursing actions were categorized into nursing responsibilities and client responsibilities of the patient care contract. This patient care contract would be initiated to correct the antecedent conditions or prevent antecedent conditions from leading to fluid imbalance. The number of responses in this category was 610 (47% of 1286 responses) (Appendix K). Less than 1% of the responses were reported in negative terms such as 'force' and 'jam'. All other responses were reported in positive terms such as encourage, consider, explain, observe, monitor, maintain, and replace.

The response occurring most frequently in this category was "careful check and recording of daily intake and output" with 62 responses (12% of category responses). Because the priniciple of homeostasis as reported in the review of literature is based on a balance of what goes in and is excreted by the body, it is important to talk about a means of recording that balance. While the intake-output record is a related concept to 'force fluids', its true value as an accurate measuring tool has been disputed by many authors. Greco, Quintanella, and Huang (1979), Pflaum (1979), and Henderson (1978) argue that because fluids enter and leave the body in various forms, an accurate record is not possible. However, they have concluded that some record of what goes in the body and what is excreted is necessary to monitor body fluid balance. Until other forms of documenting fluid losses such as parameters for measuring insensible losses, use of fluid/weight charts, and kiligram

measurements are more available to nurses, the intake-output record remains a viable component of the patient care contract.

The second most frequently listed response under nursing responsibilities in the patient care contract was to "explain to the client and significant others the need to increase the client's p.o. intake, and why" (52 responses or 10% of the responses in this category). This response supports Chinn's (1983) components of the patient care contract in that it attempts to clarify the role and responsibility of the client and the nurse, facilitates mutually agreed upon roles and responsibilities of each, and assigns appropriate levels of self care to the patient.

Other responses reported were positive measures to hydrate the client. Some were quite clear such as "give 6 to 8 (16 oz.) glasses of fluid in 24 hours", or "check the specific gravity of the urine", while others such as "offer foods with lots of water in them" and "increase the amount of fluids given to the patient" were ambigious and not measureable. Another response included under the category 'plan of care' (Appendix K) was "outline signs and symptoms of overhydration and monitor carefully". Signs and symptoms that indicate a fluid excess outlined by Tucker, et al. (1980) but not included in this study are: a) wrinkled, furrowed tongue; b) edema of the eyes, pitting of extremities, and possible ascites; c) full neck veins; d) shortness of breath, tachypnea, and rales in the lung fields; e) hypertension; f) weight gain; g) increased urinary output, and h) headache and possible diaphoretic seizures. Signs and symptoms listed by participants in this study that are

indicators of fluid volume deficits and fluid volume excess are a) confusion, b) tachycardia, and c) anorexia (vomiting).

Negative terms such as "give more than the patient can tolerate" (11 responses or 2.1% of responses in this category) were among the top 15 responses in this category. These responses and others such as "jam it down his/her throat", or "force means unintentional tact may be needed", detract from Chinn's (1983) philosophy of the 'mutual agreement' aspect of the patient care contract.

The second aspect of the patient care contract is related to the identification of the clients' ability and/or responsibility they want for their own health care. The 95 responses placed under this category were appropriate for that goal (Appendix K). It is important to note that there is a 100% correlation between nurses (54) who wanted to know the client's likes and dislikes under assessment factors (Appendix K) once the order to 'force fluids' was instituted, and 54 nurses who wanted the client to make known his/her likes and dislikes in forming the patient care contract. A second important correlation seen was between the nurses' need to "explain to the client, family, and significant others the need to increase the client's p.o. intake and why", and the "nurses' responsibility to involve the client, family, and significant others in recording intake and output". These responses support Chinn's (1983) 'mutual agreement' philosophy and facilitate discussion optimal to promoting the client's responsibility for health care.

Operational Definitions

Because of the original purpose of this study, particular attention was given to those responses pertaining to an operational definition of the concept 'force fluids'. Out of the 94 responses (7% of the 1286 received) categorized under operational definitions, 27 different statements containing factors that were thought to be measureable were listed. A content analysis of these terms by a panel of nurse experts (see Appendix M for definition) who were familiar with operational definitions was conducted. The categorization of these 27 terms under operational definitions were defined as: a) appropriate and measureable, and b) not appropriate. Table 5 displays these findings.

Table 5

Content Analysis of Operational Definitions

(Responses = 94)

CATEGORY	NUMBER OF RESPONSES	PERCENT OF TOTAL
I. Appropriate and Measureable (N=16)		
2500 to 3000 cc/24 hrs.	30	32%
2000 to 3000 cc/24 hrs.	4	4.3%
1000 cc/8 hrs. (day and evening), 500 cc/nights	4	4.3%
Adults should get 100 cc/hr.	3	3.1%
100 cc/hr.	3	3.1%
30-40 cc/kg. weight/day (2000-3000 cc) for adults, if not contraindicated	3	3.1%
3 oz. fluid every two hours	3	3.1%
Fluid intake for an adult should be adequate (approximately 2500 to 3000 cc/24 hours) to maintain homeostasis	2	2.1%
Give 6 to 8 (16 oz.) glasses of fluid over 24 hour period	2	2.1%
Heart rate within client's normal limits	1	1.1%
Breath sounds are clear	1	1.1%
No abnormal weight gain	1	1.1%
No weight gain greater than 2 pounds above normal body weight in 24 hrs.	1	1.1%
No adventitious breath sounds	1	1.1%
In the hydrated client, an intake of 2500 to 3000 cc should equal approx. 2000 to 2500 cc of urine output in 24 hrs. (homeostasis)	1	1.1%
1500 cc on the 7-3 shift; 800 cc on the 3-11 shift; 200 cc on the 11-7 shift	1	1.1%
II. Not Appropriate (N=11)		
50 cc/hr.	16	17%
2000 ml/24 hrs.	4	4.3%
1 glass (8 oz./240 cc) fluid 1-2 hrs. while awake in addition to meal beverages	3	3.1%
120 cc/2-3 hours	3	3.1%
Heart rate no greater than 10 above client's baseline	2	2.1%
Encourage fluids (1-2 glasses) every hr. of the day until 4 p.m., and gradually decrease in the evening hours	1	1.1%
200 cc/hour	1	1.1%
30 cc/hour	1	1.1%
Intake adequate to produce 75 cc of urine output/hour	1	1.1%
1000 cc above normal for hydration	1	1.1%
Intake to maintain hydration 'normal' plus make up loss	1	1.1%

Sixteen of the terms were rated appropriate and measureable and 11 were rated not appropriate. A vast majority of the responses (64% or 60 responses in this category) were listed under appropriate and measureable, whereas 36% (34 responses listed in this category) were categorized as not appropriate. That 64% of the statements that form part of an operational definition were rated as appropriate and measureable is significant to this study in that it may indicate that some nurses in general do use the concept 'force fluids' with a set of defined parameters that are measureable. However, the 60 responses deemed appropriate and measureable are only 4.7% of the total 1286 responses received. Of the 16 appropriate operational definitions that were submitted by undergraduate medical-surgical nurse coordinators, the one they most agree upon to answer the conceptual definition of the term 'force fluids' is to give the client 2500 to 3000 cc/24 hours. In other words, the conceptual definition of 'force fluids' according to the participants in this study should read, "To increase the oral intake to 2500 to 3000 cc in a 24 hour period". Using these parameters, a clearer understanding of the measureable amount of fluids the client is to receive would be to state it, "Maintain the client's intake between 2500 to 3000 cc over a 24 hour period". This statement takes into consideration what the client has been drinking and supplements it to the desired amount.

Next, to analyze whether educational preparation of the subjects had any relationship to type of measureable statements regarding 'force fluids' given, the responses from the OCT were matched with demographic sheets for each subject. Table 6 depicts the

classification of operational definitions and educational level of participants.

Table 6

Content of Operational Definitions and Levels of Education

(Responses = 94)

TYPE OF RESPONSE	Ph.D. (N=8)	MSN (N=59)	Masters in Another Field (N=20)	MSN plus Masters in Another Field (N=3)	BSN (N=7)	Diploma (N=1)
Appropriate & Measureable	3	28	13	2	5	0
Not Appropriate	2	25	9	3	3	0

There was a total of 94 responses received from the 98 subjects. No apparent difference was found in the number of appropriate responses and not appropriate responses reported by participants with different levels of education. This imprecision in the use of the concept 'force fluids', lack of clarification of nursing phenomena about the concept, and lack of discriminatory skills supports the premise in this study, that nurses lack a well developed knowledge base where informed judgements stem from a body of knowledge where operational definitions are a foundation. This finding in undergraduate nurse educators is particularly important since a lack of this type of foundation in their practice is likely to be passed on to their students.

Outcome Criteria

Eleven statements were listed under this final component of the conceptual framework for the concept 'force fluids'. Three of the 11 statements: congestive heart failure, ascites, and overhydration, were considered as negative responses to the outcome of the plan of care. All the responses were appropriate but ambigious in that they were not measureable. For example, "good kidney function" and "body weight is stable" are not stated clearly enough to predict the outcome.

Of the 1286 responses received, only 62 (4.18%) were considered outcome criteria statements. Going back to the nursing process of the conceptual framework for 'force fluids', it is at the outcome criteria stage that important clinical decisions are made. If the plan of care worked, the nurse needs to ask, "Are there any antecedent conditions still present that warrant an increase in oral fluids?" If the answer is no, no further plan is necessary. If the answer is yes, then the plan must continue or a new plan formed to prevent the symptoms. It is significant to point out that the lack of outcome criteria statements in this study parallels the inconsistency in operational definitions reported in this study. If the operational definition is sound and consistent, it can be measured in the outcome criteria.

Appendix K lists the outcome criteria statements in frequencies. Twenty responses in this category (32%) pertained to overhydration as the most frequent outcome criteria which is classed as a negative statement, whereas 19 of the responses in this category

(31%) listed hydration as the desired outcome, a positive statement. That there is no difference in these outcome statements indicates that nurses in this study expect as many positive responses to their plan of care as they do negative ones. It also reestablishes the fact that nurses in this study do not operate from a data base where operational definitions are a foundation. If consistent, measureable terms for the concept 'force fluids' were in practice in clinical nursing, overhydration might not have been such a high choice among participants. This type of negative response indicates that the antecedent condition was not assessed correctly, and the plan of care was inappropriate or not carried out as documented. In practical terms, there should be an outcome criteria statement for each antecedent condition. This study did not document this finding.

Conclusion

In conclusion, with regards to Phase II, to state that nurses in general think in terms of a conceptual framework about the concept 'force fluids' would be presumptuous. The sample population in this study of undergraduate medical-surgical nurse coordinators believed to represent clinical nurses in general shows that nurses are informed about assessing a client's condition that may warrant an order to 'force fluids'. They can be responsible to develop a plan of care to fulfill the order to 'force fluids', but due to a lack of defined parameters to guide these interventions, these nurses lack consistency in how this concept can be measured to assure the outcome of the plan will be positive. A broader interpretation of identifiable data and classification of nursing goals for the client

needing increased oral fluids through use of the nursing process is needed. This concept can find meaning through a conceptual framework that allows for the uniting, combining, modifying, and the utilization of many factors that contribute to a data base that indicates an order to 'force fluids' is warranted. The concept 'force fluids' has no meaning without this holistic, dynamic approach.

Phase III

Sample

The subjects in Phase III of this study were the 98 undergraduate medical-surgical nursing coordinators who returned the OCT in Phase II of the study.

Methodology

Phase III of the data collection by mail was strategically planned to coincide with undergraduate nurse educators' academic schedules. A mid-January mailing after the second semester had begun was felt to contribute to the high response rate in this phase of the study.

Instrument. The instrument used in Phase III of the study was the selected category sheet (Appendix L) that was derived from the responses received from the OCT in Phase II of the study. Responses from the OCT derived from this analysis were used to form the selected category sheet (Appendix K). The responses were listed randomly under the appropriate category so as not to give one response more weight than another.

Procedure. The procedure for Phase III was as follows.

1. Each individual participant in Phase II of the study (N=56) who included his/her name and address when returning the OCT was sent a second letter of explanation (Appendix H) along with the selected category sheet (Appendix L).

2. Those participants who returned the OCT but did not include their name and address (N=42) were contacted through a second letter of explanation to the dean (Appendix G), asking the dean to forward the data from Phase III to the same nurse asked to participate in Phase II. A letter of explanation to medical-surgical coordinators (Appendix H) and a selected category sheet (Appendix L) were included.

3. Participants were asked to read each category sheet carefully, paying particular attention to the appropriateness of the responses listed on the selected category sheet. Under each category heading, a definition for that category as used in this research along with an example of that category and instructions to the participant were listed.

4. Participants were asked to check only those responses they believed fit the definition given.

5. The conceptual definition of the concept 'force fluids' as used in this study was included in the cover letters of explanation to the undergraduate medical-surgical coordinators (Appendix H).

6. Subjects were asked to use the self-addressed, stamped envelope accompanying the selected category sheet and return it within 2 weeks.

7. Participants were informed that a follow-up letter would be initiated if responses were not returned within the given time frame (Appendix I & Appendix J).

8. Particular attention was given to the operational definition category. Responses checked were ranked appropriate and not appropriate by three nurse experts familiar with operational definitions and content analysis (Appendix M). A predetermined mean rate of agreement of over 80% was considered reliable since this would give a coefficient of determinaiton of approximately 0.9.

9. Followup information regarding the outcome of the study will be sent to all participants completing Phase III of the study.

Data Analysis and Discussion of Phase III

Fifty-four respondants out of 98 returned the selected category sheet within the three week period after the initial mailing in mid-January. Three weeks after the first mailing, a second letter was sent to 16 nurses (Appendix J) and 28 deans (Appendix I) reminding them to complete and forward Phase III of the study to this researcher. A second letter of explanation and selected category sheet (Appendix H & Appendix L) along with a self-addressed envelope was included for their convenience. A total of 81 (83%) of the 98 subjects contacted returned the selected category sheets.

Data analysis of each category was done according to frequency (Appendix N). This data was compared with existing criteria for each of the five categories of the conceptual framework as reported in recent medical-surgical text books (Brunner & Suddarth, 1984; Phipps, Long, & Woods, 1983; Luckman & Sorensen, 1980; Billings & Stokes,

1982) to check accuracy and interpretation of particular responses. The following analysis of each component of the conceptual framework describes these findings.

Antecedent Conditions

Table 7 depicts the antecedent conditions selected from the selected category sheet (Appendix N) by over 50% of the participants in this phase of the study.

Table 7

*Antecedent Conditions That Warrant an Order to Force Fluids

(N = 81)

ANTECEDENT CONDITION	NUMBER OF RESPONDANTS	PERCENT
Signs and symptoms of dehydration	75	93%
Dehydration	71	88%
Kidney stones	69	85%
Elevated temperature	67	83%
Dry oral mucosa	67	83%
Thick respiratory secretions	66	82%
Concentrated urine	66	82%
Poor fecal output (constipation)	60	74%
Loss of skin turgor	56	69%
Diarrhea	55	68%
Upper respiratory infections	53	65%
Genito-urinary surgery	51	63%
Diaphoretic	46	57%
Sunken eyes	46	57%
Hypovolemia	44	54%
Infections	43	53%
Flushed, dry, warm skin	40	49%

*For remaining responses selected by participants, see Appendix N

Because "signs and symptoms of dehydration", and "dehydration" were listed separately on the OCT, they were listed as such on the selected category sheet (Appendix L). It is not known whether nurses participating in this study perceived these terms to have separate meanings. They were consistent in choosing both as appropriate antecedent conditions. Billings and Stokes (1982), Phipps, Long and Woods (1983), and Luckman and Sorensen (1980) all cite dehydration and signs and symptoms thereof as a common health problem where an increase in oral fluids is the primary intervention. Dehydration is defined by these authors as an isotonic deficit of salt and water or a hyperosmolarity resulting from water loss and is characterized by hemoconcentration. Hemoconcentration was not listed as an antecedent condition in this study. On the selected category sheet (Appendix L) it appears under assessment factors in the form of a question, "Electrolyte and hematocrit values, are they in balance?" Eighty percent of the participants (65 nurses) chose this response in Phase III of this study (Appendix N) as a necessary assessment factor to evaluate fluid deficit.

Another antecedent condition listed in major medical-surgical texts was thirst. This condition was not mentioned by the participants in this study.

Dehydration as an isolated term is ambigious. Because "signs and symptoms of dehydration" and "dehydration" were chosen most frequently by participants in this study as antecedent conditions that would warrant an order to 'force fluids', it was important to see if they were consistent in defining the category signs and symptoms of

dehydration by choosing the particular signs and symptoms that were listed on the selected category sheet. Table 8 outlines signs and symptoms of water deficit as found in current medical-surgical texts and compares them with the responses checked by undergraduate medical-surgical nurse coordinators in this study.

Analysis of Table 8 reveals that for the 28 possible signs and symptoms of water deficit listed from major medical-surgical textbooks, at least one participant listed in Phase II and selected in Phase III that sign or symptom. But they were not consistent in choosing with equal frequencies these signs and symptoms as appropriate antecedent conditions. Those chosen most frequently by participants were elevated temperature (83%), poor fecal output (constipation) (74%), loss of skin turgor (69%), sunken eyes (57%), hypovolemia (56%), and flushed, dry, warm skin (49%). Other important signs and symptoms of dehydration that were listed by participants but chosen in lower frequencies were tachycardia (2%), weight loss (14%), and the neuromuscular signs and symptoms (less than 5% except for disoriented-12%). While medical-surgical nurse educators in this study recognized signs and symptoms of dehydration as the major antecedent condition that warrants an order to 'force fluids', they failed to consistently list all those signs and symptoms as outlined in the literature.

Table 3

Signs and Symptoms of Water Deficit From Medical-Surgical Texts*as Compared with Signs and Symptoms Listed by Nurse Educators in this Study

(N = 31)

AREA OF ASSESSMENT	MEDICAL-SURGICAL TEXT	PERCENT OF PARTICIPANTS LISTING SIGNS AND/OR SYMPTOMS
Skin	Flushed, dry, warm	49%
	Decreased turgor	69%
Tongue	Dry, cracked	
Mucous membranes	Dry, coated	33%
Eyes	Decreased tears	-
	Soft and sunken	57%
Temperature	Elevated	33%
Cardiovascular	Tachycardia	2%
	Low blood pressure	20%
	Rapid respirations	-
	Hypovolemia	56%
Weight	Loss	14%
Gastrointestional	Thirst	-
	Anorexia (vomiting)	19%
	Constipation	74%
Neuromuscular	Husky speech	4%
	Apprehensive	5%
	Restlessness	5%
	Weak atonic muscles	5%
	Lethargy	5%
	Disoriented	12%
Blood	Hemoconcentration	-
	Increased hematocrit	-
	Increased BUN	20%
	Electrolyte imbalance	20%
Urine	High specific gravity	-
	Decreased amount	40%
	Concentrated urine	82%

*Phipps, et al. (1983), Billings and Stokes (1982), Brunner and Suddarth (1984), Tucker, et al. (1975), and Luckman and Sorensen (1980).

Assessment Factors

Assessment of the client's fluid and electrolyte status is often determined during the initial nursing history. Homeostasis is influenced by the intake of water, body requirements, and efficiency of regulatory systems, especially the kidneys. Each individual according to Billings and Stokes (1982) has a "unique demand for daily replacements that are determined by age and body surface, metabolic rate, activity, environmental temperature and humidity, physiological losses, and the integrity of intrinsic regulatory mechanisms" (p. 861). Data relating to these intervening criteria identify potential or actual nursing diagnoses that could warrant an order to 'force fluids'. The data submitted by undergraduate medical-surgical nurse coordinators in this study related to these intervening criteria identifying the potential or actual nursing diagnoses of: 1) alterations in fluid balance, 2) alterations in cardiac output, 3) impairment of skin integrity, 4) sensory perceptual alterations, 5) alterations in urinary elimination, and 6) alterations in tissue perfusion. Table 9 reports assessment factors as they were checked on the selected category sheet by participants and the nursing diagnoses to which they relate.

Table 9

Assessment Factors and Related Nursing Diagnoses

(N= 81)

NURSING DIAGNOSES	ASSESSMENT FACTORS	NUMBER OF RESPONDANTS	PERCENT OF TOTAL
Alterations in fluid balance	Weigh the patient	69	85%
	Note any drainage, vomiting or burn loses	68	84%
	Electrolyte and Hct. values... Are they in balance	65	80%
	Problems (rationale) for fluid losses	57	70%
	Parameters for measuring insensible losses	49	60%
	Are fluids shutting off feed back mechanism to pituitary	23	28%
Alterations in cardiac output	Are there any reasons for fluid restrictions	67	33%
	Observe for fluid overload, tachycardia	58	72%
	Monitor respiratory status and blood pressure	57	70%
Impairment of skin integrity	Assess skin turgor	72	89%
	Evaluate mucous membranes	67	83%
Sensory perceptual alterations	Assess neuro status of client	48	59%
Alterations in urinary elimination	Compare previous 24 hour intake and output	72	99%
	Check specific gravity of urine	63	78%
Alterations in tissue perfusion	Assess hydration status of the client	72	89%
	Observe for dehydration	68	84%
	Assess client's previous intake for 8 hours	59	73%
	Potential for edema (overhydration)	54	67%
	Assess condition of eyeballs	52	64%

It is significant to note that data submitted by participants in this study are sufficient to establish nursing diagnoses that are related to an actual or potential fluid deficit.

In referring back to the assessment factors and their frequencies as recorded in Appendix N, the greatest percent of nurses responding in Phase III of the study chose the statement, "What medications is the client on?" as the one assessment factor among those listed that should be checked. This medication data can have a positive or negative influence in any of the nursing diagnoses listed in Table 9. Medication history is listed in the major medical-surgical text as a factor to consider in relation to oral (p.o.) intake of fluids, but only after a thorough assessment of the client's hydration status and functioning of body organs. Certain medications such as chemotherapy, sulfa drugs, and diuretics were listed in this study under antecedent conditions as common or normal reasons why fluids should be increased (Appendix N).

The second group of listings under assessment factors on the selected category sheet were those questions nurses must ask or actions they must perform once the order to 'force fluids' has been instituted. Ninety-five percent of the nurse respondants agreed that one must know, "Can fluids be taken p.o.?", "Is the G.I. tract functioning?", and "Are there any fluids contraindicated before an order to 'force fluids' is instituted?" Ninety-eight percent agreed that it was important to have accurate equipment available at the bedside to measure intake and output, 93% considered the client's likes and dislikes, and 91% identified what type of fluids to give.

Before an actual plan of care could be instituted for fluid therapy on the client, nurses in this study agreed that a number of other questions had to be answered (Appendix N). However, questions such as age, body surface, activity, metabolic rate, environmental temperatures, and humidity were not on the list. According to Billings and Stokes (1982), these are demands of the body that should be questioned when daily fluid replacements are being determined.

Plan of Action (Patient Care Contract)

Nursing action statements that could be incorporated in a patient care contract once an order to 'force fluids' has been established were of high priority in this study (47% of the 1286 responses in Phase II). Once this list was established, nurses in Phase III of the study had little trouble choosing their priorities. Nursing responsibilities within the contract according to Chinn (1983), are to clarify the roles and responsibilities of the client for his/her health care, to teach the client, the family and the significant others about the health problem and assist in establishing mutually agreed upon roles and responsibilities to maintain life processes. Seventy-seven of the undergraduate medical-surgical nurse coordinators in this phase of the study agreed that to "explain to the client, family and significant others the need to increase the client's p.o. intake and why", (Appendix N) was important. Their choice is congruent with that of Chinn (1983), Phipps, et al. (1983), and Billings and Stokes (1980). Other important interventions checked by nurses in this phase of the study are listed in Appendix N under 'plan of action'. It is significant to

note that the more ambiguous statements such as "encourage more fluids than the client has taken" and, "offer more water than other types of fluids" were given less weight by respondants. It is also significant to recognize that negative terms such as "give more than the patient can tolerate", "jam it down his/her throat", were not chosen as a feasible plan of action by any participant.

The concept of 'force fluids' when described by nurse educators in this study were congruent with Tucker's, et al. (1980) more positive interchangeable terms such as "encourage fluids", "urge fluids", "increase fluids", and "maintain fluids". In defining a concept, it must be understood that the same label must be applied routinely to ensure the same measureable results.

While these numerous detailed and creative interventions are appropriate for developing a plan of care for a client with a fluid volume deficit, current medical-surgical texts outline more specific, measureable details of certain of these interventions. For example, Brunner and Suddarth (1984) cite a postural blood pressure drop in systolic pressure by 15 millimeters of mercury or a drop in diastolic blood pressure by 10 millimeters of mercury as a key sign of extracellular volume deficit. Billings and Stokes (1982) list a decrease of 20 mm of mercury in the systolic or diastolic blood pressure variance from supine, sitting, and standing as their measureable parameter of hypovolemia, or an increase of 20 beats or more per minute in the pulse rate. In order to measure nursing

interventions, more consistent parameters such as these must be included in the plan of care.

Operational Definitions

Frequencies as listed in Appendix N, under 'operational definitions' support the ratings given by three nurse experts (AppendixML) in Table 5 (p. 54) in Phase II of the study. The eight more frequently selected statements listed under operational definitions in Phase III were those classified as appropriate and measureable by the three nurse experts.

When using the concept 'force fluids' as a nursing order, nurses in this study agreed (54% of the responses in the category) that "fluid intake for an adult should be adequate (approximately 2500 to 3000 cc/24 hours) to maintain homeostasis", was a reliable, accurate operational definition. Thirty-seven participants (46%) agreed with this parameter and went a step farther to clarify the definition by choosing the statement, "in the hydrated client, an intake of 2500 to 3000 cc/24 hours should equal approximately 2000 to 2500 cc of urine output in 24 hours (homeostasis)". This statement adds the empirical indicator of output, and enhances the measureable phenomena of the concept. While these two definitions define an intake that would maintain the state of hydration in adults, nurses in this study also identified other empirical indicators that could be used to further operationally define the concept 'force fluids'. For example, breath sounds are clear (43% of the responses in this category), no weight gain greater than 2 pounds above normal body weight in 24 hours (38%), heart rate within normal limits (32%), and no adventitious breath

sounds (25%), are all empirical indicators that can be measured in conjunction with the intake and output to suggest that the person is hydrated. Statements that were not appropriate (as identified in Table 6) fell at or below the 25th percentile of selected responses in this category (Appendix N).

Outcome Criteria

Eighty-eight percent of the undergraduate medical-surgical nurse coordinators responding in Phase III of this study recognized hydration as the desired outcome criteria for the plan of care indicating that an increase in oral intake was necessary. When a state of hydration was found, the goals and objectives of the plan of care were successful and interventions were relative to alleviate the fluid deficit problem. It is this researcher's opinion that hydration as an isolated term is ambiguous. It must be measured by looking at some phenomena in the dehydrated or fluid deficit client that has changed because of the act of forcing oral fluids. It is significant to note that nurses in this study (see Table 10) most frequently picked hydration as the outcome criteria for measuring the plan of care where use of the concept 'force fluids' was warranted. It is also significant to note that other terms that would measure the hydration status in adults and describe certain phenomena that is observable and/or measureable were checked but most with much less frequency.

Table 10

Outcome Criteria Phenomena

(N = 81)

OUTCOME CRITERIA	NUMBER OF RESPONDANTS	PERCENT
Hydration	71	88%
Vital signs are within 'normal' limits for the client	63	78%
Body weight is stable	54	67%
Serum electrolytes are normal	52	64%
Pale urine	46	57%
Urine output is 500 cc less than intake	22	27%
*Overhydration	6	7%
*Ascites	4	5%
*Congestive heart failure	3	4%
Moist mucous membranes	3	4%
*Hypercalcemia	1	1%
Increased intake on intake-output record	1	1%
Improved skin turgor	1	1%
Creatinine and BUN within normal limits	1	1%

*Negative outcome criteria

Empirical statements about a concept according to Chinn (1983), establishes the correspondance between empirical reality and abstractions representing the concept that arises mentally when the word is used. Thus, the participants in this study had very few measureable terms that correspond with the abstract word 'hydration'.

Conclusion

In conclusion, with regards to Phase III of this study, nurses participating in this phase were consistent in checking appropriate statements that were enough to substantiate a conceptual framework for the concept 'force fluids'. While these incidental findings are not complete according to the major medical-surgical texts cited in this study, they are significant and allow this researcher to view the concept in its broader form, that of a conceptual framework.

A careful look at Appendix N indicates that participants consistently checked certain factors under each category establishing priorities within that category that were not always appropriate. Signs and symptoms of dehydration were the major antecedent condition nurses in this study chose as a medical condition that warrants an order to 'force fluids', but they did not subsequently check those statements that defined what the signs and symptoms of dehydration were. As a consequence, assessment factors that are part of a data base necessary to rationalize an order to 'force fluids' were haphazard in their placement of priority. The lack of appropriate and measureable operational definitions (16 out of 27) and the subsequent lack of outcome criteria indicate that nurses are aware of the concept 'force fluids', but do not use it consistently in an operational way.

CHAPTER IV

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The original purpose of this study was to operationally define the concept of 'force fluids'. The type and amount of data returned by the subjects broadened this purpose to the development of a conceptual framework for the concept which includes an operational definition.

A three phase survey method of undergraduate medical-surgical nursing coordinators from National League of Nursing (NLN) accredited schools of nursing from across the United States was used. Phase I involved randomly choosing two schools of nursing from each state and Washington, D.C. The final sample selected consisted of undergraduate medical-surgical nursing coordinators from 42 baccalaureate schools, 34 associate degree schools, and 26 diploma schools of nursing.

In Phase II of the study, the Object Content Test (OCT) developed by Garretson (1962) (Appendix C) was used to collect data. The sample consisted of 8 nurses with a Ph.D., 59 nurses with a Master's in nursing, 20 nurses with a Master's in another field, 3 nurses with a Master's both in nursing and another field, 7 with a B.S.N., and 1 diploma prepared nurse. All 98 nurses who returned the OCT were undergraduate medical-surgical nurse coordinators and represented at least one school from each state and Washington, D.C.

The OCT, which allowed 20 responses, was sent by mail to each participant. The question asked was "When I see the term 'force fluids' it means?" Subjects were asked to answer the question as if they were giving the answers to themselves as the answers occurred to them with no reference to logic or complete sentences. Some participants submitted 20 statements, others did not. A total of 1286 responses were received from the 98 participants.

Literal content analysis was used to categorize the responses from the OCT. The five categories derived from the responses were: antecedent conditions, assesssment factors, plan of action, operational definitions, and outcome criteria. The assignment of responses to these five categories were validated by two nurses familiar with content analysis with an interrater score of 84%.

Particular attention was given to the operational definition category. Originally, the 27 different statements listed in this category were thought to contain some measureable phenomena. Data analysis on these 27 responses was done by three nurse experts familiar with operational definitions (Appendix M). These statements were then categorized as appropriate and measureable or not appropriate. An interrater reliability of 95% was obtained.

The subjects in Phase III of the study were those participants who returned the OCT in Phase II (98 respondants). The selected category sheet derived from the OCT responses was sent to each participant with a definition, an example, and special instructions for each category. The subjects were asked to check only those statements on the selected category sheet that they believed

appropriately complied with the definition given for each category. Eighty-one nurses returned the selected category sheets. Responses checked by these 81 nurses were listed according to frequency.

The chosen responses in each of the five categories were evaluated for appropriate relationships to the concept 'force fluids' and the components were evaluated in relationship to information in current medical-surgical texts. The responses considered to be accurate were utilized in developing a conceptual framework. In areas where responses were not complete, added information as necessary was given by this researcher. The conclusions and recommendations from this study follow.

Conclusions

Several major conclusions may be drawn from this study. The original purpose of this survey was to operationally define the concept of 'force fluids'. Beliefs about this concept were twofold: (1) that nurses routinely use this term as a nursing order, and (2) that nurses use this term without a set of parameters that are measureable and consistent to indicate the order had been carried out. Both of these beliefs were substantiated in this study.

That there is no consistent operational definition of this concept was confirmed in Phase II of the study. Only 94 responses (7%) of the 1286 received pertained to an operational definition of the concept. From these 94 responses, 27 different statements were derived and thought to contain some measureable aspect of the concept. Only 16 of these statements were believed to be appropriate and measureable. It was assumed by this researcher that if a

consistent operational definition was defined and part of nursing's clinical practice, it would surface among the undergraduate medical-surgical nurse coordinators' OCT responses at least 50% of the time.

The belief that nurses routinely use the concept 'force fluids' as a nursing order was confirmed in Phase II of the study. Seventeen percent of the 1286 responses received from the OCT were related to antecedent conditions, 21% to assessment factors, 47% related to a plan of action, 7% to operational definitions (2.6% of these were classified as not appropriate), and 5% of the statements related to outcome criteria. In other words, 85% of the responses dealt with establishing a nursing diagnosis that warrants an order to force p.o. fluids and how to do it (antecedent conditions, assessment factors, and plan of care), while only 4.7% defined a set of parameters that were appropriate and measureable (operational definitions), and 7% with indications that the order to 'force fluids' had been carried out (outcome criteria).

It is Chinn and Jacobs' (1983) belief that definitions establish the correspondence between empirical reality and abstractions representing the concepts that arise mentally when a word symbol such as 'force fluids' is used. They explain that if concepts are not defined or are only partially defined, the corresponding empirical object, property, or event for the concept to be stimulated by the word will not be clear. Because each participant in this study has a different empirical reality, unclear results occurred when the word symbol 'force fluids' was encountered.

It has been established that the concept as verified in this study is a network of empirically based abstractions held together by relationship statements that precede, occur with, or follow the concept's occurrence. These relationship statements are dispersed in five categories, one of which is an operational definition. The five categories describe, explain, and predict conceptual relationships about the concept 'force fluids'. While no one participant in this study had a complete conceptual framework for the concept 'force fluids', the combination of responses revealed that an operational definition is only one structure or network pertaining to the concept 'force fluids'.

Before presenting the conceptual framework, one comment must be made. An important finding in this study was that some clinical nurse practices as relayed in Phase II and Phase III of this study were not appropriate and were potentially dangerous. Some antecedent conditions and assessment factors that would be important to identify the need to 'force fluids' were not listed or were selected by only a small number of participants. This implies that some nurse educators may lack sufficient knowledge of physiology or pathophysiology to completely analyze clients for conditions that might warrant an order to 'force fluids'. An example from Phase II can be seen by analyses of Appendix K under antecedent conditions where dehydration with 31 responses tops the list. But, other conditions that warrant an order to 'force fluids' received only 11 responses or less. In Phase III (Appendix N), some of the same conditions, elevated BUN, low blood

pressure, electrolyte imbalance, weight loss, changes in neuro status, tachycardia, and insufficient circulation to name a few, were selected by less than 25% of the participants.

Under assessment factors (Appendix K), again low frequencies were reported (below the 25th percentile) for most factors that are a necessary part of a data base to rationalize an order to 'force fluids'. Generally speaking, nurses identified major assessment factors that were potential indicators for fluid volume deficits but listed them with no consistency.

With regard to operational definitions, although very few were received from the overall study, some of the measureable terms that were classified as inappropriate by the nurse experts were still selected by subjects in Phase III. Examples are identified in the following operational definition as listed in Appendix N: 200 cc/hour (4800 cc in 24 hours), 300 cc/hour (720 cc in 24 hours), 50 cc/hour (1200 cc in 24 hours), and give 6-8 (16 oz.) glasses of fluid in 24 hour period (2880-2840 cc). If indeed these are the parameters used and taught by nurse educators, they could lead to further volume deficits or fluid overload.

Based on the results of this study, the findings are enough to substantiate a conceptual framework for the concept 'force fluids'. The schematic diagram for the conceptual framework of the concept 'force fluids' is presented in Figure I. In conclusion, a conceptual framework for the concept will be presented. Statements about each component of the framework as received in this study will follow with

information from major medical texts to supplement aspects of the framework that are important but were not included in the responses follows.

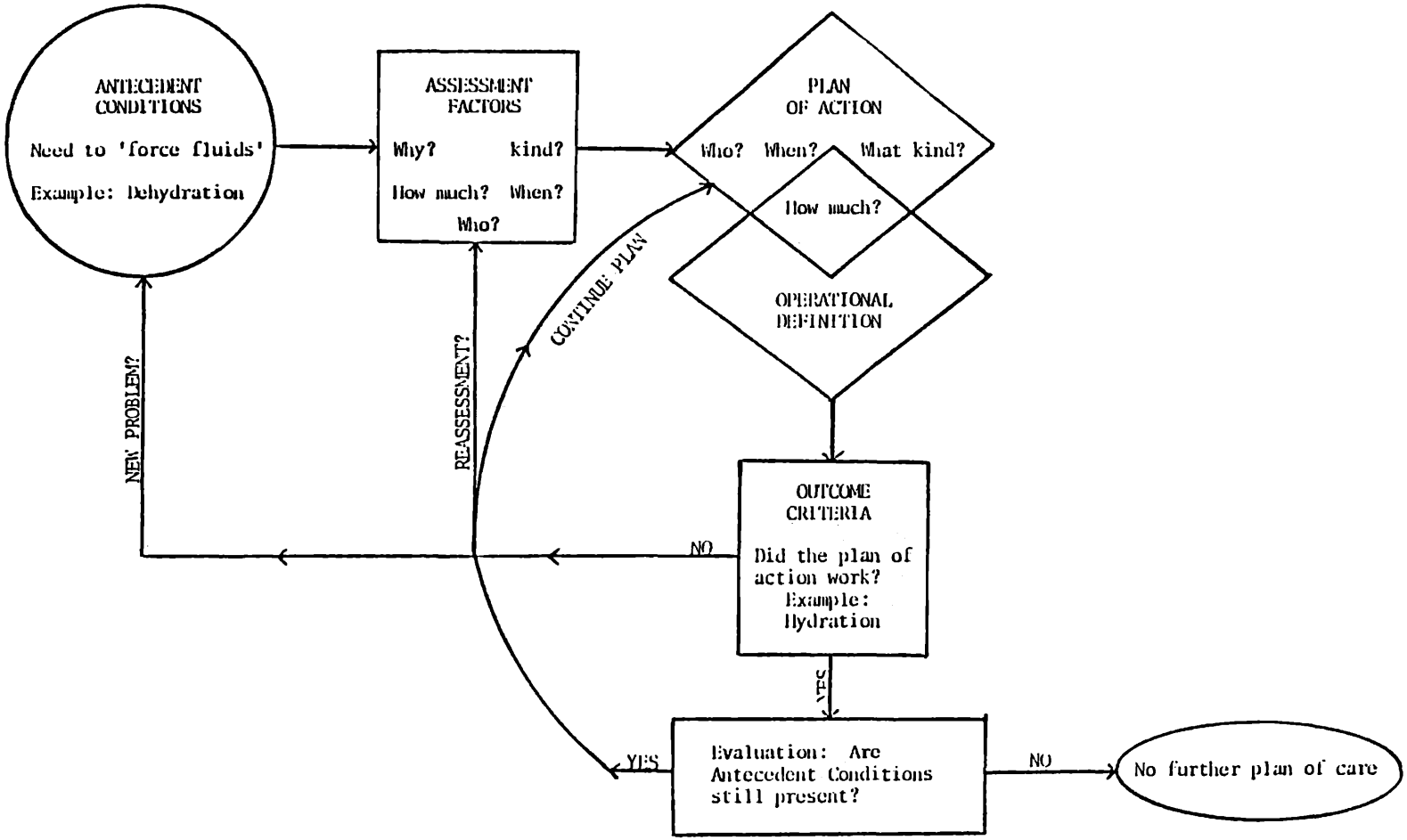

FIGURE I

A Schematic Diagram for the Conceptual Framework for the Concept 'Force Fluids'

Conceptual Framework for the Concept 'Force Fluids'

The conceptual definition for the concept 'force fluids' as understood in this study was 'to increase oral intake by a specified amount'. It was understood that this concept, as defined in this study pertained to adult clients capable of physiologically assimulating oral fluids either independently or with assistance.

Antecedent conditions as understood in this research were those conditions or events that present in clients to warrant a nursing order to force oral fluids. Antecedent conditions in this study fell into the following categories: a) medical conditions that warrant an order to force fluids; b) causes of dehydration; c) signs and symptoms of dehydration; d) lab values; e) non-fluid deficit (normal conditions) that warrant an increase in oral intake such as blood donors, breast feeding, indwelling urethral catheter, the client taking cytoxan, cisplatinum and sulfa drugs; f) the need to prepare a client for diagnostic tests, and g) the need to 'flush out the kidneys'. These conditions were believed to warrant an increase in oral intake or a nursing order to 'force fluids'.

In the first subcategory under antecedent conditions, dehydration, causes of dehydration, and signs and symptoms of dehydration were major conditions listed in which the body or tissues were deprived of water. Diarrhea, diaphoresis, problems with fluid intake and output, disturbance in the body fluid distribution or body fluid balance, vomiting, renal problems (disturbance in renal function), kidney stones, insufficient circulation (hypovolemia), and circulatory collapse or shock, insufficient intake or any disturbance

in the source of nourishment either because they are not available or because of illness, disturbances in the gastrointestinal tract, hemorrhage, burns, and body trauma are causes of fluid (and electrolyte) deficits. Because of these deficits, problems may arise in any of the body's functional areas. The most common problem that nurses will encounter are those due to dehydration. Signs and symptoms of dehydration that are antecedent conditions are: flushed, dry, warm skin; decreased tears, decreased skin turgor; dry oral mucosa; elevated temperature; concentrated urine, decreased urine output; poor fecal output (constipation); sunken eyes; rapid respirations; normal to low blood pressure; techycardia; weight loss, and neurological changes (dysphasia with postural hypotension, mental confusion, lethargy, restlessness, apprehensiveness, weak-atonic muscles, husky speech), circulatory collapse or shock, and thirst.

Laboratory values that would be appropriate as antecedent conditions are: an elevated plasma BUN and creatinine, hypercalcemia, hypernatremia, and elevations in hemoglobin and hematocrit. It must be kept in mind that lab values are interpretable only if prior values are known. Plasma sodium concentration may be decreased, normal, or increased depending upon the proportion between deficits of sodium and of water.

Other antecedent conditions that do not manifest as fluid deficit, but warrant an increase in oral intake are: kidney stones, thick respiratory secretions, infections, drug therapy such as sulfa drugs, cytoxan, or cisplatinum, indwelling urethral catheter, breast feeding, blood donors, preparation before and/or after diagnostic

tests, when I.V.'s have recently been discontinued, and after exercise.

Assessment factors are part of a data base necessary to formulate a plan of care that rationalizes an order to 'force fluids'. The baseline data collected by the physician, other nurses, and other members of the health team on the patient's record alerts the nurse to the presence of any antecedent conditions that warrant an order to 'force fluids', and stimulates questions that must be answered by the nurse once the order to 'force fluids' has been instituted. Significant assessment factors in the client's history are: a) "What medications is the client on?" b) "What was the previous 8 hour/24 hour intake and output?" c) "Are there any reasons for fluid restrictions?" and, d) "What are the electrolytes and hemocrit values, and are they in balance?" Other supportive subjective statements that relate to recent alterations in the client's pattern of intake and output included in the assessment data base when establishing an order to force fluids are: a) "Has the client noted any drainage, anorexia (vomiting) or reasons for not taking in the usual amount of food and/or fluids?" b) "Has he/she noticed any weakness in muscle strength or signs of muscular irritability, tremors and the like?" c) "Has he/she noticed any change in voiding habits and has the color of the urine changed?" d) "Is he/she aware of any recent rapid weight loss?" e) Has he/she been in a humid climate or noticed excessive sweating?" f) Is he/she taking any medication that might make the mouth or skin dry?" and, g) "Has the client noticed that he/she is particularly thirsty lately?"

Once it is established that a client's condition warrants an order to 'force fluids', other subjective and objective assessments are made. Before the plan of care is organized, answers to the following questions are necessary. "Is there accurate and available equipment at the bedside to measure intake and output?" "Is the gastrointestinal tract functioning?" "Can fluids be taken by mouth?" "What are the client's likes and dislikes?" "Does the client know how to 'force fluids', how much, and why?" "What kind of fluids should be forced, i.e., water only?" "Does the client depend on others for intake by mouth?" "To what level does the physician want fluids increased by mouth?" "Can the client obtain fluids on his/her own?" "What are the best hours for increasing intake?" What is the best temperature of the fluids for the client?" What type of diet is the client on?" "Are oral fluids adequate, or will I.V. fluids be needed to meet daily needs as well as make up for excessive losses?" "Are there any fluids contraindicated?" Other objective questions that need to be asked might be: "Is he/she incontinent?", "How much liquid does he/she take daily when well?", "Does he/she exercise regularly?", "Any swelling or puffiness noted in his/her abdomen or legs?", and "Any abnormal weight gain?"

The plan of action or the patient care contract (which is used interchangeably with 'patient care plan' by this investigator) is a mutual agreement of the nurse and client that: a) clarifies the roles and responsibilities of the client, b) identifies the roles and responsibilities of the nurse, c) assists in establishing mutually agreed upon roles and responsibilities, and d) assigns appropriate

level(s) of client self care. The basic goals for any client with actual or potential fluid deficit problems is to assist the client in maintaining a homeostatic balance insofar as this is possible or to restore a balance that had been disturbed. Four areas of nursing interventions for the plan of care are: 1) to ensure adequate food and fluid intake, 2) to observe for signs and symptoms of imbalance, 3) to monitor fluid intake and output, and 4) the patient responsibilities of the contract. These four areas of intervention are listed in detail in the following outline.

To ensure adequate food and fluid intake, nursing responsibilities include the following.

- have fresh water and other fluids at the bedside.
- consider other fluid sources such as jello, sherbet, popsicles, broth, etc.
- help the client with fluids when he/she cannot help him/herself.
- make fluids attractive and creative.
- give verbal recognition when the client increases his/her fluid intake.
- involve team members in plan of care, explain importance of 'force fluids'.
- does the client understand the need to force fluids, the amount, when, and why?
- give verbal recognition to team members for increasing clients' intake.
- maintain fluids at beside at best temperature for the client.

- offer juices, etc., between meals.
- be sure fluids are available to the client.
- instruct the family and significant others to offer fluids frequently.
- follow medications with a full glass of juice, water, etc.
- offer extra fluids with meals, request extra fluids on trays.
- make special effort for person to have p.o. fluids on 11-7 shift.
- replace both fluids and electrolytes.
- offer fluids everytime you go into the room.
- physically bring in a pitcher of water, juice, etc., and watch the client drink.
- increase the amount of fluids given to the client.
- offer foods with lots of water in them.
- encourage more fluids than the client has been taking.
- talk the client into drinking more fluids when he is 'thirsty'.
- offer the client as much fluids as he/she can take.
- offer fluids every two hours.
- offer more water than other types of fluids.

To observe for signs and symptoms of fluid imbalance, the patient care contract should include:

- monitor the client's condition to determine whether specific goals of increased fluids are being met.

- monitor the respiratory status for shortness of breath, tachypnea or rales (fluid excess is a negative response to the plan of care and must be monitored).
- outline signs and symptoms of overhydration and monitor carefully.
  a) diaphoresis,
  b) wrinkled, furrowed tongue,
  c) edema of the eyes, and pitting of the extremities and possible ascites,
  d) full neck veins,
  e) shortness of breath, tachypnea and/or rales,
  g) hypertension
  h) weight gain (more than 2 pounds above normal body weight in 24 hours),
  i) anorexia, vomiting, nausea,
  j) increased urinary output,
  k) headache, possible seizures,
  l) irritable, mental confusion;
  m) weak, apathetic behavior.

  observe for signs and symptoms of dehydration.
  a) flushed, dry, warm skin, decreased skin turgor,
  b) dry, coated mucous membranes,
  c) soft, sunken eyes,
  d) elevated temperature,
  e) tachycardia,
  f) hypotension,

g) weight loss,

h) gastrointestinal symptoms of thirst, anorexia or constipation,

i) oliguria to anuria,

j) husky speech,

k) circulatory collapse or shock,

l) weak to atonic muscle tone,

m) disoriented, apprehensive mental status;

n) lethargic, restless behavior.

- check the specific gravity of the urine.

To monitor fluid intake and output, the patient care contract should include:

- write fluid orders for each shift on the kardex (patient care plan or contract), and at the bedside.
- carefully check and record the daily intake and output.
- weigh the client daily.
- give oral fluids greater than the urine output (In the hydrated adult client, an intake of 2500 to 3000 cc should equal approximately 2000 to 2500 cc of urine output in 24 hours to maintain homeostasis).

Patient responsibilities within the contract include:

- make known likes and dislikes.
- ask for assistance when needed.
- involve the client, family, and significant others in recording intake and output.
- notice the amount of urine you have and report any changes.

- request liquids within your diet.
- notice the color of your urine and report any changes.
- know the signs and symptoms of fluid overload and report these to your nurse.
- drink fluids at appropriate times during waking hours to avoid interruptions during sleeping hours.

A related concept to the concept 'force fluids' and a high priority nursing intervention for a client with a fluid volume deficit is the daily intake-output record. Because of its importance in the patient care contract (plan of care), specific parameters should be outlined for measurement of fluids going into the body and those excreted. Accurate intake and output records should include specifically charting if a client is perspiring profusely, listing infusion amounts on the intake-output record when drainage tube irrigations, gastric washings, and bladder irrigations were performed. The intake-output record should be a record of time, amount, and type of all fluids taken in or excreted. Interventions regarding the intake-output record that should be stressed on the record are: the listing of all fluids given orally, especially foods in a semisolid state but which are basically liquid; wound drainage; ileostomy and colostomy discharge; gastrointestinal output such as liquid stools; paracentesis; thoracentesis, and blood loss from any part of the body. In cases of excessive wound drainage, incontinence, or perspiration, dry and wet dressing or linen weights may be taken along with daily weights to have a more complete intake-output record.

An operational definition has its method of measurement clearly spelled out, it is consistent and measurable. According to Walker and Avent (1983), the "method must be so precise that it can be used repetitively by different scientists and still obtain objective results" (p. 71). In dealing with the concept force fluids', the operational definition must be precise in the amount of fluid prescribed by mouth for hydration of the client to maintain homeostasis. "In the hydrated client, an intake of 2500 to 3000 cc should equal approximately 2000 to 2500 cc of urine output in 24 hours to maintain homeostasis" is a precise and appropriate operational definition. It is significant to note that this definition is addressed to the hydrated adult client who has no circulatory or renal malfunctions. Nurses must be instructed so that the amount of fluid required for rehydration of the dehydrated client depends on the size of the client, the amount of fluid lost, and the patient's circulatory and renal status and, therefore, no standard amount can be established for rehydration.

Creative, appropriate, and measurable ways of administering 2500 to 3000 cc of fluid by mouth are:

- give 6-8 (16 ox.) glasses of fluid over 24 hours.
- 1000 cc every 8 hours (day and evenings), and 500 cc at night.
- 8 oz. of fluid every two hours.
- 1500 cc on the 7-3 shift; 800 cc on the 3-1 shift, and 200 cc on the 11-7 shift.
- 30-40 cc/kg. of body weight per day for adults.

In operationally defining the concept 'force fluids', it is important to keep in mind the conceptual definition of the concept as defined by this study, "to increase oral intake by a specified amount". The generally accepted specified amount for maintaining homeostasis in an adult as defined by this study is "2500 to 3000 cc intake in 24 hours with an output of approximately 2000 to 2500 cc". Based on previous statements, requirements for rehydration will vary for each client and require accurate individual nursing judgements for each client whose condition warrants an order to 'force fluids'.

Other parameters that are part of a data base necessary to rationalize an order to force oral fluids and could be incorporated into an operational definition are: a) compare the previous 24 hour intake and output, b) assess the client's previous intake for 8 hours, c) note any drainage, vomiting, or burn losses, and d) assess the signs and symptoms of dehydration and/or overhydration. These parameters are measureable and contribute to the overall assessment and measurement of the rehydrated client.

Outcome criteria are those observable measures by which one will know if the objectives and goals have been accomplished as set forth in the plan of care on the patient care contract. In other words, outcome criteria form the basis for evaluating the success of the plan of care. They determine if the plan of care was successful, and the interventions were relative to alleviate the problem that warranted an order to 'force fluids'. Because outcome criteria can be both positive and negative, they are often related to as 'consequences or incidents' which occur as a result of the concept.

In developing outcome criteria for the concept 'force fluids', hydration was seen as the overall condition that would be visible if the nursing care plan or contract to increase the client's intake by mouth by a specified amount was carried out. Because hydration by itself is ambiguous, measurable signs and symptoms of this state must be present for the concept of hydration to be evaluated. The following criteria serve as measures of hydration:

- skin is warm and dry to touch with skin folds returning to former position at a rapid rate.
- mucous membranes are moist.
- eyes are firm, with no perioribital edema.
- temperature is normal.
- heart rate within client's normal limits.
- neck veins are not distended (the internal jugular venous pulse is 2 cm above the sternal angle, with the head of the bed elevated to 45 degrees).
- blood pressure has less than 20 mm of mercury in the systolic or diastolic reading from supine, sitting, and standing positions.
- no weight gain of more than two pounds in 24 hours.
- no signs of anorexia, vomiting or nausea.
- urinary output is commensurate with intake (2500 to 3000 cc of fluid intake should equal approximately 2000 to 2500 cc of urine in a 24 hour period in the hydrated client).
- bowel movements are soft, formed, and regular.
- speech is normal in tone.

- muscle strength is compatible with activities of daily living.
- mental status is oriented to time, place, and person, and behavior is appropriate for personality.

The goal of the chosen action within the nursing process is always to objectively minimize the negative consequences to the greatest degree possible and to capitalize on those outcomes that are positive. Because outcome criteria can be both positive and negative, negative outcomes must be recognized for this concept as well. These signs and symptoms for overhydration are listed under the plan of action of this conceptual framework (p.). With these possible negative outcomes, attempts should be made to control or help the client control the events responsible so that the negative outcome does not recur.

Criteria provided by this study that contribute to the outcome criteria phase of the conceptual framework for the concept 'force fluids' relate to what is termed accountability. Accountability is the state of being responsible for one's acts and being able to explain, define, or measure in some way the results of decisions made about the client's care. Just believing that a plan of care will make a difference is not enough. Nurses must have criteria that justify both the need for and the effectiveness of their nursing actions.

In outlining this conceptual framework with the schematic diagram of the concept 'force fluids' in mind, several shortcomings of this study surfaced. It is significant to mention that just as assessment, planning, interventions, outcome, and evaluation are the

logical steps in the nursing process, a conceptual framework has a logical progression as well. For example, antecedent conditions that warrant an order to 'force fluids' must also be accompanied by assessment factors that justify this nursing order to 'force fluids', a plan of action to implement the order, an operational definition to measure the action, and outcome criteria to judge the appropriateness of the plan. This progression was not clearly evident in this study as indicated by the large number of antecedent conditions, assessment factors, and nursing interventions (plan of care) as compared to the extremely small number of outcome criteria and operational definitions listed. The large number of responses under 'plan of care' indicate that nurses are still being taught that what is done for the client is more important than perhaps the follow through to the actions completion in operational definitions and outcome criteria. To have a conceptual framework of any concept, each component must have equal weight of importance and all must be clear.

Implications for Nursing

Nursing concepts are evaluated in terms of their usefulness in understanding the meaning of the phenomena that confront nurses and are evaluated in terms of their precision. Their ultimate clarity according to Norris (1982) is represented in an operational definition, a structural model. The conceptual framework is a device for organizing ideas and in turn brings order to related objects, events, observations, and experiences. Because nurses are legally responsible for their actions, operational definitions of nursing terms can provide a mantle of exactness and consistency that will

enhance their ability to evaluate health conditions of clients under their charge. A conceptual framework can provide structure or a perspective for organizing their clinical nursing practice.

Oral fluid therapy is often a nursing order and a treatment that is a challenge to nursing. Prevention and treatment of dehydration is routinely the responsibility of nurses and within the realm of nursing practice. A conceptual framework that includes an operational definition of the concept 'force fluids' is valuable in that it gives nurses some consistency in carrying out the order and parameters by which it can be measured.

In operationally defining the concept 'force fluids' through a conceptual framework, it is believed that this process can and does expand the traditional 'nursing process' means of problem solving in clinical nursing practice. The conceptual framework which includes antecedent conditions forces the nurse to look into possible conditions that would warrant a specific order prior to assessing the client's particular needs. While outcome criteria have always been the measureable component of the nursing process to judge whether the plan of action was successful, in adding the operational definition prior to the outcome criteria in the conceptual framework of a concept, the outcome criteria now specifically spells out a means of measuring the concept with consistency.

Anytime a nursing concept that is ambiguous and lacks a set of parameters by which it can be measured is defined, the body of knowledge of nursing has been expanded. Nurses are demanding that they be allowed to practice independently and with responsibility.

To be legally responsible for their actions, they must operate under a mantle of terms that can be measured consistently. In establishing a conceptual framework for the concept 'force fluids', it is believed that nurses can advance their expertise in clinical practice by adopting a definition that is measureable and consistent.

Recommendations for Future Study

Recommendations for future study are as follows.

1. That nurse educators identify other concepts used in their curriculum that are ambiguous and lack operational definitions and define these. Some consistency of the meaning of clinical nursing terms within a school of nursing will assure some consistency in clinical nurse practice as demonstrated by new graduates.

2. That nurse managers and clinical nurse specialists audit patient care plans and/or patient care contracts to identify which terms or concepts nurses are using consistently, and which of these are used appropriately and are measureable. Those terms that are used consistently but are not appropriate and/or measureable should be abstracted and operational definitions formed that are consistent and prescriptive (measureable) for any given institution.

3. At the national level, professional nurses from all levels of nursing education could pool their list of ambiguous terms in nursing and identify the need to operationally define the terms. A national concept clarification group similiar to the Nursing Diagnoses Conference Group could be formed. When concepts are defined consistently at a national level, they will be taught consistently in nursing schools and be passed on to the health care

institutions and to the client. Some consistency in clinical nursing will be established.

4. That this study be repeated using staff nurses from across the United States to test their knowledge of operational definitions and 'force fluids' and compare this with findings from nurse educators.

5. That the generalizability of this conceptual framework of the concept 'force fluids' be expanded to include pediatrics.

6. That nurses critique plan of actions for their measureability. Each action should be measurable so that they can be consistently instituted.

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Appendices

Appendix A

Phase II: Letter to the Dean

Dear Dean:

As a candidate for the Master's degree in medical-surgical nursing from the University of Kansas College of Health Sciences, School of Nursing, in Kansas City, Kansas, I am conducting a descriptive study using a survey method to gather data from medical-surgical undergraduate nursing coordinators from across the United States, currently teaching in NLN accredited schools.

My study is intended to operationally define the concept of 'force fluids'. Nurses have been using this term routinely in nursing practice with no measurable parameters. My study singles out medical-surgical nurse educators because I believe they have some control over, and are in a position to influence the practice of clinical nursing now and in the future.

This study was addressed to you because your name was listed in the NLN publications listing the accredited schools of nursing for 1982-83. May I ask you to forward the enclosed letter, survey materials, and return envelope to the coordinator of your medical-surgical course, asking his/her participation.

I look forward to hearing from your faculty in this regard and thank you for your assistance.

Sincerely,

Sister Paula Rose Jauernig, R.N., B.S.N.

Appendix B

Explanation of Phase II to Undergraduate Medical-Surgical Nurse Coordinators

Dear Medical-Surgical Coordinator:

As a candidate for a Master's degree in medical-surgical nursing from the University of Kansas College of Health Sciences School of Nursing, in Kansas City, Kansas, I am conducting a descriptive study using a survey method to gather data from medical-surgical undergraduate nursing coordinators from across the United States currently teaching in NLN accredited schools.

It is understood that a number of patients have a diagnosis that requires a nursing or physician order to 'force fluids'. Nurses have been using this term routinely in nursing practice for generations, yet there are no universal parameters defined to measure or to truthfully state that the order has been carried out.

I am asking 102 nursing faculty from across the United States to participate in my study. I invite you to join these medical-surgical educators in forming a definition of the concept 'force fluids' that can be measured.

The survey will have two rounds of responses. The first is enclosed along with a demographic sheet, and a self-addressed, stamped envelope. Read the instructions carefully on the top of the Object Content Test (OCT), try to answer the test independently and in a short period of time, about 15 minutes. Let it be understood that the return of the questionnaire will indicate your consent to participate. If you wish not to participate, please return the blank OCT to me.

Raw data will be accessible only to myself, only group data will be reported, and the name of the participating schools will not be identified in the study. Please do not put your name on the questionnaire. I would ask you to put your name and mailing address where you can be reached on the separate sheet enclosed. This will assist me in forwarding information directly to you in the second phase of the study, and allow me to use the same sample of faculty. The second phase of the survey will contain those categories most mentioned in the OCT, and instructions will accompany that listing.

I look forward to hearing from you in the near future. Should you have any questions regarding the questionnaire or its purpose, please call me at: _____ after 5 p.m. or before 8:30 a.m., or write me at the above address.

Thanking you in advance for your participation in this study.

Sincerely,

Sister Paula Rose Jauernig, R.N., B.S.N.

Appendix C

The Objects Content Test

In the 20 blanks below, please make up 20 statements in response to the sample question (addressed to yourself), "When I see the term 'force fluids' it means?" Answer as if you were giving the answers to yourself, not to someone else. Write your answers in the order they occur to you. Don't worry about logic or complete sentences. Go along fairly fast.

"When I see the term 'force fluids' it means?"

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____

Appendix C (continued)

19. _____

20. _____

Appendix D

Demographic Information

Please circle appropriate responses:

1. Type of nursing school/program you are currently teaching in:

   Associate Degree Diploma Baccalaureate

2. Years in nursing:

   0-5 6-10 11-15 16-20 21-25 26-30 greater than 30

3. Level of education:

   AD Diploma BSN Masters in Nursing

   Masters in another field Ph.D. Ed.D.

4. Actual years of clinical nursing experience (not including those in teaching):

   0-5 6-10 11-15 16-20 21-25 26-30 greater than 30

5. State(s) now licensed to practice in:_____

6. Your age:

   20-25 26-30 31-35 36-40 41-45 46-50 51-55

   56-60 60+

Appendix E

Phase II: Followup Letter to the Dean

Dear Dean:

As of today, I have not received a response from your medical-surgical coordinator to the Object Content Test that is data collection for my research on the concept of 'force fluids'. I understand that as a teacher there are many demands on one's time. I would like, again, to ask you to encourage your medical-surgical coordinator to take a few minutes of his/her time to complete the Object Content Test for my survey originally sent on October 15, 1983. If the survey may have been misplaced, a second copy is enclosed.

My survey was sent to medical-surgical coordinators across the United States. Input from your medical-surgical coordinator into the formation of an operational definition of the concept 'force fluids' is needed to support his/her colleagues' responses in this important definition.

May I ask that you forward the enclosed letter, survey materials, and return envelope to the coordinator of your medical-surgical course, asking his/her participation.

I look forward to hearing from your faculty in this regard and thank you for your kind assistance.

Sincerely,

Sister Paula Rose Jauernig, R.N., B.S.N.

Enc.: 5

Appendix F

Phase II: Followup Letter to Undergraduate

Medical-Surgical Nurse Coordinators

November 5, 1983

Dear Medical-Surgical Coordinator:

On October 15, 1983, I requested the Dean of your medical-surgical program to ask you to participate in the Object Content Test that is data collection for my research on the concept of 'force fluids'. As of today, I have not received your response.

I understand that, as a teacher, you have many responsibilities and demands on your time. I would like, again, to ask for a few minutes of that time and encourage you to complete the OCT for my survey. If you have already completed the survey, please disregard the enclosed. If you have misplaced the survey, a second copy is enclosed for your convenience.

Your input into the formation of an operational definition of the concept 'force fluids' is needed to support your colleagues' responses from across the United States in this important definition.

I look forward to hearing from you in the near future, and thank you again for your help.

Sincerely,

Sister Paula Rose Jauernig, R.N., B.S.N.

Appendix G

Phase III: Letter to the Dean

January 13, 1984

Dear Dean:

Thank you so much for your cooperation thus far in my research study. As you may recall, I am attempting to operationally define the concept of 'force fluids'. The methodology involved two phases for data collection.

With your assistance in passing on my information in Phase II of my study, I received a prompt response from your medical-surgical undergraduate clinical coordinator. However, upon returning my questionnaire, he/she failed to include his/her name so I could return Phase III of the study directly to him/her.

Enclosed you will find Phase III of my data collection along with necessary instructions for your medical-surgical clinical nurse coordinator. May I ask you to forward it to the same faculty member you gave the questionnaire from Phase II of the study.

Thank you so much for your assistance and know that I appreciate all you and your faculty have contributed to this nursing research.

Sincerely,

Sister Paula Rose Jauernig, R.N., B.S.N.

Enc.: 8

Appendix H

Explanation of Phase III to Undergraduate

Medical-Surgical Nurse Coordinators

January 13, 1984

Dear Medical-Surgical Coordinator:

Thank you very much for your participation thus far in my research study. As you will recall, I am attempting to operationally define the concept of 'force fluids'. The methodology involved two phases for data collection.

After my first analysis in Phase II of my study, the overwhelming response of 96% return revealed more information than necessary to operationally define the concept. Because of the data received, my study has been expanded to not only operationally define the concept 'force fluids', but also to analyse the concept of 'force fluids' using those components (categories) included in a conceptual framework. Out of this concept analysis, my aim is to use your responses to clarify, validate, and maintain some consistency among beliefs about 'force fluids'.

Enclosed you will find the components necessary to form a conceptual framework for this concept. Under each heading is a definition for that component as used in my research, an example of that component, and instructions for your response. Please study each list carefully. Some responses may seem more appropriate than others and instructions may vary with each component. Check only those responses you believe fit the definition given. The conceptual definition of 'force fluids' used in this study is defined, "to increase oral fluids to a specified amount."

The responses to this phase of the study will be ranked according to frequency. In the final analysis, those responses selected by subjects in this study will be used to build a validated conceptual framework of the concept 'force fluids' as well as answer my research question, "What is an operational definition of the concept 'force fluids'."

I look forward to hearing from you in the next two weeks. Should I not receive your response in two weeks, a followup letter will be initiated. It is important for the continuity of my study that this phase be returned. Please feel free to call me at this number:

_____ after 5:00 p.m., or write me at the above address should you have further questions.

If you wish any followup information regarding the outcome of the study, please indicate that when you return your responses.

Sincerely,

Sister Paula Rose Jauernig, R.N., B.S.N.

Enc.: 7

Appendix I

Phase III: Followup Letter to the Dean

February 4, 1984

Dear Dean:

As of today, I have not received a response from your medical-surgical coordinator to Phase III of my study that is data collection for my research on the concept of 'force fluids'. I understand that as a teacher, there are many demands on one's time. I would like again to ask you to encourage your medical-surgical coordinator to take a few minutes of his/her time to complete the check list containing data collected from Phase II of my study originally sent on January 13, 1984. If the survey may have been misplaced, a second copy is enclosed.

Phase II of my study was sent to medical-surgical coordinators across the United States. The 96% return on that phase of the study has expanded my study to not only operationally define the concept 'force fluids', but also to analyze the concept of 'force fluids' using those components (categories) included in a conceptual framework. Input from your medical-surgical coordinator into this analysis is needed to support his/her colleagues' responses in this important concept.

May I ask that you forward the enclosed letter, survey materials, and return envelope to the coordinator of your medical-surgical course, asking his/her participation. If the response has already been mailed, please disregard this letter.

I look forward to hearing from your faculty in this regard and thank you again for you kind assistance.

Sincerely,

Sister Paula Rose Jauernig, R.N., B.S.N

Enc.: 8

Appendix J

Phase III: Followup Letter to Undergraduate

Medical-Surgical Nurse Coordinator

February 4, 1984

Dear Medical-Surgical Coordinator:

As of today, I have not received a response from you regarding Phase III of my study that is data collection for my research on the concept of 'force fluids'. I understand that as a teacher, there are many demands on your time. I would like again to ask you to take a few minutes of your time to complete the check list containing initial responses from Phase II of my study originally sent on January 13, 1984. If you may have misplaced the survey, a second copy is enclosed. If you have already sent your response, please disregard this communication.

I look forward to hearing from you in the near future. It is important for the continuity of my study that this phase be returned. Please feel free to call me at this number: _____ after 5:00 p.m. or write me at the above address should you have further questions.

Followup information regarding the outcome of the study will be sent to you if you so indicate when you return the survey.

Thank you for your kind assistance.

Sincerely,

Sister Paula Rose Jauernig, R.N., B.S.N

Enc.

Appendix K

Frequency of Responses in Phase II

Antecedent Conditions (N=175)

1. Medical diagnosis that warrants an order to 'force fluids'.

No. of Responses	% of Total	Antecedent Condition
31	18	Dehydration
11	6.2	Decreased urinary output
11	6.2	Loss of skin turgor
10	6%	Vomiting
10	6	Elevated temperature
9	5	Circulatory collapse or shock
8	4.5	Dry oral mucosa
7	4	Problem with fluid intake/output
7	4	Infections
6	3.4	Thick respiratory secretions
6	3.4	Kidney stones
4	2.2	Disturbance in body fluid distribution or body fluid imbalance
4	2.2	Upper respiratory infection
4	2.2	Hypovolemia
3	1.7	Flushed, dry, warm skin
3	1.7	Diarrhea
3	1.7	Electrolyte imbalance
3	1.7	Poor fecal output (constipation)

Appendix K (continued)

Antecedent Conditions

1. Medical diagnosis that warrants an order to 'force fluids'.

No. of Responses	% of Total	Antecedent Condition
3	1.7	Elevated BUN
2	1.1	Tachycardia
2	1.1	Sunken eyes
2	1.1	Diaphoretic
2	1.1	Genitourinary surgery
2	1.1	Concentrated urine
1	.57	Hypercalcemia
1	.57	Hypernatremia
1	.57	Change in neuro status
1	.57	Lethargic, restless, apprehensive
1	.57	Weak/atonic muscles
1	.57	Weight loss
1	.57	Husky speech
1	.57	Low blood pressure
1	.57	Insufficient circulation
1	.57	Dsyphasia and/or mental confusion
1	.57	Signs & symptoms of dehydration

2. Need to increase fluid for 'normal' reasons (N=37)

No. of Responses	% of Total	Antecedent Condition
11	30	Indwelling urethral catheter

Appendix K (continued)

2. Need to increase fluid for 'normal' reasons

No. of Responses	% of Total	Antecedent Condition
9	23	Need to 'flush out kidneys
6	16	Cytoxan therapy
4	11	Need to prepare for diagnostic test
3	8	Taking sulfa drugs
1	3	I.V.'s recently D.C.'d
1	3	Breast feeding
1	3	Blood donor
1	3	Cisplatinum therapy

Assessment Factors

1. Factors that are part of a data base necessary to rationalize an order to force p.o. fluids. (N=195)

No. of Responses	% of Total	Assessment Factors
36	18	Assess hydration status of client
21	11	Electrolyte and Hct values,... "Are they in balance?"
21	11	Weigh the patient
18	9	Observe for dehydration
11	6	Check specific gravity of urine
10	5	Observe for fluid overload, tachycardia
10	5	Monitor respiratory status and blood pressure
10	5	Assess client's previous intake for 8 hours

Appendix K (continued)

1. Factors that are part of a data base necessary to rationalize an order to force p.o. fluids.

No. of Responses	% of Total	Assessment Factors
9	4.6	Assess skin turgor
7	3.5	Problems (rationale) for fluid losses
6	3	Potential for edema (overhydration)
6	3	Evaluate mucous membranes
6	3	What medications is the client on?
6	3	Compare previous 24 hours intake and output
6	3	Why are 'force fluids' ordered?
3	1.5	Assess neuro status of client
3	1.5	Are there any reasons for fouid restrictions?
2	1	Evaluate condition of eyeballs
2	1	Parameters for measuring insensible losses
1	.5	Note any drainage, vomiting, burn losses
1	.5	Are fluids shutting off feedback mechanism to pituitary?

2. What nurses must do once 'force fluids' are instituted. (N=113)

No. of Responses	% of Total	Assessment Factors
54	48	Client's likes/dislikes
11	10	Are there any fluids contraindicated?

Appendix K (continued)

2. What nurses must do once 'force fluids' are instituted.

No. of Responses	% of Total	Assessment Factors
10	9	To what level does the physician want fluids increased?
9	8	Can the client obtain fluids on own?
6	5	What kind of fluids? (tube feedings, I.V.'s, hot, cold water, etc.)
5	4	Is the GI tract functioning? Can fluids be taken p.o.?
4	3.5	Does the client know how to 'force fluids', how much, and why?
4	3.5	Administer p.o./I.V. fluids to meet daily needs as well as make up for daily excessive losses.
3	3	Have accurate and available equipment at bedside to measure I & O.
3	3	Does the client depend on others for intake?
3	3	What type of diet is the client on?
1	.88	What are best hours for increasing intake?

Plan of Action (Patient Care Contract)

1. Nursing responsibilities within the contract. (N=515)

No. of Responses	% of Total	Actions
62	12	Careful check and recording of daily I & O.

Appendix K (continued)

1. Nursing responsibilities within the contract.

No. of Responses	% of Total	Actions
52	10	Explain to the client, family, and significant others the need to increase the client's p.o. intake and why.
39	8	Encourage more fluids than the client has bween taking.
25	5	Formulate a plan for fluid therapy.
24	4.6	Consider other fluid sources (jello, sherbet, popsicles, broth, etc.)
24	4.5	Offer fluids every hour
23	4.4	Have fresh water and other fluids at the bedside
23	4.4	Write fluid orders/shift on kardex (care plan) and at the bedside
21	4	Weigh the client
21	4	Outline signs & symptoms of overhydration and monitor carefully
18	3.4	Offer the client as much fluid as he/she can take
18	3.4	Observe for signs & symptoms of dehydration
12	2.3	Monitor client's condition to determine whether specific goals of increased fluids are being met

Appendix K (continued)

1. Nursing responsibilities within the contract.

No. of Responses	% of Total	Actions
11	2.1	Offer extra fluids with meals, request extra fluids with meals
11	2.1	Give more than the patient can tolerate
9	1.7	Offer fluids everytime you go into the room
9	1.7	Give p.o. fluids greater than urine output
9	1.7	Offer juices, etc., between meals
8	1.5	Offer foods with lots of water in them
7	1.3	Physically bring in a pitcher of water, juice, etc., and watch the client drink
7	1.3	Follow medications with a full glass of juice, water, etc.
7	1.3	Maintain fluids at bedside at best temperature for the client
7	1.3	Monitor the respiratory status and blood pressure every shift
7	1.3	Check the specific gravity of urine
6	1.1	Make fluids attractive and creative
5	.97	Make special effort for person to have p.o. fluids and intake on 11-7 shift

Appendix K (continued)

1. Nursing responsibilities within the contract.

No. of Responses	% of Total	Actions
5	.97	Take time to assist the client with drinking
5	.97	Instruct the family and significant others to offer fluids frequently
5	.97	Be sure fluids are available to the client
4	.77	Increase the amount of fluids given to the patient
3	.58	Talk the client into drinking more fluids when he is 'thirsty'
3	.58	Does the client understand the need to force fluids, the amount, when, and why?
2	.38	Give 6 to 8 (16 oz.) glasses of fluid/24 hours
2	.38	Help the client with fluids when he/she cannot help him or herself
2	.38	Involve team members in plan of care, explain importance of 'force fluids'
2	.38	Give verbal recognition when client increases his/her fluid intake
2	.38	Give verbal recognition to team members for increasing client's intake
1	.19	Give the client a fluid challenge of 1000 cc on your shift

Appendix K (continued)

1. Nursing responsibilities within the contract.

No. of Responses	% of Total	Actions
1	.19	Offer fluids every two hours
1	.19	Offer water every 30 minutes
1	.19	"Jam it down his/her throat"
1	.19	'Force' implies unintentional tact may be needed
1	.19	Replace both fluids and electrolytes

2. Patient responsibilities of care contract. (N=95)

No. of Responses	% of Total	Actions
54	57	Make known likes and dislikes
22	23	Involve the client, family, and significant others in recording intake and output
5	5.2	Drink fluid every hour
5	5.2	Ask for assistance when needed
3	3.1	Notice the color of your urine and report any changes
2	2.1	Know the signs and symptoms of fluid overload and report these to your nurse
2	2.1	Notice amount of urine you have and report any changes
1	1	Drink water but not coffee
1	1	Request liquids within diet restrictions

Appendix K (continued)

Operational Definition (N=94)

No. of Responses	% of Total	Operational Definitions
30	32	2500 to 3000 cc/24 hrs.
16	17	50 cc/hour
4	4.3	2000 ml/24 hours
4	4.3	1500 to 3000 cc/day
4	4.3	1000 cc/8 hrs. (day & evenings); 500 cc/nights
3	3.1	1 glass (8 oz./240 cc) fluid every 1-2 hrs. while awake in addition to meal beverages
3	3.1	100 cc/hour
3	3.1	30-40 cc/kg. weight/day (2000 to 3000 cc) for adults if not contraindicated
3	3.1	120 cc/2-3 hours
2	2.1	8 oz. fluid every 2 hours
2	2.1	Heart rate no greater than 10 above client's base line
2	2.1	Fluid intake for an adult should be adequate (approx. 2500 to 3000 cc/24 hrs.) to maintain homeostasis
2	2.1	Give 6 to 8 (16 oz.) glasses of fluid over 24 hr. period
1	1	Heart rate within client's normal limit
1	1	Encourage fluids (1-2 glasses) every hour of the day until 4 p.m. and then gradually decrease in evening hours

Appendix K (continued)

Operational Definition

No. of Responses	% of Total	Operational Definitions
1	1	Breath sounds are clear
1	1	No abnormal weight gain
1	1	200 cc/hour
1	1	30 cc/hour
1	1	No weight gain greater than 2 lbs. above normal body weight in 24 hours
1	1	Intake adequate to produce 75 cc output/hour
1	1	No adventitious breath sounds
1	1	1000 cc above normal amount for hydration
1	1	In the hydrated client, an intake of 2500 to 3000 cc should equal approx. 2000 to 2500 cc of urine output in 24 hrs. (homeostasis)
1	1	1500 cc on 7-3 shift; 800 cc on 3-11 shift; 200 cc on 11-7 shift
1	1	Intake to maintain hydration 'normal' plus make up loss

Outcome Criteria (N=62)

No. of Responses	% of Total	Outcome Criteria
20	32	Overhydration
19	31	Hydration
5	8	Serum electrolytes are normal

Appendix K (continued)

Outcome Criteria

No. of Responses	% of Total	Outcome Criteria
4	6	Congestive heart failure
3	5	Body weight is stable
3	5	Pale urine
3	5	Urine output is 500 cc greater than intake
2	3	Vital signs are within normal limits for the client
1	1	Ascites
1	1	Hypercalcemia
1	1	Good kidney function

Appendix L

Selected Categories Sheet

ANTECEDENT CONDITIONS

The responses I received from the OCT contained many potential antecedent conditions. Antecedent conditions are, "those events or incidents which must occur prior to the occurance of the concept" (Walker & Avant, 1983, p. 33). In other words, those conditions that must be present to warrant a nursing/physician order to force P.O. fluids. For example, an order to care for a client with an indwelling urethral catheter might read, "Force P.O. fluids to 3000 ml daily unless contraindicated" (indwelling urethral catheter being the antecedent condition).

Please put a (✓) by those conditions you believe warrant an order to 'force fluids'.

1. Medical diagnosis that warrants an order to 'force fluids'.

_____problem with fluid intake/output

_____disturbance in body fluid distribution or body fluid imbalance

_____kidney stones

_____decreased urinary output

_____elevated temperature

_____insufficient circulation

_____low blood pressure

_____electrolyte imbalance

_____genito-urinary surgery

_____hypovolemia

_____diarrhea

_____concentrated urine

_____dry oral mucosa

_____loss of skin turgor

_____dsyphasia and/or mental confusion

_____upper respiratory infection

_____flushed, dry, warm skin

_____weight loss

_____husky speech

_____elevated BUN

_____signs and symptoms of dehydration

_____hypercalcemia

_____diaphoretic

_____poor fecal output (constipation)

_____hypernatremia

_____dehydration

_____sunken eyes

_____vomiting

_____change in neuro status

_____circulatory collapse or shock

_____renal problems

_____infections

_____thick respiratory secretions

_____tachycardia

_____lethargic, restless, apprehensive

_____weak/atonic muscles

2. Need to increase fluids for 'normal' reasons

_____I.V.'s recently D.C.'d

_____indwelling urethral catheter

_____breast feeding

_____cisplatinum therapy

_____need to 'flush out kidneys'

_____cytoxan therapy

_____taking sulfa drugs

_____need to prep. for diagnostic test

_____blood donor

Appendix L (continued)

ASSESSMENT FACTORS

The responses I received from the OCT contained many potential assessment factors. These assessment factors are part of a data base necessary to formulate a plan of care that rationalizes an order to 'force fluids' and what nurses must do once the order to 'force fluids' has been instituted. For example, the data base contains assessment information that indicated the client has dry mucous membranes, which indicates a possible fluid deficit.

Please put a (✓) by those factors you believe necessary to rationalize an order to 'force fluids' and then by those factors you believe nurses must consider once an order to force o.o. fluids has been instituted.

1. Factors that are part of a data base necessary to rationalize an order to force p.o. fluids.

_____potential for edema (overhydration)
_____evaluate mucous membranes
_____assess hydration status of client
_____assess neuro status of client
_____assess skin turgor
_____note any drainage, vomiting, burn losses
_____electrolyte and Hct. values, ..."are they in balance?"
_____what medications is the client on?
_____assess client's previous intake for 8 hours
_____compare previous 24 hour intake and output
_____are fluids shutting off feedback mechanism to pituitary
_____observe for fluid overload, tachycardia
_____monitor respiratory status and blood pressure
_____check specific gravity of urine
_____parameters for measuring insensible losses
_____are there any reasons for fluid restrictions?
_____why are 'force fluids' ordered
_____problems (rationale) for fluid losses
_____observe for dehydration
_____weigh the patient
_____evaluate condition of eyeballs

2. What nurses must do once 'force fluids' are instituted.

_____Administer p.o./I.V. fluids to meet daily needs as well as make up for daily excessive losses.
_____Have accurate and available equipment at bedside to measure I & O.
_____Can the client obtain fluids on own?
_____Does the client depend on others for intake?
_____Does the client know how to 'force fluids', how much, and why?
_____What are best hours for increasing intake?
_____Is the G.I. tract functioning? Can fluids be taken p.o.?
_____Client's likes/dislikes
_____Are there any fluids contraindicated?
_____To what level does the physician want fluids increased?
_____What type of diet is the client on?
_____What kind of fluids? (tube feedings, I.V.'s, hot, cold, water, etc.)

Appendix L (continued)

OUTCOME CRITERIA

The responses I received from the OCT contained many potential outcome criteria for the concept 'force fluids'. Outcome criteria according to Mitchell and Loustau (1981), are "Those observable measures by which one will know if the objectives and goals have been accomplished" (p. 83). In other words, outcome criteria form the basis for evaluating the success of the plan of care. It determines if the plan of care was successful and interventions were relative to alleviate the problem. Because outcome criteria can be both positive and negative, they are often related to as 'consequences or incidents' which occur as a result of the concept.

An example can be seen in the short-term goals for the client who was to lose 2 lbs. each week. The expected effects (outcome criteria or consequences) from the interventions (objectives) of eating no more than 1500 cal/day and walking 30 min. each day was that the client would lose 2 lbs. each week. If 2 lbs. have been lost/week...the expected outcome has been met.

Please put a (✓) by those factors you believe would be observable measures that the order to 'force fluids' has been carried out.

_____congestive heart failure

_____ascites

_____serum electrolytes are normal

_____vital signs are within normal limits for the client

_____hypercalcemia

_____hydration

_____body weight is stable

_____pale urine

_____overhydration

_____urine output is 500 cc greater than intake

_____good kidney function

Appendix L (continued)

OPERATIONAL DEFINITION

The responses received from the OCT contained many potential operational definitions for the concept 'force fluids'. An operational definition has its method of measurement clearly spelled out, it is consistent and measurable. According to Walker and Avent (1983), the "method must be so precise that it can be used repetitively by different scientists and still obtain objective results" (p. 71). For example, an operational definition for the concept 'vomiting' is: "Liquid and/or semisolid matter that represents the stomach contents is ejected through the mouth. Simultaneously with this ejection, the diaphragm and abdominal muscles contract in unison" (Norris, 1982, p. 103).

Please put a ( ) by those factors you believe should be included in a narrative definition that operationally defines the concept of 'force fluids'.

_____give 6 to 8 (16 oz.) glasses over 24 hour period

_____fluid intake for an adult should be adequate (approximately 2500 to 3000 cc/24 hours) to maintain homeostasis

_____2500 to 3000 cc/24 hours

_____heart rate within client's normal limit

_____one glass (8 oz./240cc) fluid every 1-2 hours while awake in addition to meal beverages

_____encourage fluids (1-2 glasses) every hour of the day until 4 p.m. and then gradually decrease in evening hours

_____breath sounds are clear

_____2000 ml/24 hours

_____adults should get 100 cc/hour

_____8 oz. fluid every 2 hours

_____no abnormal weight gain

_____1500 to 3000 cc/day

_____200 cc/hour

_____30 cc/hour

_____no weight gain greater than 2 lbs. above normal body weight in 24 hours

_____100 cc/hour

_____intake adequate to produce 75 cc urine output/hour

_____1000 cc/8 hours (day & evenings); 500 cc/nights

_____30-40 cc/kg. wt./day (2000-3000 cc) for adult if not contraindicated

_____no adventitious breath sounds

_____1000 cc above normal amount for hydration

_____120 cc/2-3 hours

_____heart rate no greater than 10 above client's base line

_____50 cc/hour

_____in the hydrated client, an intake of 2500 to 3000 cc should equal approximately 2000 to 2500 cc of urine output in 24 hours (homeostasis)

Appendix L (continued)

PLAN OF ACTION (PATIENT CARE CONTRACT)

The responses I received from the OCT contained many nursing action statements that could be incorporated in a patient care contract once an order to force fluids had been instituted. A patient care contract according to Chinn (1983), is a "mutual agreement of nurse and client that performs the following activities: 1) clarifies the roles and responsibilities of the client, 2) identified the roles and responsibilities of the nurse, 3) assists in establishing mutually agreed upon roles and responsibilities, and 4) assigns appropriate level(s) of client self-care fy identifying the client's placement on the self-care continuum" (p. 11).

Please put a (✓) by those factors you believe to be nursing and patient responsibilities in developing a patient contract to carryout the order to force p.o. fluids that can be measured.

1. Nursing responsibilities within the contract include providing technical care and maintaining life processes, teaching about health and promoting growth and development, serving as a client advocate, supporting and facilitating decision making and actions to be taken, creating a safe environment conducive to optimal self-care, evaluating and reassessing continually, and promoting client responsibility for health care (Chinn, 1983, p. 115).

_____have fresh water and other fluids at the bedside

_____offer the client as much fluid as he/she can take

_____physically bring in a pitcher of water, juice, etc. and watch the client drink

_____offer extra fluids with meals, request extra fluids on trays

_____give 6 to 8 (16 oz.) glasses of fluid/24 hours

_____offer fluids every time you go into the room

_____make special effort for person to have p.o. fluids and intake on 11-7 shift

_____consider other fluid sources (jello, sherbet, popsicles, broth, etc.)

_____monitor client's condition to determine whether specific goals of increased fluids is being met

_____talk the client into drinking more fluids when he is "thirsty"

_____help the client with fluids when he/she cannot help him/herself

_____weigh the client

_____offer juices, etc. between meals

_____follow medications with a full glass of juice, water, etc.

_____involve team members in plan of care, explain importance of 'force fluids'

_____give verbal recognition when client increases his/her fluid intake

_____give verbal recognition to team members for increasing client's intake

_____write fluids orders/shift on Kardex (care plan) and at bedside

_____formulate a plan for fluid therapy

_____maintain fluids at bedside at best temperature for client

_____take time to assist the client with drinking

_____give p.o. fluids greater than urine output

_____give the client a fluid challenge of 1000 cc on your shift

_____monitor the respiratory status and blood pressure every shift

_____check the specific gravity of urine

_____offer fluids every two hours

Appendix L (continued)

PLAN OF ACTION (PATIENT CARE CONTRACT)

_____make fluids attractive and creative

_____offer more water than other types of fluids

_____encourage more fluids than the client has been taking

_____offer fluids every hour

_____offer foods with lots of water in them

_____explain to the client, family, and significant others the need to increase the client's p.o. intake and why

_____does the client understand the need to force fluids, the amount, when, and why?

_____instruct the family and significant others to offer fluids frequently

_____observe for signs and symptoms of dehydration

_____offer water every 30 minutes

_____give more than the patient can tolerate

_____"jam it down his/her throat"

_____'force' implies unintentional tact may be needed

_____outline signs and symptoms of overhydration and monitor carefully

_____careful check and recording of daily I & O

_____replace both fluids and electrolytes

_____increase the amount of fluids given to the patient

_____be sure fluids are available to the client

2. Patient responsibilities according to Chinn (1983) within the contract is based initially on the clients' identification of the ability they have and/or responsibility they want for their onw health care. The client's self-carel potential is determined by assessing his/her ability and willingness to take responsibility for: 1) making decisions about their own health care, 2) formulating personal health goals, 3) initiating requests for health related interventions, and 4) adapting and employing health skill behaviors. The clients' ability to determine the level of responsibility to be taken, according to Chinn (1983), is related to the data collected and analyzed during the assessment step.

_____involve the client and family/significant others in recording intake and outout

_____make known likes and dislikes

_____drink fluid every hour

_____drink water but not coffee

_____request liquids within diet restrictions

_____ask for assistance when needed

_____know the signs and symptoms of fluid overload and report these to your nurse

_____notice the color of your urine and report any changes

_____notice the amount of urine you have and report any changes

Appendix M

Definition of Nurse Experts

Nurse A

Nurse A had a Master's of science in nursing and was a clinical nursing instructor at the graduate level. Content analysis of nursing terms was part of her curriculum. She had 17 years of clinical practice and remained active. She was currently working on her doctorate in physiology.

Nurse B

Nurse B had a Master's in nursing and a doctor of education. She had recently completed her doctoral dissertation on concept analysis. Content analysis of nursing terms was part of her curriculum at the graduate level. She had 10 years of clinical practice in nursing and remained active.

Nurse C

Nurse C had a Master's of science in nursing and a doctorate in nursing. She was actively teaching nursing theory and concept analysis at the Master's and doctoral levels. Her doctoral dissertation was on concept analysis and theory development for nursing. She had 20 years of clinical practice in nursing and remained active.

In Summary

All three nurse experts used in this study for judging interrater reliability were currently employed at a midwestern school of nursing and college of health sciences. Clinically, they had all dealt with the concept 'force fluids'.

Appendix N

Phase III: Frequency of Responses to Selected Category Sheet

(N = 81)

Antecedent Conditions

1. Medical diagnosis that warrants an order to 'force fluids'.

No. of Responses	% of Total	Antecedent Condition
75	93	signs & symptoms of dehydration
71	88	dehydration
69	85	kidney stones
67	83	elevated temperature
67	83	dry oral mucosa
66	82	thick respiratory secretions
66	82	concentrated urine
60	74	poor fecal output (constipation)
56	69	loss of skin turgor
55	68	diarrhea
53	65	upper respiratory infection
51	63	genitourinary surgery
46	57	diaphoretic
46	57	sunken eyes
44	54	hypovolemia
43	53	infections
40	49	flushed, dry, warm skin
36	44	problem with fluid intake/output
32	40	decreased urinary output

Appendix N (continued)

Antecedent Conditions

1. Medical diagnosis that warrants an order to 'force fluids'.

No. of Responses	% of Total	Antecedent Condition
28	35	hypercalcemia
26	32	hypernatremia
21	26	disturbance in body fluid distribution or body fluid imbalance
16	20	elevated BUN
16	20	low blood pressure
16	20	electrolyte imbalance
15	19	vomiting
14	17	renal problems
11	14	weight loss
10	12	dsyphasia and/or mental confusion
9	11	insufficient circulation
9	11	circulatory collapse or shock
4	5	lethargic, restless, apprehensive
3	4	weak/atonic muscles
3	4	husky speech
2	2	tachycardia
2	2	change in neuro status

Appendix N (continued)

Antecedent Conditions

2. Need to increase fluid for 'normal' reasons.

No. of Responses	% of Total	Antecedent Condition
73	90	taking sulfa drugs
71	88	indwelling urethral catheter
65	80	breast feeding
52	64	I.V.'s recently D.C.'s
49	60	blood donor
45	56	cytoxan therapy
45	56	need to 'flush out kidneys'
42	52	cisplatinum therapy
33	41	need to prepare for diagnostic test

Assessment Factors

1. Factors that are part of a data base necessary to rationalize an order to force oral fluids.

No. of Responses	% of Total	Assessment Factors
74	91	what medications is the client on
72	89	compare previous 24 hour intake and output
72	89	assess hydration status of client
72	89	assess skin turgor
69	85	weigh the patient
68	84	note any drainage, vomiting, burn losses

Appendix N (continued)

Assessment Factors

1. Factors that are part of a data base necessary to rationalize an order to force oral fluids.

No. of Responses	% of Total	Assessment Factors
68	84	observe for dehydration
67	83	are there any reasons for fluid restrictions?
67	83	evaluate mucous membranes
66	81	why are 'force fluids' ordered?
65	80	electrolyte and Hct. values,... "are they in balance?"
63	78	check specific gravity of urine
59	73	assess client's previous intake for 8 hours
58	72	observe for fluid overload, tachycardia
57	70	monitor respiratory status and blood pressure
57	70	problems (rationale) for fluid losses
54	67	potential for edema (overhydration)
52	64	evaluate condition of eyeballs
49	60	parameters for measuring insensible losses
48	59	assess neuro status of client
23	28	are fluids shutting off feedback mechanism of pituitary?

Appendix N (continued)

Assessment Factors

2. What nurses must do once 'force fluids' are instituted.

No. of Responses	% of Total	Assessment Factors
79	98	Have accurate and available equipment at bedside to measure I & O
77	95	Is the GI tract functioning? Can fluids be taken p.o.?
76	94	Are there any fluids contraindicated?
75	93	Client's likes/dislikes
74	91	What kind of fluids? (tube feedings, IV's, hot, cold water, etc.)
74	91	Does the client know how to 'force fluids'? How much and why?
73	90	Does the client depend on others for intake?
73	90	To what level does the physician want fluids increased?
72	89	Can the client obtain fluids on own?
67	83	What are best hours for increasing intake?
66	81	Administer p.o./IV fluids to meet daily needs as well as make up for daily excessive losses
63	78	What type of diet is the client on?

Appendix N (continued)

Plan of Action (Patient Care Contract)

1. Nursing responsibilities within the contract.

No. of Responses	% of Total	Actions
77	95	Explain to the client, family, and significant others the need to increase the client's p.o. intake and why.
75	93	Have fresh water and other fluids at the bedside.
76	94	Consider other fluid sources (jello, sherbet, popsicles, broth, etc.)
76	94	Careful check and recording of daily I & O
75	93	Help the client with fluids when he/she can cannot help him/herself.
75	93	Write fluid orders/shift on kardex (care plan) and at bedside.
74	91	Make fluids attractive and creative.
73	90	Monitor client's condition to determine whether specific goals of increased fluids is being met.
72	89	Involve team members in plan of care, explain importance of 'force fluids'.
71	88	Give verbal recognition when client increases his/her fluid intake.
71	88	Does the client understand the need to force fluids, the amount, when, and why?

Appendix N (continued)

Plan of Action (Patient Care Contract)

1. Nursing responsibilities within the contract.

No. of Responses	% of Total	Actions
69	85	Weigh the client
69	85	Maintain fluids at bedside at best temperature for the client.
68	84	Give verbal recognition to team members for increasing client's intake.
67	83	Take time to assist the client with drinking.
66	81	Formulate a plan for fluid therapy.
64	79	Monitor the respiratory status and blood pressure every shift.
59	73	Outline signs and symptoms of overhydration and monitor carefully.
58	72	Offer juices, etc., between meals.
56	69	Be sure fluids are available to the client.
55	68	Instruct the family and significant others to offer fluids frequently.
54	67	Check the specific gravity of urine.
53	65	Observe for signs and symptoms of dehydration.
51	63	Follow medications with a full glass of juice, water, etc.

Appendix N (continued)

Plan of Action (Patient Care Contract)

1. Nursing responsibilities within the contract.

No. of Responses	% of Total	Actions
45	56	Offer extra fluids with meals, request extra fluids on trays.
41	51	Make special effort for person to have p.o. fluids and intake on 11-7 shift.
37	46	Replace both fluids and electrolytes.
33	41	Offer fluids everytime you go into the room.
27	33	Physically bring in a pitcher of water, uice, etc. and watch the client drink.
26	33	Give p.o. fluids greater than urine output.
25	31	Increase the amount of fluids given to the patient.
24	30	Offer foods with lots of water in them.
24	30	Encourage more fluids than the client has been taking.
22	27	Talk the client into drinking more fluids when he/she is 'thirsty'.
23	28	Offer the client as much fluid as he/she can take.
18	22	Offer fluids every two hours.
17	21	Give 6 to 8 (16 oz.) glasses of fluid/24 hours.
16	20	Offer fluids every hour.

Appendix N (continued)

Plan of Action (Patient Care Contract)

1. Nursing responsibilities within the contract.

No. of Responses	% of Total	Actions
11	14	Offer more water than other types of fluids.
9	11	Give the client a fluid challenge of 1000 cc on your shift.
4	5	Offer water every 30 minutes.
0	0	Give more than the patient can tolerate.
0	0	"Jam it down his/her throat".
0	0	'Force' implies unintentional tact may be needed.

2. Patient responsibilities within the contract.

No. of Responses	% of Total	Actions
79	98	Make known likes and dislikes.
76	94	Ask for assistance when needed.
68	84	Involve the client, family, and significant others in recording intake and output.
63	78	Notice the amount of urine you have and report any changes.
62	77	Request liquids within diet restrictions.
59	73	Notice the color of your urine and report any changes.

Appendix N (continued)

Plan of Action (Patient Care Contract)

2. Patient responsibilities within the contract.

No. of Responses	% of Total	Actions
56	69	Know the signs and symptoms of fluid overload and report these to your nurse.
34	42	Drink fluid every hour.
9	11	Drink water but not coffee.

Operational Definitions

No. of Responses	% of Total	Operational Definitions
44	54	Fluid intake for an adult should be adequate (approx. 2500 to 3000 cc/24 hours to maintain homeostasis.
37	46	In the hydrated client, an intake of 2500 to 3000 cc should equal approx. 2000 to 2500 cc of urine output in 24 hours (homeostasis).
35	43	Breath sounds are clear.
31	38	No weight gain greater than 2 lbs. above normal body weight in 24 hours.
27	33	No abnormal weight gain.
26	32	Heart rate within client's normal limit.
25	31	2500 to 3000 cc/24 hours.
20	25	No adventitious breath sounds.

Appendix N (continued)

Operational Definitions

No. of Responses	% of Total	Operational Definitions
20	25	One glass (8oz./240 cc) fluid every 1-2 hours while awake in addition to meal beverages.
20	25	Encourage fluids (1-2 glasses) every hour of the day until 4 p.m. and then gradually decrease in evening hours.
19	23	30-40 cc/kg. weight/day (2000 to 3000 cc) for adult if not contraindicated.
18	22	Intake adequate to produce 75 cc of urine output/hour.
16	20	Give 6 to 8 (16 oz.) glasses of fluid over 24 hour period.
13	16	1000 cc above normal amount for hydration.
13	16	1000 cc/8 hours (day & evenings); 500 cc/nights.
8	10	8 oz. fluid every two hours.
6	7	Heart rate no greater than 10 above client's base line.
5	6	100 cc/hour.
5	6	1500 to 3000 cc/day.
5	6	Adults should get 100 cc/hour.
4	5	200 cc/hour.
3	4	200 ml/24 hours.
2	2	30 cc/hour.
2	2	120 cc/2-3 hours.

Appendix N (continued)

Operational Definitions

No. of Responses	% of Total	Operational Definitions
2	2	50 cc/hour.
1	1	1500 cc on the 7-3 shift; 80 cc on the 3-11 shift; 200 cc on 11-7 shift.
1	1	Intake to maintain hydration 'normal' plus make up loss.

Outcome Criteria

No. of Responses	% of Total	Outcome Criteria
71	88	Hydration.
63	78	Vital signs are within normal limits for the client.
54	67	Body weight is stable.
52	64	Serum electrolytes are normal.
46	57	Pale urine.
44	54	Good kidney function.
22	27	Urine output is 500 cc less than intake.
6	7	Overhydration.
4	5	Ascites
3	4	Congestive heart failure.
3	4	Moist mucous membranes.
1	1	Hypercalcemia.
1	1	Increased intake on I & O record.

Appendix N (continued)

Outcome Criteria

No. of Responses	% of Total	Outcome Criteria
1	1	Improved skin turgor.
1	1	Createnine and BUN within normal limits.