Title
Effect of telephone postpartum follow-up

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Publication Date
1988

Peer reviewed|Thesis/dissertation

Effect of Telephone Postpartum Follow-up: A Clinical Trial

by

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DISSERTATION

Submitted in partial satisfaction of the requirements for the degree of

DOCTOR OF NURSING SCIENCE

in the

GRADUATE DIVISION

of the

UNIVERSITY OF CALIFORNIA

San Francisco

Date University Librarian

Degree Conferred: JAN 3 1989

ACKNOWLEDGEMENTS

This study was made possible by the generous support provided by a National Research Service Award, Grant #1F31NU05869-01, Division of Nursing, United States Department of Health and Human Services; a 1987 Research Award, The Nurses Association of the American College of OB-GYN (NAACOG), funded by the Borning Corporation; and the Department of Nursing, University of California, Irvine, Medical Center.

For consultation, critique and mentoring toward scholarliness, the immense contributions of Drs. Katharyn May, Ramona Mercer and Susan Gortner are gratefully acknowledged.

Special appreciation is extended to Dr. Kathryn Barnard for her longstanding consultation and inspiration; for generously permitting access to and use of several methodological resources for this study.

The contributions of my colleagues in graduate study to my thinking and research are deeply appreciated, especially acknowledged are Sally Rankin and Brenda Bailey who have paced and challenged my growth, set a standard for excellence and provided critical support.

Marta Ehling R.N., M.S.N. was an invaluable research assistant. Her commitment to this study and steadfast effort over six months of subject accrual cannot be praised highly enough. Special thanks to the Kathy Todd and the 2-Tower staff at UCIMC whose interest and support was essential.

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I am indebted to Dr. Judith Lewis and my colleagues at The Statewide Nursing Program, California State University, Dominguez Hills, for their great gifts of encouragement and support.

The priceless and generous contributions of the postpartum women who were willing to share their postpartum adaptive journey are deeply appreciated.

Dr. William Michael and James Dunlap provided essential and valuable statistical analysis consultation.

Finally, for Steve, Kristin and Kevin, there are simply no words to express sufficient appreciation for the unconditional support, love, patience, and assistance which made this work possible in a timely and joyous manner. With their help, the impossible became possible.

ABSTRACT

EFFECT OF TELEPHONE POSTPARTUM FOLLOW-UP: A CLINICAL TRIAL

Nancy E. Donaldson

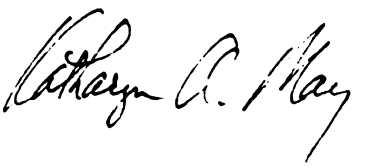
In a prospective, unmasked, clinical trial, 39 low risk primiparous postpartum women were randomly assigned to one of two study groups. Study mothers were living with the father of their healthy newborns, and ranged in age from 18-37 years. Group I mothers received six weekly nurse-initiated postpartum follow-up telephone contacts following hospital discharge. Group II mothers received standard postpartum follow-up nursing care. The purposes of this study were: 1) to explicate a postpartum follow-up telephone clinical nursing protocol, and 2) to conduct a preliminary clinical test of the effect of the protocol on maternal adaptation during the first eight weeks postpartum.

The treatment, telephone-based postpartum follow-up nursing care, was based on specific objectives for maternal adaptation during the first two months postpartum gleaned from the literature and entailed explicit nursing assessment and intervention content. While structured in content, the experimental treatment was individualized in implementation. The integrity of the independent variable was monitored by coding the topics discussed and nursing actions taken during each telephone contact on a nursing care record sheet, with elaboration in the form of narrative notes.

The dependent variable, maternal postpartum adaptation, was operationalized as maternal reported mood disturbance, maternal sense of competence as a parent and maternal

developmental expectations. Data collection occurred at 8 weeks postpartum using mailed self-report measures. Standardized instruments included Profile of Mood States (POMS) (McNair, Lorr, & Droppleman, 1971), Parental Sense of Competence Scale (PSOC) (Gilbaud-Wallston & Wandersman, 1978), and Developmental Expectations (DE) (Barnard, 1983). Qualitative data included the mother's feelings about being a mother, perceived greatest concerns, Mother's Rating of General Health/Infant Health (Adapted by Mercer from Barnard, 1979).

Comparison of the experimental and control groups found no significant differences between the two groups. However, the difference in the POMS total mood disturbance scores was in the predicted direction. The POMS total mood disturbance scores were moderately negatively correlated with PSOC total scores. Analysis of demographic and baseline variables revealed no significant differences between the study groups. Related findings include the need for casefinding and referral during the first two months postpartum.



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CHAPTER 1

The Study Problem

"A child is born, we've suddenly walked through a thousand doors"

Lyric by Alan & Marilyn Bergman

Introduction

For over two decades nursing and behavioral science literature has examined the phenomenon of maternal adaptation following the birth of an infant. This period has been generally characterized as the "transition to parenthood" in recognition of the temporal and adaptive requirements of incorporating an infant into a dyadic, or in the case of multiparity, complex family constellation.

Despite accumulated literature detailing the immensity of the adaptive challenge confronting new mothers, systematic recognition by the health care delivery system in the form of extending the traditional boundaries of maternity health care delivery has not occurred. As a result, comprehensive health care and supportive services are available to mothers and their families during the first three trimesters of the childbearing year. In contrast, the fourth trimester, those three months following birth and including the puerperium, occurs independent of the health care delivery system. Mothers and their babies are generally discharged from the hospital from 12-48 hours after birth and commonly return for the final maternity health care appointment at four to six weeks postpartum. Clearly, a gap exists in the contemporary American system of

health care delivery. This realization sparks the question, "Can postpartum nursing follow-up demonstrably affect maternal adaptive outcomes?"

Background

One explanation for a gap in health care services during the early postpartum period may be the prevalence of folklore surrounding the transition to parenthood. Health care providers and consumers recognize the vulnerability inherent in pregnancy and birth. Following birth, however, new parents are expected to integrate infants into families without formal or systematic assistance. As birth has become more mechanized and consumerized, morbidity and mortality have been reduced. Mechanization has, however, altered practices and traditions which buffer the actual or potential distress of the fourth trimester. Some of these bygone practices included two weeks of in-hospital postpartum recovery, two to four weeks of lying-in at home, the prolonged visit of helping extended family, and the employing of expert lay or professional baby nurses to ssist in the home. Contemporary mothers and infants leave ne hospital within hours of birth and are expected to tablish daily activities and rhythms barely missing a at, affirming the rugged independence characteristic of rican nuclear families. In reality, and with raordinary unanimity, research suggests that an immense iod of adaptive challenge confronts postpartum women. In t, "there is mounting evidence that early motherhood is

experienced as a period of emotional stress by significantly large numbers of normal American women" (Leifer, 1980, p. 40). In addition, findings suggest 30% of American women report adaptive difficulty "beyond those characteristic of the transitional period of adjustment for all the group" (Shereshefsky, Liebenberg & Lockman, 1973, p. 117).

Emerging recognition of the need to extend services to families during the early postpartum period may be seen in the growing body of literature reporting programs and interventions intended to provide educational and supportive assistance during the puerperium. Theoretically and methodologically diverse, these studies provide an important foundation upon which focused new inquiry may be mounted.

Purpose

Although there appears to be agreement in the experimental and clinical literature that providing new mothers with educational and supportive services during the early postpartum period fosters maternal adaptation, a systematic, longitudinal nursing protocol for the low-risk mother has not been tested. The purpose of this study was two-fold: 1) to synthesize and explicate a clinical nursing postpartum follow-up protocol for the low-risk mother and 2) conduct a preliminary clinical test of the effect of the protocol on maternal adaptation during the first eight weeks postpartum. Additionally, this study has proposed and tested a conceptual model which provides a theoretical and clinical foundation for postpartum nursing practice.

Significance

For new mothers, attaining a sense of emotional and physical well-being, experiencing a sense of marital adjustment, affirming the physiological thriving of her baby and discovering lessened anxiety and emotional lability all foster a gradual perception of effective coping during the postpartum period. While assessment of adjustment may be either objective or subjective, it may be, in fact, the subjective assessment of the mother herself, that is the ultimate determinant of adaptation. Regardless of the coping action taken, the functional and desired outcome is the growing maternal perception of confidence, competence, satisfaction and gratification. It is therefore important to appreciate that maternal adaptation is a gradual process: a lengthy physical and emotional transition which entails cumulative learning and extensive resource utilization.

Extending the boundaries of nursing practice to incorporate comprehensive screening, assessment, intervention and evaluation of maternal responses to actual r potential health problems during the puerperium is ucial to attaining optimal maternal, newborn and family alth and development outcomes. By determining feasible, kable interventions that may be incorporated into ical practice, the traditional boundaries of nursing tice during the childbearing year may be extended.

In addition to the potential professional and ntific advance inherent in this line of inquiry, there substantial evidence of a clear and continuing societal

need for extending the current scope of postpartum nursing practice. In light of the very real fiscal limitations which prevail in contemporary health care delivery, successfully advancing maternal-child nursing into non-traditional service arenas will require documenting institutional and consumer costs and benefits.

While it may be desirable to extend services to postpartum women and their families via home-based visiting nurse services, a review of the literature suggests the potential for effective alternative formats such as group sessions or telephone contact (Combs-Orme, Reis, & Ward, 1985; Donaldson, 1977; Haight, 1977; Rhode & Groenjes-Finke, 1980). Either alternative presents a more cost effective option for initial postpartum contact for the purposes of systematic assessment and appropriate early intervention. Since current census data reports a record 92% of American households with telephones (Federal Communications Commission, 1986), this study has utilized a telephone-based nursing contact and intervention format. Comparatively testing the potential of telephone-based postpartum nursing follow-up was viewed as an appropriate scientific and professional priority.

In summary, this preliminary clinical test of a postpartum follow-up nursing intervention using telephone contact has taken the form of a randomized controlled trial (RCT). Postpartum women were randomly assigned to treatment and control groups prior to hospital discharge.

Experimental mothers received nursing intervention in the form of six weekly nurse initiated telephone contacts for educational and supportive follow-up. In contrast, the control mothers received standard postpartum care. The treatment, postpartum nursing intervention, was based on explicit maternal adaptation objectives.

During the eighth postpartum week, all mothers completed a self-report questionnaire booklet. Study instruments tapped maternal and infant health status, maternal developmental expectations, maternal profile of mood states and maternal sense of competency as a parent.

CHAPTER 2

Literature Review and Conceptual Framework

Introduction

This review will explicate and link the constructs of psychosocial transition and transactional stress and coping. The resulting theoretical lens will be used to view the phenomenon of adaptation of first-time mothers during the early postpartum period. Finally, a comprehensive critique of literature testing the effect of early interventions on maternal adaptation during the postpartum period will be presented. For the purposes of this study maternal adaptation will be defined as, "the woman's perceptions of her abilities to cope and adjust to motherhood responsibilities and tasks" (Kutzner, 1984, p. 3). The early postpartum period will be considered the first eight weeks following birth.

The Tradition of Viewing the Puerperium as a Crisis

LeMasters' "Parenthood as Crisis" (1957) classic study was a forerunner of social science research examining the impact of the transition to parenthood on new parents Dyer, 1963; Hobbs, 1965, 1968, 1976; Jacoby, 1969; Rossi, 968; Russell, 1974). Critical analysis of this body of search reveals a multitude of theoretical and thodological concerns (LaRossa & LaRossa, 1981). For mple, in an effort to quantify the impact of birth on ents, there has been difficulty in clarifying and idating applicable theoretical frameworks. Study samples e been small and unrepresentative, instruments unreliable

and data gathering temporally disjointed. Replication attempts within the body of literature have been methodologically flawed. These early studies did, however, generate awareness of the scope of adaptive demands facing new parents and new mothers. In particular, this research has challenged investigators to refine their designs and methods to foster better understanding of this most profound and significant transition in human experience (Jacoby, 1969; Miller & Sollie, 1980).

Studies to confirm LeMasters' (1957) report of parental experience of "extensive or severe" crisis during the months following birth of a first child have resulted in corroborating (Dyer, 1963) and refuting (Hobbs, 1965, 1968, 1976; Russell, 1974) evidence. The use of the concept of crisis has been repeatedly challenged by those advocating terminology which reflects the developmentally normative expected outcomes of postpartum adaptation (Rossi, 1968). The resulting contemporary view of the months following birth of a first child deemphasizes "crisis" and reiterates the stressful and transitional nature of this period in the marital and familial lifecycle (LaRossa & LaRossa, 1981; Miller & Sollie, 1980; Steffensmeier, 1982), consistent with alternative conceptualizations for normative crises.

Evolution of the Construct of Psychosocial Transitions

The concept of psychosocial transition is generally attributed to Tyhurst (1961). This conceptualization provided an alternative to the crisis paradigm for

describing and explaining normative or developmentally triggered adult adaptive dilemmas. Parkes' (1971) influential essay elucidating the attributes of psychosocial transitions grew out of a clinical and research interest in explaining the effects of changes, associated with losses, on people's lives. Parkes defined psychosocial transitions as "major changes in life space which are lasting in their effects, which take place over a relatively short period of time and which affect large areas of the assumptive world" (p.103).

Life Space

The Lewinian concept of life space, "those parts of the environment with which the self interacts and in relation to which behavior is organized" (Parkes, 1971, p. 103), was integrated by Parkes into a model of the person for whom changes in the life space are significant "depending upon their influence" on life world assumptions (p. 103). According to Parkes, major changes in life space inherently require reconstruction of life world assumptions.

Assumptive World

The assumptive world posited by Parkes contained two sets or models of life assumptions, a reality model of the world as it is perceived, and an alternative world, as it might be. Contained in the alternative assumptive world are scenerios of probable, ideal or dreaded situations which provide the assumptive substance for anticipatory preparation. Gaps are experienced in the assumptive world when lived experience presents a discrepancy between the

real and potential assumptive models. Parkes noted that these gaps may be experienced as losses, when a hoped for scenerio is unrealized, or as gains, when lived experience surpasses the expected scenerio. Regardless of the net experience, unexpected discrepancies give rise to unanticipated changes in life world, impact the assumptive world and require coping.

The assumptive world posited by Parkes is unique to each person, dynamically and actively shaped through interaction with the person's life space. Major changes in the person's capacities, status or roles inherently require a revision of the assumptive world. Parkes asserted that the ability of the person to cope with change is influenced by the congruency of expectations and life space. Major changes in life space generally render the person aware of gaps or discrepancies between expectations and reality. Significant changes disrupt the preexisting social equilibria, one of Tyhurst's original defining characteristics of a transitional state (Weiss, 1976, p. 214). Transitions demand the person confront difficult, unexpected or unfamiliar situations for which ready adaptive solutions or responses do not exist in their disrupted behavioral repertoire.

Elements of a Transition

Silverman (1982) extended initial notions of transitional states by characterizing three elements of a transition: 1) There is a disequilibrating event or series

of events; 2) A role change is involved; and 3) Change takes place over time (p. 175). Silverman explicitly linked role change to transitions noting, "most transitions generally involve status changes for affected individuals, necessitating a redefinition of the roles they perform in social networks" (p. 177). This temporal aspect may be validated in "societies with established rites of passage, (where) time periods are well marked with established rituals for helping people cope" (p. 178).

Phases of a Transition

Silverman (1981) proposed three adaptive phases of a transition: 1) impact, 2) recoil, and 3) accommodation (p. 179). Each phase is characterized by experiential and adaptive tasks. Accordingly, the transitional person is initially dazed or numbed by the impact phase. With increasing recognition of the reality of the change, the recoil phase is accompanied by mounting anxiety, frustration and tension as the meaning of the event is fully comprehended. Ultimately and optimally, the person reaches the phase of accommodation, having successfully restructured their assumptive world and hence, their identity.

In summary, there are obvious linkages among these conceptualizations of psycho-social transitions. The gap between assumptive expectations and reality that results in the discrepancy described by Parkes may trigger the recoil posited by Silverman. Accommodation occurs when the person has adapted his assumptive world to make it more congruent with the reality of lived experience or life space,

resulting in a reconstituted identity and restored equilibrium. As each person moves through the transition initiated by a macro event, for example the birth of their first child, the numbness of impact gives way to coping with numerous micro events during recoil. Micro events associated with the early postpartum period include, for example, making the baby's acquaintance, establishing the baby's feedings, adapting to altered patterns of sleeping and waking, reduced physical mobility, and residual physical and bodily remnants of pregnancy and birth. Perhaps the mastery inherent in the accomodation phase of a transition is derived from effectively and sequentially managing common and unanticipated associated micro events. A spiraling adaptive process may cumulatively evolve to become a restructuring of the person's assumptive world.

Transactional Model of Stress and Coping

The stress of psycho-social transitions is inherent in living the process from impact to accommodation. The person must, in effect, confront and alter assumptions which produce a troubled fit between intrapsychic expectations, which constitute the person, and the perceived attributes of lived experience. Lazarus' transactional model of stress and coping provides an explanatory framework for further examination of stress and coping in transitions (Lazarus & Folkman, 1984). Viewing the relationship between the person and the environment as constantly changing, transitional states may be seen as a common experience in dynamic

interactions between persons and their environments (Lazarus and Folkman, 1984).

Stressful transactions are those events the individual interprets as "either harmful, threatening or challenging" (Wrubel, Benner & Lazarus, 1981, p. 66). This disturbing situation must be successfully resolved "if well-being is to be maintained or enhanced" (Benner, Roskies & Lazarus, 1980, p. 225). Lazarus' paradigm allows for advancing research and clinical intervention by avoiding limitations of traditional conceptualizations of stress and coping which have treated coping as a behavioral trait, style or automatic response.

Coping

The transactional paradigm avoids confounding coping with mastery or a specified outcome (Lazarus & Folkman, 1984). The resulting definition of coping as "constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person" (p. 141), implies "not all adaptive processes are coping" (p.132). Coping is thus viewed as adaptational activity that requires effort and includes what the person "actually thinks or does within a specific context" (p.142).

The significance of context must be emphasized, for it is the specific situation and the cognitive appraisal of that situation which gives rise to coping. Through primary appraisal, the person evaluates or interprets the meaning of the specific event as either harmful, threatening or

challenging and ultimately demanding. Instantaneous secondary appraisal inventories and evaluates options and resources available with which to respond to the demand(s) of the situation or event (Benner, Roskies & Lazarus, p. 226). The experience of stress results when the demands of the situation tax or exceed available resources, either the result of excessive demands or inadequate resources.

The response of the person to the environmental situation or event alters the environment and shapes the substance of the process of reappraisal, reflecting the transactional quality of interaction between the person and the environment. The content of the assumptive world is a powerful influence on appraisal to the extent that expectation and anticipation generate emotional responses which affect the meaning of the event.

Stressful Events

Events become problematic when the person perceives "inadequacy in managing important aspects of the environment in a manner satisfactory to that person and/or significant others" (Roskies & Lazarus, 1980, p. 10). Coping with a major demand or event involves myriad person-environment transactions over time and requires the use of diverse coping strategies and resources.

The Nature of Coping

Coping acts may be globally categorized as direct or indirect. Direct actions are commonly characterized by focused problem-solving, which may include searching for information or actively altering the environment.

Anticipatory preparation for a potentially demanding event fosters effective coping by providing time for the person to access and utilize information prior to the impact of the event (Hamburg & Adams, 1967). Indirect actions are often intrapsychic in nature and include palliative measures to regulate emotion and cognitive processes which alter subsequent reappraisal of the event (Roskies & Lazarus, 1980).

According to Wrubel, Benner and Lazarus (1981) responses to stress are influenced by the individual's values and beliefs. Beliefs "act like a perceptual lens" through which the situation is viewed and evaluated. The particular demands of a situation may be characterized by the perceived situation specific clustering of uniqueness, duration/frequency, pervasiveness and ambiguity (Wrubel, Benner & Lazarus, p. 80). Judging these qualitative attributes of the situation, the person makes a rapid assessment of the relative actual or potential harm, threat or challenge (Benner, Roskies and Lazarus, p.226).

Effective management of stressful events requires transforming personal and environmental resources into coping responses. For example, personal resources of health, energy, morale, and beliefs, in combination with problem-solving skills may be augmented by environmental material resources and social supports (Roskies & Lazarus, 1980, p. 15).

Contribution of Social Support to Coping

The importance of social support as a critical coping

resource has long been recognized (Caplan, 1981). Social networks foster coping by providing relational, ideological, physical and emotional support (Power & Parke, 1984). According to Caplan (1981), "an effective supportive group or network of relatives, friends, neighbors and community caregivers provides concrete help in dealing with the environment" (p. 414). Social supports provide essential information, improve decision-making data collection, assist in evaluating the situation, assist in plan development, implementation, evaluation and revision, reenforce identity, provide assurance and maintain hope (Caplan, 1981, p. 414).

Caplan (1981) also stresses the importance of the cognitive and educational contributions of social support to the person's ultimate mastery of a stressful event. However, simply possessing adequate coping skills and resources does not assure effective coping, "one has to believe one has them" (Roskies & Lazarus, p. 26). While beyond the scope of this paper, the perception of the ability to master the situation is an intriguing link to self-efficacy (Bandura, 1985) and merits further theoretical exploration.

Normative Distress

In unique situations "the person has no previous experiences or cultural practices to provide the knowledge and skills with which to respond" (Wrubel, Benner & Lazarus, p. 81). The resulting "situational distress" is often

universally experienced by persons of similar cultural milieu encountering the same situation. This may explain the consistent findings of maternal distress during the fourth trimester of the childbearing year despite professional services and cultural practices which minimize or ignore the significant needs of women during this period.

Early Postpartum Maternal Demands and Challenges

Evolution of Contemporary Theoretical Perspectives

Classic early works approached maternal postpartum adaptation in the psychoanalytic tradition (Benedek, 1970; Bibring, Dwyer, Huntington, & Valenstein, 1961; Brody, 1956; Deutsch, 1945; Rubin, 1961, 1967a, 1967b). Content analysis of naturalistic observations and psychoanalytic case studies provided an individualistic beginning grasp of the magnitude and complexity of maternal adaptive issues during the puerperium. The resulting body of knowledge focused on maternal intrapsychic adaptation and linked optimal adaptive outcomes to the unconscious reservoir of each mother's own experience of nurturance. The role and significance of other factors--for example, the woman's spouse or her degree of life change--was only briefly explored.

The richness of these early reports sparked interest in the psychological processes of pregnancy and early motherhood. Rubin, a nurse clinician and scholar, particularly influenced nursing practice, education, and research through her writings in this area. The validity of the derived assumptions and the generalizability of these

early findings, however, have been reexamined recently and challenged in light of the significant societal and health care changes thought to potentially affect maternal adaptation (Martell & Mitchell, 1984; Walker, Crain, & Thompson, 1986).

Interactionism has provided a productive alternative to the psychoanalytic approach to the study of maternal adaptation during the puerperium. Various researchers have mounted extensive studies based on this theoretical foundation (Broom, 1984; Grossman, Eichler, Winickoff, Anzalone, Gofseyeff, & Sargent, 1980; Leifer, 1977; Mercer, 1980, 1981a, 1981b, 1985a, 1986). Scientific inquiry evolving from the interactionist theoretical perspective has been essential to the study of this phenomenon desperately in need of "a theoretical model to accommodate the dynamic interaction of complex variables at different levels of experience" (Hees-Stauthamer, 1985, p. 151).

While maternal adaptation was initially described as a maturational crisis (Bibring et al., 1961), contemporary literature is divided as to the universal applicability of that connotation (Celotta, 1982; Entwisle and Doering, 1981; LaRossa and LaRossa, 1981). However, it is generally accepted that the fourth trimester of the childbearing year is a uniquely difficult period in the maternal life cycle and "an event of unparalleled importance" (Gloger-Tippelt, 1983, p. 135). The weeks following birth have been variously described as a period of "reconstruction" (Deutsch, 1945, p. 274), a "paradigm shift" (Lederman, 1984,

p. 13), a "drastic readjustment" (Entwisle & Doering, 1981, p. 3), and a period of "reconstitution" and "emotional disequilibrium" (Grossman et al., 1980, p. 80). Most authors note the abrupt nature of the transition to motherhood and the absence of adequate preparation and social support for the role of the new mother in contemporary society.

One explanation for the reported intensity of postpartal adaptation may be the "specific interdependence between the psychological and the biophysical changes in this fundamentally determined maturational" period (Bibring et al., 1961, p. 13). Postpartal adaptive tasks arise from the challenges and demands inherent in this fourth trimester of the childbearing year. Mastery of the tasks cumulatively fosters maternal role attainment and fosters optimal health outcomes. Biological, psychological, and sociological issues form the substance of the key adaptive tasks of the postpartum period. While at once universal and individual, the adaptive experience varies from birth to birth and from woman to woman (Bibring et al., 1961; Deutsch, 1945; Gloger & Tippelt, 1983; Mercer, 1985a). "In effect, the process of pregnancy cannot be properly understood outside the context of the broader life course of the woman" (Gloger-Tippelt, 1983, p. 135).

In an proposing a process model depicting the course of pregnancy, Gloger-Tippelt presented a view of pregnancy "as a sequence of interdependent and qualitatively

differentiated phases" (1983, p. 135). While the model ended at birth, the conceptualization of a multidimensional, sequential process may be plausibly extended into the puerperium.

In summary, mounting evidence affirms the interdependence of maternal physiological, psychological, and sociological adaptive tasks. Furthermore, it is possible that adaptive emphasis shifts during the first months postpartum. As initial adaptive challenges are resolved and tasks mastered, new issues become significant and the accompanying tasks pose new challenges (Grossman et al., 1980; Kutzner, 1984; La Rossa & La Rossa, 1981; Leifer, 1980; Mercer, 1986).

The Woman's Self-System: Adaptive Issues

Within the woman's life cycle, birth biologically triggers her passage from the tasks and process of pregnancy into months of postpartal adaptive challenge. While maternal role attainment may be the observable outcome of this effort, the fundamental and pervasive global outcome is an irrevocable alteration in the woman's sense of self or her self-system. This is especially marked with the first birth, the ultimate rite of passage from girlhood to adulthood (Schectman, 1980). The perceived recognition and rewards of this new status may have greater meaning to adolescent mothers than to their 30- to 40-year-old counterparts (Mercer, 1986).

Alteration in the woman's identity is particularly salient to her relationship with her own mother or the woman

she considers her maternal figure. The importance of each new mother's own mother to the adaptive process must be recognized. The expression of recognition and respect (Lederman, 1984, p. 64) and the provision of crucial practical assistance by her mother appear to bring closure to the process of mother-daughter reconciliation which occurs during the childbearing year (Ballou, 1978, p. 29). From the moment she gives birth, each woman is transformed from her mother's daughter into the mother of her mother's grandchild. She is, at once, her mother's child and her mother's peer.

Assimilation of the Birth Experience

Emerging from birth into the puerperium, the woman is immediately challenged to assimilate the birth experience (Affonso, 1977; Pickens, 1982; Rubin, 1984; Tilden, 1980). This frequently reported preoccupation with the events of labor and birth is an essential characteristic of early maternal adaptation. Assessing the fit of lived experience with anticipatory expectations yields a quotient which must be celebrated (a good fit) or grieved (perceived discrepancies) and finally tucked away. The greater the discrepancy between maternal expectations and lived experience, the greater the necessary psychological effort and time which may be required to achieve resolution. The sequelae of the inability to adequately assimilate the birth experience is unknown, but may be a significant factor in postpartum psychological distress and depression (Affleck, Allen, McGrade, & McQueeney, 1982; Affonso, 1977; Blumberg,

1980).

Rubin described three distinct phases of maternal adaptation during the first weeks of the postpartum period. Assimilation of the birth experience occurs during the "taking-in" phase, and is characterized by narcissistic dependency during the first three days postpartum. According to Rubin (1961), "taking-hold"--occuring during days three to ten postpartum--reflected a period of increased independence and a shift in focus to mothering tasks and the business of recovery (Rubin, 1961, 1984).

Martell and Mitchell (1984) investigated the extent to which contemporary new mothers demonstrated the phases of "taking-in" and "taking-hold" explicated by Rubin's original work. An attempted replication of Rubin's findings among 20 randomly selected subjects, using a questionnaire geared to tap puerperal change with a high degree of content validity, did not support Rubin's findings.

Perhaps the inability of Martell and Mitchell to replicate the earlier findings is indicative of the impact of major changes that have taken place related to the definition and experience of postpartum hospitalization and the early postpartum weeks. Women in the 1980's are discharged from the hospital within the first 48 hours postpartum and often report resuming an adapted version of their usual activities of daily living shortly thereafter, in sharp contrast to practices just a decade ago which provided institutionalized "lying-in" from 1-4 weeks postpartum.

Body Image in Transition

Numerous authors have noted the magnitude of adaptive challenge inherent in the physiological condition of the postpartum woman. Alterations in breasts, bowels, bladder, and perineum cue mothers to the reality of involution. Women discover that they are decidedly not back to their expected non-pregnant selves.

The body image component of the self-system must accommodate this transitional physical state. Immediate and pervasive fatigue, due to extraordinary birth effort and possible significant blood loss, combined with a bulging fundus and engorged breasts, presents a disquieting picture to the mother when standing on the scale or gazing in the mirror. During the next six weeks nature will complete the physiological culmination of pregnancy that birth began. Until that time, however, each postpartum mother must undertake a considerable adaptive agenda despite the obvious physiological limitations of a profound recovery in process. Research evidence suggests that most postpartum women experience as stressful the limitations, discomforts and altered dimensions of their bodies (Leifer, 1977; Mercer, 1986).

Maternal Role Attainment

Mothering, a complex learned and culturally bound role, requires the woman to empathically assess and demonstrate the ability to meet the needs of her dependent infant. Necessarily, she must negotiate a harmony between internal

and external demands which otherwise threaten her capacity to function as mother. The literature resounds with the recurring theme that the very nature of the maternal role in American society may increase adaptive distress. It is suggested that assuming the exclusive role of mother may extract too high a personal price. Several authors note that mothers nurture children in an environment void of status, adult rewards, measurable achievement, reinforcing feedback, social support, or guidance (Ballou, 1978; Chodorow, 1978; Leifer, 1977; Shereshefsy & Yarrow, 1973).

Taking on the maternal role is an active physical, as well as intrapsychic, task. Initial mothering requires acceptance and individualization of the infant (Shereshefsky, Leibenberg & Lockman, 1973), attachment and development of mutual interaction (Ballou, 1978; Rubin, 1984) and assuring physiological thriving of the newborn (Grossman et al, 1980). Healthy maternal role adaptation involves the expression of qualitative aspects of mothering such as tenderness, altruism (Deutsch, 1945), positive affect, sensitivity (Grossman et al., 1980) synchrony (Rubin, 1984), nurturance, and protection (Lederman, 1984). Contingent and appropriate maternal interaction with the infant fosters the health and development of the infant and is the ultimate expression of maternal competence (Kang, 1986). The essence of the maternal role-taking task is to both feel and function like a mother.

Rubin initially described the process of maternal role attainment. Synthesizing Mead's "taking in the role of the

other" and Sarbin's "adopting the ways of others," Rubin did not explicitly define maternal role attainment. Rather she posited a continuous active sequence of cumulative maternal intrapsychic and interactional operations which culminated in the achievement of maternal identity (Rubin 1967a, 1967b). These intensive operations begin as mimicry, role-playing, and fantasy in pregnancy and evolve to introjection, projection, and rejection as the mother refines her role fit. As the mother assumes the maternal role, Rubin describes necessary grief work for relinquished roles (Rubin, 1967a, 1967b). This finding is supported by contemporary studies focusing on maternal adaptation among career oriented women (Jiminez, 1982; Mercer, 1986; Pickens, 1982). Multiple investigators have reported prenatal and postpartum fantasy and dreaming as essential components of anticipatory preparation for maternal role-taking (Lederman, 1984; Leifer, 1980).

Mercer has significantly extended and expanded knowledge of the process of maternal role attainment in a series of investigations. Expanding an initial study which examined the form and strength of relationships between key maternal and infant variables and maternal role attainment, Mercer undertook a subsequent study examining the differences in maternal role attainment, related to maternal age, over the first year of the child's life (Mercer, 1981b). Mercer defined maternal role attainment as, "the process in which the mother achieves competence in the role

and integrates the mothering behaviors into her established role set, so that she is comfortable with her identity as a mother" (Mercer, 1985a, p. 198). This definition taps maternal competence and comfort as essential aspects of maternal role attainment and may be construed to imply maternal confidence and gratification as well. Findings resulting from this cumulative inquiry are strengthened by the longitudinal design, integration of quantitative and qualitative data collection approaches, and use of measures with established validity and reliability.

Affirming the developmental nature of the processes of maternal postpartum adaptation, Mercer found that 49% of 242 women studied reported internalizing the maternal role by two months postpartum; 85% by 9 months. Clearly, maternal role attainment may require conceptualizing pregnancy and the transition to motherhood as a six trimester process.

Additional key findings reflecting the process of maternal adaptation during the first two months of the puerperium included: 1) a positive relationship between the quality of maternal role performance and maternal perceived gratification; 2) an inverse relationship between maternal role strain and perceived gratification; 3) over 50% of the women reported pervasive fatique at one month and feeling blue or depressed. Mercer (1986) reported that maternal stress had a significant effect on infant growth and development; the presence of informational support had a positive effect. This finding, supported by others (Barnard & Eyres, 1979; Grossman et al., 1980; Lee, 1982), links

maternal adaptive state to infant health and development. Furthermore, Mercer (1985b) found at one month that maternal educational level was significantly related to ways of handling irritating infant behaviors. Maternal competency scores were lower at one month than at any other time during the first year. Maternal race, education level, marital status and perception of the birth were major predictors of maternal competency behavior. An important predictor of maternal gratification at one month was the perception of positive life events during the year prior to the birth.

Mercer (1986) reported that the fatigue and frustration which characterized the first postpartal month had diminished by the fourth month. While these mothers reported major challenges and demands in the fourth month similar to those prevalent during the first month, 53% reported feeling "fulfilling accomplishment" by the fourth month (p. 169). Mercer termed this period an adaptive "turning point" reflecting increased comfort in the maternal role, implying growth in maternal perceived confidence, competence, and gratification.

It is interesting to note that four categories of perceived demands formed a persistent thread in Mercer's findings at one, four, eight, and twelve months postpartum. Issues related to personal time, role skills, nighttime infant care and responsibility emerged as the recurring challenges. These findings are consistent with those of

other investigators examining maternal adaptation in primiparas (Curry, 1983; Grossman et al., 1980; LaRossa & LaRossa, 1981; Larson, 1966; Walker, Crane & Thompson, 1986).

In a landmark study, Barnard and Eyres (1979) examined the relationship of parent-infant interaction to child health and development outcomes and found little evidence that individual mothers demonstrate a consistent style in approaching their role. Multiple factors such as the characteristics of the infant, environment, life change, and situation-specific variables influenced maternal behavior. This finding is echoed by others and is methodologically significant. Measuring maternal role performance in one episode or situation cannot be interpreted as yielding data representative of the overall quality of maternal role attainment.

Maternal Adaptive Issues Related to Spouse

In addition to the extensive adaptive processes affecting her intrapsychic, biophysical, and maternal selves, the postpartum woman must maintain vital ties to her spouse/partner. The literature repeatedly suggests the crucial role the spouse/partner plays throughout the childbearing year. Healthy marital dyads facilitate the partner's supportive, assistive, nurturing role (Ballou, 1978; Entwisle & Doering, 1981; Grossman et al., 1980; Lederman, 1984; Leifer, 1980; Rubin, 1984; Shereshefsky, Leibenberg, & Lockman, 1973). Related tasks of adapting sexuality, expanding communication,

renegotiating roles, and extrafamilial relationships require collaboration and mutuality. Clearly, the postpartum period transforms the marital dyad. Spouses must initially accept the mother's necessary dependency, while actively assuming a paternal role. Contemporary studies report the majority of fathers are actively involved in the care of their children, as well as being crucial sources of social support for their wives (Barnard & Eyres, 1979; Basham, 1983; Crnic, Greenberg, Ragozin & Cronenwett, 1985; Entwisle & Doering, 1981; Grossman et al., 1980; LaRossa & LaRossa, 1981; Mercer, 1986; Pridham, 1984; Wandersman, 1978b; Westbrook, 1978).

In summary, the situational demands of the postpartum period are complex and pervasive. Maternal adaptive demands and challenges may be categorized under the general rubrics of, 1) the woman's self-system, which includes integration of the birth experience into an altered identity; 2) the physical self, which integrates the physiological sequelae of birth and involution; 3) the infant caregiver, which reflects maternal role-taking and integrates the physical and developmental aspects of infant nurturing; and, 4) the spousal partner, which reflects the inherent alterations in the marital dyad. The literature is quite consistent in depicting the adaptive universe of the postpartum woman. Importantly, the trajectory of each woman's adaptive journey is unique, an intricate process linking the events of her past and present, to forge an adaptive future for herself

and ultimately, her infant. Indeed, at the conclusion of the eighth postpartum week, the new mother has walked through a thousand doors.

Maternal Stress and Coping During the Puerperium An Emerging Perspective

The cumulative body of knowledge related to maternal adaptation during the first eight weeks of the postpartum period presents a vivid portrait of the adaptive challenges and tasks confronting each new mother. To term this period "unique" is to understate the stakes for the mother, infant, and family. Without exception, researchers have recommended adapting societal and professional views of the postpartum period to conform to the needs and reality so evident in their findings. Gilberg (1975) eloquently summarized the impact of the transition to parenthood:

> Few rites of passage in life bear the import that comes with the decision to raise children, yet society in general has not created institutions to facilitate this monumental change in life-style, nor does it support or emotionally reward couples engaged in childrearing. To the contrary, society's institutions as portrayed through the mass media tend to fantasize the process of parenthood....with its emphasis on pervasive happiness, perfection and consumerism....(p. 60).

The transitional experience of new motherhood may be influenced by the extent to which the maternal assumptive world contains romanticized or markedly unrealistic expectations. Likewise, prenatal attitudes, beliefs and

values provide perceptual meaning for the appraisal of early postpartum events.

For most American women, birth and motherhood pervasively alters their biological, emotional, social and cognitive life space, requiring reconstitution of their assumptive world (Schectman, 1980). It has been posited that the ultimate outcome of the transition to motherhood is attainment of the maternal role, an adaptive process which may require most of the first year of motherhood to complete (Mercer, 1986). In attaining the maternal role, the postpartum woman often experiences "situational demands that permeate every corner of experience...chains and networks of stressful encounters" (Wrubel, Benner & Lazarus, 1981, p. 83).

Maternal Concerns During the Early Postpartum Period

There is an intriguing cluster of nursing research, spanning nearly two decades, which focuses on maternal postpartum concerns (Adams, 1963; Alfonso, 1977; Bull, 1981; Gruis, 1977; Larson, 1966; Moss, 1981; Sumner & Fritsch, 1977; Walker, 1973). The diversity of these largely exploratory studies does not permit methodologic comparison. Four of the studies did, however, report a provocative common finding: a marked increase in expressed questions, worries, concerns and intensity of anxiety during the first weeks following hospital discharge. Again, from the perspective of psycho-social transitions, the early postpartum period may be comparable to Silverman's (1981)

recoil phase of the transition, characterized by significant disequilibrium, and maternal role attainment the accommodation phase.

Numerous reports have asserted that the early postpartum period is intensely stressful (Bennett, 1981; Blumberg, 1980; Entwisle & Doering, 1981; Grossman, et al., 1980; Larson, 1966; Leifer, 1980; Mercer, 1985b; Shereshefsky & Yarrow, 1973). According to Mercer (1985b), mothers experience losses in personal time, challenges to role skills, effects of night-time infant care and personal responsibility as acutely demanding during the first month postpartum. These categories of demands are reflective of the concerns, challenges and demands discussed in the body of applicable literature, with the exception, that they do not tap marital challenges, known to be equally critical during this period (Broom, 1984; Entwisle & Doering, 1981; Pridham, 1984). It must be noted that mothers confront these immense demands while dealing with profound physiological restoration and universally chronic fatigue. While it is beyond the scope of this paper to elucidate the complex physiological adaptation inherent in the postpartum period, this profound biological involution-in-progress must be emphasized. The biophysical sequelae of pregnancy and birth extracts a recooperative price during the puerperium. Crucial maternal coping resources of health and energy are significantly depleted during the early postpartum period.

Cultural Factors Contributing to Maternal Adaptation

The literature also resounds with the recurring theme that the very nature of the maternal role, in American society, may increase adaptive distress. It is suggested that assuming the exclusive role of mother may extract too high an adaptive price. Several authors directly note that mothers nurture children in an environment void of status, adult rewards, measurable achievement, reinforcing feedback, social support or guidance (Ballou, 1978; Chodorow, 1978; Leifer, 1980; Shereshefsy & Yarrow, 1973).

In summary, the challenges and demands of new motherhood are laden with high stakes, evoking accompanying emotion and intensifing the potential stress experienced. Effective, adequate problem-solving, in response to the demands of the infant, is crucial to the physical survival of the baby. Further, appropriate coping must sustain the vital supportive marital relationship, a critical source of maternal support.

Early Postpartum Maternal Coping

The literature contains evidence that women employ both direct and indirect coping actions during the early postpartum period. There is also evidence that mothers may confront a societal and professional tendency to "trivialize" (Lazarus, 1983) their adaptive distress which further complicates coping efforts. An indication of the failure to recognize the legitimacy and reality of maternal postpartal distress is the obvious absence of institutional and societal sources of supportive assistance.

Additionally, Greenberg, Rice and Rice (1981) concluded, following detailed observations of a small sample of pediatrician postpartum maternal bedside counseling sessions, that even intentional counseling often falls short of the mother's actual needs. The majority of mothers observed in this study received a single pediatric physician visit, lasting an average of 11.5 minutes, prior to hospital discharge with their baby. Mothers reported a discrepency between the substance of their concerns and the physician counseling content, noting especially a need for discussion regarding infant-related feelings and safety issues. The subject mothers also cited a need for further clarification and explanation following the physician visit.

In a related vein, Pridham (1984) tapped over 700 postpartum infant related adaptive issues derived from maternal recordings of circumstances related to mothering that made their day more difficult and required problem-solving. "Of the 744 categories of issues identified by mothers at least once, 66% were not associated with any kind of clinician help; for 37% of the issues, no help of any type was used" (p. 131). As Pridham concluded, this finding suggests that a large percentage of issues which require maternal problemsolving are never brought to the attention of a health care clinician. As a result clinicians, in all likelihood, are not aware of the multitude of problematic issues.

In the absence of institutionalized supportive

services, women have directly coped by turning to their partners, relatives, and available print media resources for informational assistance in decision-making and problem-solving during the early postpartum period (Brody, 1956; Power & Park, 1984; Pridham, 1984).

Pickens (1982) reported findings which may be interpreted as evidence of context specific intrapsychic or indirect coping during the first postpartum weeks among a very small sample of career-oriented women. Adaptive actions reported included reviewing, projecting an ideal model, planning, cost accounting, weighing and assessing. These maternal cognitive processes may be viewed as evidence of maternal efforts to reconstruct her assumptive world. Likewise, they potentially impact reappraisal of specific demands and challenges, shaping her ongoing transactions with her environment.

New mothers have also sought supplemental social support via supportive group experiences to augment their coping resources during the postpartum period. The most common benefits reported from participating in postpartum support groups include the opportunity to talk and share experiences with other women similarly bound by experience and to be reassured of the universal nature of common feelings (Cronenwett, 1980; Kagey, Vivace, & Lutz, 1981). Crnic, Greenberg, Ragozin, Robinson and Basham (1983) assert that the role of social support in maternal adaptation must be emphasized. "Mothers' perceived social support appears to provide significant benefits to the infant, at least as

measured by the enhancement of reciprocity and mutual gratification within the relationship" (p. 215). Since reciprocity of maternal caregiving is central to maternal role attainment, the significance of social support is further validated.

Environmental feedback is another concrete component of maternal coping. Research reports consistently suggest that it is feedback gleaned from successful and contingent caregiving which most signficantly influences the maternal perception of effective coping. Concrete infant indices, such as appropriate weight gain, and the evolving ability to predict the infant's patterns of feeding, sleeping, eliminating and responsivity validate for the new mother that she has achieved the primary adaptive task of the first two months postpartum which "consists of a suitable meshing of mothering activities with the cues of the baby, necessary for him to live and thrive" (Sander, 1962).

Early Postpartum Maternal Adaptation: Nursing Intervention Overview

For the purposes of this review, only those studies giving evidence of a rigorous methodology were selected for indepth review. Reports describing interventions, without evidence of contrast or comparison methodologic design, permitting a test of the effect or impact of the intervention, were not included in this review. Several intervention reports which did not undertake a scientific test of comparative treatment effects demonstrated obvious

evidence of conscientious and goal directed content for nursing action (Brucker & MacMullen, 1985; Donaldson, 1977, 1981; Haight, 1977; Marecki, 1979).

Evaluation research studies were also screened from the body of research considered for this review of clinical intervention literature (Cagan & Meier, 1983; Cronenwett, 1980; Gosha & Brucker, 1986; Petrowski, 1981; Rising & Lindell, 1982; Wandersman, 1978a). While evaluation research is "the systematic application of social science procedures in assessing the conceptualization and design, implementation and utility of social intervention programs" (Rossi, 1982, p. 20), the intent is generally related to quality assurance, management or administration issues. The focus is necessarily broad and the methodology does not permit inference of intervention effects or a comparison of the efficacy of alternative treatments. Evaluation research is valuable to nurse clinicians planning and evaluating institutional and consumer costs and benefits, hallmarks of professional accountability.

From the diverse body of interdisciplinary literature reporting maternal postpartum intervention inquiry, seventeen studies emerged as strong quasi-experimental or experimental investigations with postpartum maternal behavior as the focus of the intervention and the delivery of services during the early postpartum period as a key component of the experimental design. The studies examined for this review included at least one contrast subject class for direct comparison with the experimental subject group.

Table 1 summarizes key elements of the studies which were examined for this review. The resulting body of literature presents a variety of intervention strategies which have been tested for their effects on maternal postpartum adaptation. Teaching treatments have been the most common intervention tested. Additional interventions subjected to scrutiny include comprehensive care programs, counselling and supportive therapies, role supplementation, and systematic strategies to foster optimal parent-infant interaction.

Both home-based and office/institution-based interventions have been tested, as well as telephone contact only. The unit of analysis in the studies reviewed varied greatly and included women only, mother-infant dyads, spousal dyads, family groups and groups of mothers, mother-infant dyads and couples. Cumulatively, studies have tapped the full range of demographic variation characteristic of childbearing women and their families.

Experimental Treatments

The range of treatments, represented in Table 1 varied from complex, multifaceted intervention programs (Barnard, 1982; Brooten, Kumar, Brown, Butts, Finkler, Bakewell-Sachs, Gibbons, & Delivoria-Papadopoulos, 1986; Field, Wildmayer, Greenberg & Stroller, 1982; Gutelius, Kirsch, MacDonald, Brooks & McErian, 1977; Larson, 1980; Meleis & Swendsen, 1978) to one-shot intervention encounters (Belsky, 1985; Boyd & Duncan, 1986; Carter-Jessop, 1981; Golas & Parks,

1986; Hall, 1980; Rhode & Groenjes-Finke, 1980; Stanwick, Moffat, Robitaille, Edmond & Dok, 1982). The timing, specificity, intensity and duration of the interventions varied greatly.

Timing. Several investigations tested the effects of prenatal interventions on maternal postpartum behaviors (Carter-Jessop, 1981; Gutelius, Kirsch, MacDonald, Brooks & McErlean, 1977; Larson, 1980). Other interventions were initiated during the immediate postpartum period, prior to hospital discharge, and continued (Brooten et al., 1986). Alternatively, several studies initiated a one time only experimental treatment (Hall, 1980; Rhode & Groenjes-Finke, 1980; Stanwick, Moffat, Robitaille, Edmond, & Dok, 1982) during the first weeks postpartum following hospital discharge. Two studies initiated the experimental treatment during the early postpartum period in the hospital, with the goal of influencing maternal perceptions and/or behaviors during the weeks and months following hospital discharge (Boyd & Duncan, 1986; Perry, 1983) In several instances, the timing of the intervention onset was unclear or ambiguous. There was wide variation in the duration of the treatment protocols.

The issue of timing is particularly intriguing in those studies that began the experimental intervention prenatally and continued in to the postpartum period (Gutelius et al., 1977; Larson, 1980). In discussing the differential effects of intervention begun prenatally and continued weekly during the first weeks postpartum versus the delayed treatment

Table 1

Empirical Elements of Postpartum Intervention Studies—Part I

STUDY	SAMPLE	INTERVENTION	FOCUS
Barkanskas, V. (1983)	110	PHN HV & Telephone contacts (2/pair)	Maternal health status, knowledge, behavior.
Barnard, K. (1983)	185	Nursing follow-up	Child health and development; parent-infant interaction.
Boyd, S. & Duncan, M. (1986)	132	Demonstration of BNBAS 1-3 days pp with both parents present.	Effect on parental attitudes, behavior, perceptions, marital satisfaction, parent-inf. reciprocity.
Brooten, D.; Kumar, S. Brown, L., Butts, P. Finkler, S., Bakewell-Sachs, S. Gibbons, A. & Delivoria-Papadopoulos, M. (1986)	79	Wkly contact by CNS during hospitalization for teach/support. HV wk 1; 1,4, 9,12,18 mos. Freq telephone contact.	Effect of home follow-up nursing services on health, growth & development of very low birth wt. infants following early discharge from NICU.
Brown, L. S. (1967)	40	PHN HV	Postpartal maternal concerns.
Carter-Jessop, L. (1981)	10	Structured prenatal teaching and tactile awareness of fetus.	Postnatal maternal attachment.
Field, T., Wildmayer, S., Greenberg, R., & Stroller, S. (1982)	120	Six mo. biweekly HV for structured teaching vs. individualized comprehensive day care center-based parent prog.	Train teenage mothers in appropriate infant stimulation.
Golas, G. & Parks, P. (1986)	54	Structured teaching re: infant states, behavior and responses; inc. BNBAS.	Maternal knowledge of infant behavior, confidence in assesing own infant.
Gutelius, M., Kirsch, A., MacDonald, S., Brooks, M., & McErlen, T. (1977)	95	Individualized comprehensive home-based wellchild care; unstructured counseling, structured well child care, telephone support.	Demonstrate impact of optimal well child care on child health and development.
Hall, L. (1980)	30	Structured teaching re: infant behavior.	Maternal perception of neonate.
Larson, C. (1980)	115	Structured teaching & counseling re: infant care, development and interaction by lay, trained home visitors.	Mother-infant interaction, home environment, child child health and development.
McNeil, H., & Holland, S. (1972)	107	PHN HV & 10 sessions group instruction, content determined by individual groups.	Maternal knowledge and appropriate utilization of health resources.
Meleis, A., & Swendsen, L. (1978)	58	Teaching, modeling re: parental role via HV & group sessions.	Parental development of congruency between perceived & roles.
Perry, S. (1983)	57	Structured teaching/ demonstration of infant behavioral repertoire.	Parent perceptions of infant.
Rhode M., & Groenjes-Finke, J. (1980)	99	Nurse-initiated structured postpartum telephone call.	Maternal concerns and sources of information following postpartum hospital discharge.
Stanwick, R., Moffat, M., Robitaille, Y., Edmond, A., & Dok, C. (1982)	156	1 PHN HV during first 21 days PP	Maternal confidence, knowledge and skill.
Younger, R. (1972)	47	Minimum 4 PHN HV	Maternal health status, knowledge, behavior.

Table 1 continued

Empirical Elements of Postpartum Intervention Studies—Part II

STUDY	TIMING OF INTERVENTION	TIMING OF EFFECT MEASURE	MAJOR FINDINGS
Barkauskas, V. (1983)	HV began 3 wks PP Note: 48 PHNs provided info.	Interview/Questionnaire, @ 24-28 wks PP	No significant differences.
Barnard, K. (1983)	1st 3 mos. PP	3, 6, 10, 24 mos.(blind)	No significant differences.
Boyd, S. & Duncan, M. (1986)	BNBAS demonstrated 1-3 da pp	1,4,12,18 mos. Observation, interview, and questionnaire.	No significant differences.
Brooten, D.; Kumar, S. Brown, L., Butts, P. Finkler, S., Bakewell-Sachs, S., Gibbons, A. & Delivoria-Papadopoulos, M. (1986)	Onset immediatly following birth.	1, 9, 12, 18 mos.	Infants in early DC (Exp.) group were DC'd 11.2 days earlier than controls without impact on infant growth, development, & health outcomes.
Brown, L. S. (1967)	Not specified	4 wks. PP	Positive effect on number & intensity of primip maternal concerns.
Carter-Jessop, L. (1981)	Interventions weekly x 2-3 wks. beginning 32-37 wks. gestation.	Observation 2-4 days PP	Significant differences in postnatal attachment behaviors.
Field, T., Wildmeyer, S., Greenberg, R., & Stroller, S. (1982)	Not specified	4, 8, 12 mos., 2 yrs. PP	Growth & development outcomes of intervention infants exceeded those of control infants.
Golas, G. & Parks, P. (1986)	2 wks pp	4 wks pp	Experimental group showed significantly more knowledge of infant behavior and appropriate responses.
Gutelius, M., Kirsch, A., MacDonald, S., Brooks, M., & McErlen, T. (1977)	Onset @ 7 mos. gestation thru first 3 yrs. of life.	1, 2, & 3 yrs. (blind)	Significant differences re: diet, feeding habits, developed traits, intelligence, parenting practices.
Hall, L. (1980)	2-4 days PP in HV	1 month	Positive influence on maternal perceptions of newborns.
Larson, C. (1980)	Group 1 rec. 1 prenatal HV & 4 HV during first 6 wks. PP; Group II rec.7 HV from 6 wks.-6 mos. PP	6 wks., 6, 12, 18 mos.	Significant difference favoring intervention onset prior to 6 wks. PP related to home environment, maternal behavior.
McNeil, H., & Holland, S. (1972)	Not specified	Following instruction at final group session or during controls HV.	Significant difference in maternal knowledge associated with group session attendance.
Meleis, A., & Swendsen, L. (1978)	Onset 3rd tri. of pregnancy; role clarification & role-taking.	2-3 wks. pre-EDC, 1-2 wks., 6-8 wks., 4-5 mos. PP	Significant difference in husband's anxiety; maternal perceptions, attitudes, protectiveness & responsiveness related to infant.
Perry, S. (1983)	2-3 days PP; in hospital	1wk., 4wks. PP	Significant effect of structured interaction on perceptions @ 1 wk., absent @ 4 wks.
Rhode M., & Groenjes-Finke, J. (1980)	Single telephone call made on 2nd day following hospital discharge.	6 wks. PP	Significant effect increase resources used and concerns re: family planning.
Stamdick, R., Moffat, M., Robitaille, Y., Edmond, A., & Dok, C. (1982)	1 HV during 1st 21 days PP.	Telephone interview @ 4 wks.	No significant differnces.
Younger, R. (1972)	Intervention initiated 3-8 prenatal mos; terminated 10-11 mos. later.	Questionnaire $\bar{p}$ termination HV.	No significant differences.

control initiated after the sixth postpartum week, Larson concluded that prenatal timing was the significant difference between study protocols. It may be that the ultimate effect of prenatal timing was confounded when offered in combination with immediate postpartum intervention. Perhaps the main effect was due to implementation of the intervention during the early postpartum period, prior to the sixth week.

Intensity. The specificity and intensity of the interventions was not always explicated in the research reports reviewed. Public health nurse (PHN) home visits, the intervention of interest in a cluster of studies, was one of the most difficult interventions to specify. For example, Brown (1967) in a test of the effect of PHN home visits on postpartum maternal concerns, did not specify the timing, frequency or duration of the nursing home visits. Brooten, et al. (1986) in reporting strong and important results from experimental nursing treatment of low birth weight infants and their parents prior to hospital discharge and during the first eighteen months of life, did not detail the nursing actions or content of the treatment, making it difficult to gauge the intensity of the treatment. It may be inferred that the intensity of the treatment varied greatly depending upon the length of the infants' hospitalization. Barnard (1982), on the other hand, presented very detailed accounts of the intended and actual content of the three nursing protocols tested, clearly documenting the substance and intensity of the nursing

actions being tested.

Structure. The interventions reviewed also varied greatly in their structure and focus. Examples of highly structured treatments were tested (Boyd & Duncan, 1986; Golas & Parks, 1986; Hall, 1980; Meleis & Swendsen, 1978), as well as, explicitly individualized interventions (Field et al., 1982; Gutelius et al., 1977). Barnard (1982) compared a structured postpartum nursing service protocol with an individualized protocol, including a third control protocol consisting of standard county public health nurse postpartum follow-up.

Regardless of the intervention structure, either choice has strengths and limitations. Standardized interventions reduce potential error due to unreliable treatment implementation and enhance replicability of the test. It is important, however, that "any trial must design an intervention program flexible enough to meet the varied needs of a heterogeneous group of participants" (Syme, 1978, p. 90).

Despite a standardized intervention protocol, multiple interveners may compromise treatment reliability due to heterogeneity of treatment implementation. Interpretation of Barkauskas' (1983) study of the effect of PHN home visits on primiparous postpartum mothers and their infants, must take into consideration the procedural note that 48 nurses provided the treatment tested. Significant error must be attributed to the intervention effect under these

circumstances.

The potential power of a treatment effect is also compromised when individualization of the intervention results in a wide variation in treatment between subjects within the experimental group. For example, Barnard (1982) reported that subjects who received the NPACE or individualized nursing protocol experienced a mean of 14 total contacts (telephone and home visits combined), with a range of 2 to 56 total contacts. Subjects received a mean total of 7 home visits, with a range of 2-14 home visits. In this instance, it may be that individualization of the intervention resulted in a regrettable loss of experimental power.

Sampling. As a body of research, the investigations represented in Table 1 collectively tapped the full range of childbearing women. Several researchers focused on adolescent mothers or mother-infant dyads (Barbauskas, 1983; Field et al., 1982). The majority of investigations were homogeneous with regard to parity, limiting eligible subjects to first-time mothers. Study samples were generally low-risk, controlling for actual or potential influences of varied maternal and infant adaptive outcomes. There were two exceptions to this sampling trend. Brooten et al. (1986) selected low birth weight infants and their parents as the research population. Barnard's (1982) Newborn Nursing Models Project intentionally recruited a developmentally vulnerable sample of high-risk mother-infant dyads in order to test the effect of three home-based

nursing protocols during the first three months postpartum, on child health and development outcomes through the third year of life.

Sample sizes also varied widely. Several investigations were mounted with comparison group sizes of 30 or less subjects (Brown, 1967; Carter-Jessop, 1981; Hall, 1980; Meleis & Swendsen, 1978; Perry, 1983). In addition to the initial challenge of recruiting subjects for treatment comparisons, attrition plagued the majority of investigations. The puerperium is a period of immense change for childbearing families. Longitudinal studies, in particular, were affected by the inability of participating subjects to fulfill their commitment in view of multiple, unanticipated life changes. While some studies reported selective attrition by the youngest or least educated subjects, most simply cited attrition due to moving, changing health care providers or inability to complete participation in the intervention due to a scheduled return to work.

Subject loss reduced many study samples below acceptable levels to sustain the power of the experiment or support statistical conclusion validity. When post-randomization subject loss resulted in significantly unmatched comparison group sizes, the contrast validity of the experiment was threatened (Meleis & Swendsen, 1978; Rhode & Groenjes-Finke, 1980; Stanwick, et al., 1982).

The majority of studies reviewd reported random subject

assignment to either experimental treatment or control groups. This obvious commitment to assuring, within the limits of randomization, substantially comparable study groups strengthened the design integrity of this literature. The scientific community is unanimous in the expectation that valid scientific tests of clinical interventions must include randomized assignment of eligible subjects (Byar et al., 1978; Kramer & Shapiro, 1984; Mahoney, 1978; Tyzenhouse, 1981; Zelen, 1979).

Data Collection. Timing of data collection is crucial to the evaluation of a causal relationship. The experimental treatment must temporally precede the occurrence of the outcome criterion, and yet, be temporally contiguous (Mahoney, 1978, p. 661). Controlling historical and maturational threats to internal validity requires theoretically and methodologically astute timing of data collection.

Several studies reported data collection timing that may have compromised the inferential power of the test. Carter-Jessop (1981) reported that the data collection schedule for observation of mother-infant interaction during the first 2-4 days postpartum was chosen by each individual subject. While reducing potentially harmful observational intrusion, the inherent variation in timing of data collection may not be theoretically acceptable during the first days of maternal-infant acquaintance. In this example maturation may have compromised internal validity.

Rhode and Groenjes-Finke (1980) reported collecting

pre-test data on the second postpartum day, treating the experimental group with a single postpartum follow-up telephone call on the second day at home following hospital discharge, and collecting post-test data at six weeks postpartum. Again, historical and maturational threats to the validity of these findings must be considered. Interestingly, during the post-test data collection, 25% of the experimental sample did not remember receiving the intervention telephone call. Perhaps, given the unknown effect of a single telephone contact, it is unrealistic to expect a significant measurable outcome to endure six seeks.

Instrumentation. Construct and statistical conclusion validity mandate theoretically valid, sensitive, reliable measures of treatment effects (Cook & Campbell, 1979). Obvious consideration of the obligation to confirm the validity and reliability of the research instruments was reflected in the detailed reporting of those factors by the majority of studies examined for this review.

There was a wide range of instruments, varying in reliability, validity, complexity and measurement sensitivity. The strongest investigations used multiple instruments, often repeatedly measured (Barnard, 1982; Boyd & Duncan, 1986; Brooten et al., 1986; Meleis & Swendsen, 1978). Alternatively, several studies used single measures, assessed at one time only (Brown, 1976; Carter-Jessop, 1981; Hall, 1980; Yauger, 1971). The studies represented in this review equally reflected pre-test/post-test and post-test

only designs.

Generally, instruments reflected the intent of the intervention. If the intervention directed at the postpartum mother was intended to affect the health and development outcome of the child, then the measures tapped the qualitative and quantitative aspects of the child's outcome (ie. Bayley Mental and Motor Development Indexes or physical growth, immunization, accident and injury data). Other studies focused on affecting maternal attitude or knowledge used measures which varied from more empirically tested tools to naturalistic observations using either blinded or unblinded observers. Several studies reported using original or adapted tools. Observational procedures and criteria also varied considerably in apparent validity and reliability.

Treatment Effects. Inherent in any scientific clinical intervention comparison is the requirement to demonstrate effect which may be plausibly linked to the experimental manipulation of the explicit independent variables. Resulting experimental effects may be simultaneously characterized along several dimensions. In addition to affecting changes in drift, trend, or slope of a variable, effects may persist or dissipate with time and they may be immediate or delayed in their impact (Cook & Campbell, 1979).

In the absence of valid, reliable measures it becomes impossible to establish and sustain the power of the experimental test. Finding non-significant experimental

outcomes was very common among the studies examined for this review. Sustaining adequate experimental power through the use of appropriately sized samples, pre-established levels of significance (alpha) and valid, reliable instruments would have strengthened the probability of showing significant treatment effects (Cook & Campbell, 1979).

Finally, several of the studies considered for this review failed to "avail themselves of the most powerful statistical methods available" (Combs-Orme, Reis & Ward, 1985, p. 498). Use of multiple t-tests or chi-square tests, rather than more appropriate multivariate methods, may have compromised statistical conclusions. Several reports did not describe the statistical methods underlying their conclusions. Barnard (1982), on the other hand, provided a detailed report of a complex statistical analysis and in the absence of significant findings provided equally detailed reference to outcome comparisons with non-equivalent controls derived from the 1979 NCAP study, providing a direct comparison from a no-treatment control group.

Impacts of Selected Interventions on Postpartum Adaptation

Intervention content. There is evidence that primiparous women benefit from structured teaching and supportive counseling interventions which address their concerns, attitudes, perceptions and role related knowledge (Brown, 1967; Hall, 1980; McNeil & Holland, 1972; Meleis & Swendsen, 1978; Perry, 1983).

Other findings support the conclusion that infant

growth, development, and health may be affected by treatments geared to enhance their mother's knowledge, skill, and growth fostering interaction (Brooten, et al., 1986; Field, et al., 1982; Gutelius, et al., 1977; Larson, 1980; Perry 1983). These studies demonstrate measurable health and development benefits for infants when non-traditional services are extended to their mothers during the weeks and months following birth. It is important to consider, however, that the style of the intervention, even highly structured protocols, may be as important to the outcome as the content of the intervention (Larson).

Women do not, however, respond to postpartum intervention as an isolated event. Siegel et al. (1980) reported that maternal background variables explained more variance in outcome maternal behavior than the intervention itself. Further research is needed to explain how variation in maternal background variables differentially affects responses to selected postpartum interventions.

Intervention timing. While short-term interventions were able to achieve a significant impact of maternal intrapsychic and behavioral measures, these studies suggest measurable infant outcomes extract a greater intervention price. Barnard (1982) was not able to tap significant infant outcome effects following exposure to three months of varied postpartum nursing intervention. It may be suggested that there is a lag time between maternal intervention inputs and significantly altered infant developmental outputs.

Additionally, those studies that were able to claim significant infant development outcomes provided interventions that persisted at least six months (Field et al., 1982; Gutelius, et al., 1977). These findings indicate that intervention intensity and duration differentially affects mothers and their infants. A key factor, however, may be linked to the initial onset of the intervention. When Larson (1980) withheld supportive teaching and counseling intervention until the sixth postpartum week and once it had been initiated, continued it through six months, the mothers showed little benefit. If this finding is replicable, it provides crucial guidance for the development and implementation of maternal postpartum intervention programs. While Larson's report hinted at demoralization of the delayed treatment group, these data suggest that maternal outcomes are linked to the timing of the initial intervention contact.

Hawthorne effects. In addition to the timing, duration and intensity of the intervention, there are less obvious influences affecting outcomes. Several of the longitudinal investigations (i.e. Brooten et al., 1986) examined in this review involved the subjects in multifaceted clinical and interpersonal interventions. Intervention consequences in the form of maternal adaptive outcomes may "transcend the more precise and limited goals of the trial" (Syme, 1978, p. 90).

Interventions which focus on family dyads, over time,

may result in effects due to the "more subtle and indirect influence of involvement in the study" (Syme, p. 90). Gutelius et al. (1977) alluded to the impact of involvement noting, "The mothers were helped because we cared about them, had confidence in them as mothers, valued their children, and were concerned about their development" (p. 296).

Intervention Contact Formats. Contact with postpartum women and their families took many forms, varying from individual home visits to group instruction sessions. Significant findings were reported for all intervention methods and sites. Findings reiterate that the particular strengths or resources of the target postpartum women and their families, however, must be considered and assessed in selecting the intervention method. For instance, reports describing group strategies noted that economically and educationally advantaged women appeared to differentially benefit, compared to their counterparts (McNeil & Holland, 1972; Meleis & Swendsen, 1978). In their respective studies examining postnatal parent support groups, both Cronenwett (1980) and Wandersman (1978a) note the particular social and interpersonal skills essential for advantageous participation in group experiences.

Essential resources may also be technological in nature. Interestingly, several studies combined home visits with supplementary telephone intervention contact (Barkauskas, 1983; Barnard, 1983; Gutelius et al., 1977; Meleis & Swendsen, 1978). Rhode & Groenjes-Finke (1980)

used telephone contact exclusively and reported significant outcomes of increased maternal use of resources and increased maternal concerns regarding family planning.

These findings do not permit conclusions related to the independent efficacy of telephone contact interventions. Barnard (1982), however, specifically noted the strength of telephone contact noting, "In those cases where the phone was used for assessment, it was an important method of obtaining information from and giving information to families, as well as, for monitoring the progress of the families" (p. 99). Since it is estimated that 92% of American households have telephone service (Federal Communications Commission, 1986), further testing of telephone-based assessment, monitoring, teaching and counseling nursing interventions is clearly indicated.

Assessments as a component of postpartum intervention. In addition to obvious dimensions of intervention substance and site, assessment as an intervention was a nearly universal component of these studies. While structured interventions used minimal assessment, individualized interventions commonly reported assessment as a component of the intervention content. In most instances the content of the assessments were not specified in detail, nor were they distinguished from the identified dominant intervention (ie. teaching, counseling etc.).

Barnard (1982), an exception to this generalization, reported the content of the Newborn Nursing Models

assessments in replicable detail and emphasized their utility noting that assessments: "1) provide a framework for determining family strengths and weaknesses, 2) provide a framework for giving feedback to the family, 3) provide a framework for additional assessments, 4) provide stimuli to parents, 5) provide structure and organization to the home visit and time spent with the parent, 6) guide mutual goal setting, and 7) provide an environment for building rapport and trust" (pps. 36-38).

Unexpected outcome. While intuitive reasoning might suggest the opposite, findings suggest that mothers who receive postpartal interventions tend to ask more questions, express more concerns, and engage more community resources than their control counterparts (Barkauskas, 1983; Rhode & Groenjes-Finke, 1980).

Conceptual Framework

Nursing and behavioral science research has consistently suggested the magnitude of ultimate accommodation required during the transition to parenthood. Linking the constructs of psycho-social transition with Lazarus' transactional model of stress and coping provides an exciting and challenging lens through which to view and study maternal postpartum adaptation. For the purposes of this study, maternal adaptation was defined as, "the woman's perceptions of her abilities to cope and adjust to motherhood responsibilities and tasks" (Kutzner, 1984, p. 3).

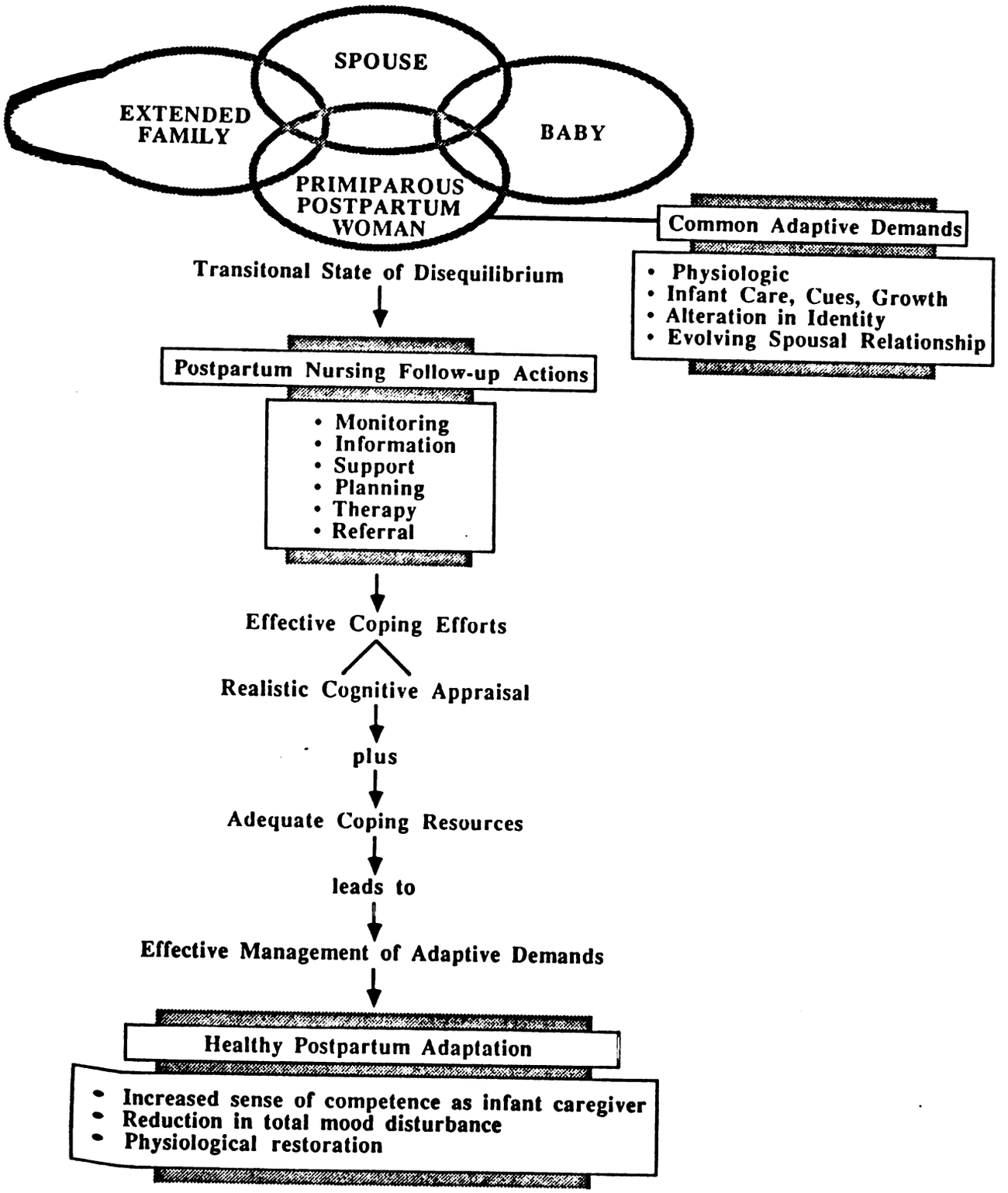
Role change entails an infinite number of associated

micro events which may be potentially appraised as harmful, threatening or challenging environmental demands. A large body of exploratory and descriptive literature has documented those situations or events occurring within the postpartum period which mothers commonly view as demanding, threatening or challenging. While the contextual dimensions of each macro event are unique to the individual, it may be assumed that there are, in fact, universally experienced micro events which cluster to form a common reality of experience. This may be one explanation for recurring themes in studies tapping common postpartum maternal concerns, adaptive demands, and stresses. Holding personal psychosocial assets and developmental variables constant, report after report strikes a familiar cord.

Additional literature suggests that postpartum women undertake intensive coping, in response to common and unanticipated demands, threats or challenges, during the first eight weeks of the fourth trimester and that contemporary health care services and cultural practices do not provide adequate assistance or minimal monitoring of the adaptive outcomes. Despite the repeated application of the term "transition" to explain the postpartum period, the construct of psycho-social transition has been more frequently linked to events characterized by grief and loss. Figure 1 presents a conceptual model which suggests relationships between maternal postpartum adaptive demands, effective coping and ultimate adaptive outcome. The model

Figure 1

Conceptual Model Proposing Effect of Nursing Services During the Postpartum Period on Maternal Adaptation



proposes that postpartum nursing follow-up may promote optimal maternal adaptive potential by providing specific services which are congruent with maternal coping efforts. The outcome of maternal adaptation, at eight weeks postpartum, is evidenced by maternal sense of competence in her role as infant caregiver, appropriate expectations of the infant's developmental capacities as prerequisite to fostering infant growth, adequate self-care to foster her physical restoration, and relative emotional equilibirum.

Importantly, "while a stressful event may have qualities which are understood similarly by people who share a culture, differing coping resources, both personal and social, will make the experience of the event and its psychological implications different for each one" (Wrubel, 1985, p. 6). Interventions which aim to enhance coping must be sensitive to the goals and decisionmaking rules of the person (Pridham, 1984) and take place over time.

The postpartum follow-up nursing actions delineated in Figure 1 were adapted from Barnard, Snyder & Spietz (1982) and included: 1) monitoring, 2) information giving, 3) planning, 4) therapy, 5) support and 6) referral (p. 26). Specific nursing actions falling under the general rubric of support included: 1) self-disclosure, 2) mutual sharing, 3) active listening, 4) information exchange, 5) sounding board, and 6) validation (Barnard, 1982, p. 82).

Nursing actions delineated in this model conceptualize postpartum nursing follow-up as a longitudinal nursing contact, permiting multiple assessment and interaction

points along the continuum of personal and family adaptation evolving during the first eight weeks of the postpartum period. This study was designed as a preliminary test of the effect telephone-based postpartum follow-up nursing actions on selected elements of maternal adaptation.

Extending systematic supportive services to postpartum women has the potential to provide essential supplemental information and clarification. Since ambiguity is a common attribute of stressful events, critical assistance in the form of clarification and information fosters appraisal and problem-solving coping strategies. Additionally, supportive services which recognize and accept the myriad feelings and emotions which accompany transitions and stressful events assist in the regulation of emotion and nurture effective coping and ultimately, optimal adaptation.

Study Questions

This study took the form of a preliminary randomized controlled trial. Key questions to be answered as a result of this research were: 1) Is weekly telephone contact an effective medium through which systematic postpartum nursing follow-up can be delivered during the first six weeks postpartum?; 2) Can systematic nursing postpartum follow-up affect maternal adaptive outcomes as reported at eight weeks postpartum?

Major Hypotheses of the Study

The study questions were translated into the following research hypotheses. It was hypothesized that:

Hypothesis I: Mothers who receive weekly telephone-based, nurse-initiated, postpartum nursing follow-up will report less total mood disturbance, as reflected in mood state, than the control counterparts at eight weeks postpartum.

Hypothesis II: Mothers who receive weekly telephone-based, nurse-initiated, postpartum nursing follow-up will report a greater sense of maternal role competence than the control counterparts at eight weeks postpartum.

Hypothesis III: Mothers who receive weekly telephone based, nurse-initiated, postpartum nursing follow-up will report more relaistic infant development expectations than the control counterparts at eight weeks postpartum.

Hypothesis IV: Mothers who receive weekly telephone-based, nurse-initiated, postpartum nursing follow-up will report less maternal and infant health-related morbidity than the control counterparts at eight weeks postpartum.

Definition of Terms

Fourth Trimester: The final three months of the childbearing year. The twelve week period that begins immediately following birth and includes the puerperium.

Maternal Adaptation: The process of maternal response to the situational demands of the postpartum period; encompassing impact, recoil, and accommodation phases of adjustment occurring during a psycho-social transition. Operationalized as "the woman's perceptions of her abilities to cope and adjust to motherhood responsibilities and tasks" (Kutzner, 1984, p.3).

Maternal Postpartum Adaptive Objectives: Statements of maternal behavioral performance outcomes which indicate the ability of the mother to apply psycho-motor, cognitive and affective learning in response to the personal, infant, and family demands and challenges arising during the first eight weeks of the postpartum period.

Postpartum Follow-up Nursing Care: Systematic delivery of nursing therapeutic services to the new mother during the fourth trimester of the childbearing year and including screening, assessment, and intervention derived from indepth specialty health and nursing knowledge. Operationalized as six weekly telephone-based nurse-initiated contacts.

CHAPTER 3

Methods

Introduction

This chapter will present the methods and procedures used in conducting the research and analyzing the data derived from the study. Following a description of the design and the setting, the sample selection/exclusion criteria and recruitment procedure will be detailed. The independent variable, weekly nursing telephone contact for educational and supportive postpartum follow-up will be explicated. The definition, operationalization and measurement of the dependent variable, maternal postpartum adaptation, will then be presented. The measures selected for inclusion in the study will then be examined and the validity and reliability of each instrument detailed. The tools used to collect demographic and background information and to ascertain the appropriateness of the mother for inclusion in the study will be introduced and the procedure for data collection discussed. The chapter will conclude with the research hypotheses, power analysis and statistical treatment presentation.

Design

This study used a prospective, unmasked randomized controlled trial (RCT) design (Meinert, 1986), with six weekly educational/supportive nurse-initiated telephone contacts with the postpartum woman as the independent variable. Maternal adaptation, at the eighth week postpartum, was the dependent variable. The study design can

be represented syntactically as:

I	R Nurse Initiate	X1	X2	X3	X4	X5	X6	O
II	R Control							O

where R represents random assignment of the subjects to one of the two study groups, X represents exposure to the independent variable, and O represents measurement of the dependent variable during the eighth postpartum week.

A posttest-only experimental design was considered more favorable than a pretest-posttest design due to the potential sensitization of the study groups with a pretest, the impact of a pretest on the subjects during the short hospital stay, and the question of theoretical validity of a pretest measure during the immediate upheaval of the first postpartum days. Despite a lack of assurance of pretreatment equality of the study groups based on a pretest data base, the posttest only, control group clinical trial controls for threats to internal validity, and for one source of external invalidity, the interaction of testing and the experimental variable (Kirk, 1982).

Randomization

Random assignment to experimental and control groups is a process for fostering, to the extent possible, pretreatment equality between groups. Random assignment was accomplished in the clinical setting according to the restricted randomization process (Meinert, 1986, p. 92)

using a table of random numbers (Arkin & Colton, 1963, p. 158). Numbers representing the order of entry into the study were randomly assigned to one of the two study groups. Since it was desired that the treatment groups be equal in size, the allocation ratio was 1:1, intended to produce two equal groups with a size of 30 subjects each (n=30). Reading from left to right, on a two-digit table of second thousand random numbers, subjects were alternately assigned to each group based on their sequence of induction into the study. For each subject, the group assignment was sealed in a numbered envelope, representing the sequence of accrual. Group assignments were kept blind to those inducting the subjects and only became known when the envelopes were opened, sequentially, following the consent and initial data collection procedures which occurred at the time of induction.

Setting

The University of California, Irvine, Medical Center (UCI) is a 490 bed regional tertiary perinatal center. Affiliated with the California College of Medicine, University of California, Irvine, the Medical Center is an active clinical educational institution. Averaging approximately 350 births per month, UCI was selected as the research setting due to the availability of a large and ethnically diverse population of postpartum women.

Initial contact with the Obstetrics Department at UCI occurred when the investigator met informally with the nurse managers to discuss the study problem, procedure, method,

and desired research sample. Formal application to conduct research in the Nursing Department of UCI followed. A comprehensive application, which included the complete research proposal, was considered by the Nursing Research Committee and, following their approval, forwarded to the Committee on Human Reasearch. Permission to use human subjects was also obtained from the University of California, San Francisco, Committee on Human Research. The approved research consent document is contained in Appendix A. Following clearance by the institutional review boards, a meeting was held with physicians and nursing staff affiliated with the obstetrics unit, to orient them to the study. A staff clinical nurse specialist, with particular interest in nursing research, was designated as a research assistant and subsequently assumed responsibility for assisting in the screening and initial induction of study subjects.

Sample Criteria and Recruitment

Sample selection criteria were chosen in order to recruit low-risk women experiencing a "normal" childbirth and postpartum transition. Life circumstances or physiological complications known to be stressful in and of themselves during the puerperium were therefore identified and screened from the research sample. Appendix B presents the Inclusion and Exclusion Criteria Worksheet that was used in reviewing patient medical history and demographic data.

To be considered a potential subject minimal inclusion

criteria were: 1) primiparous postpartum woman, 18 to 38 years of age, 2) ability to speak and read English, 3) birth of a healthy term infant vaginally, or by cesarean due to a non-life threatening circumstances, 4) currently living with the father of the baby, and 5) access to a telephone to receive postpartum follow-up telephone calls. Subjects were excluded from the study for any of the following: 1) an infant with an observable or diagnosed anomaly, 2) maternal or infant illness that required hospitalization beyond the normative one or two days post delivery for routine observation and therapy, 3) maternal history of psychiatric disorder, or substance abuse, 4) maternal report of current significant personal distress such as loss of a loved one or impending separation from the infant's father, 5) or maternal report of unavailability to receive telephone contacts.

The sample size for this preliminary clinical trial was initially limited to permit manageable numbers of mothers in the intervention groups and in consideration of the limited funding and staff available. It was anticipated that following testing of the conceptual model, plus methodological, protocol and instrumentation evaluation, funding would be sought for a full-scale, multi-site trial. The sample size was further reduced when it became apparent that the accrual of sufficient numbers of subjects would be unexpectedly prolonged due to the changing demographics on the obstetric unit which reduced the numbers of eligible subjects.

Subject Accrual

Upon admission to the postpartum unit, mothers were screened to identify potentially eligible subjects. If the potential subject was a private patient, the physician was contacted prior to approaching the subject. Either the research assistant or the investigator then approached the woman to inquire about her willingness to participate in a study of new mothers experiences and responses during the first eight weeks following the birth of their babies. If willingness was indicated, the woman was oriented to the expectations and timeline for the study as described on the consent form. Each subject was assured that every effort would be made, in so far as possible, to maintain confidentiality.

Following signing of the consent form, the subject completed the General Information Questionnaire (Appendix C) which included demographic and baseline social support data. While the mother completed the forms, the investigator or the research assistant left the room briefly to obtain and open the subject's induction sequence envelope, revealing the group assignment. Upon returning to bedside and collecting the completed induction data, the mother was advised of her group assignment, and the expectations for her participation reviewed. At this time the routine and customary postpartum teaching and support services available to all postpartum women at UCI were briefly reviewed with the control group subjects in an effort to ameliorate any

possible sense of loss experienced upon learning they would not receive "a few calls from the nurse". For both groups of subjects, their participation through the completion and return of the questionannaire packet during their eighth postpartum week was emphasized. All primiparous postpartum patients were screened for eligibility over a six month period from January 1987 through July 1987. A total of 57 women were approached resulting in the induction of 46 subjects. Of the 11 women (19%) who were approached and refused to participate, the common reason given for refusal was "I don't want to be bothered at this time".

Of the 46 subjects inducted into the study, six subjects (13%) were lost prior to data collection, three from the control group and three from the treatment group. Analysis of factors contributing to subject attrition revealed that two of experimental group women were Hispanic and moved immediately after hospital discharge. Attempts to reestablish contact with these women by the Hispanic research assistant were not successful, apparently due to suspicion and concern related to immigration status. The three mothers lost to the study from the control group were also Hispanic and were contacted by the research assistant in an effort to facilitate continued participation in the study. Each woman indicated good will toward the study but did not follow through on completion and return of the instrument packet. In each of these cases, it may be that the informal screening of the woman's English language skill was not a valid measure of her ability to either participate

in weekly telephone contacts in English or to complete the instrument packet containing several pages of questionaires in English. Ultimately, these Hispanic women may not have wanted to share their postpartum experiences and responses with an Anglo-Saxon investigator or the large medical center institution.

Two additional mothers were lost to the study. One experimental group mother was dropped from data analysis when her infant required five days of hospitalization following her induction into the study. This mother received the full intervention. A second experimental subject was dropped from the data analysis when her instrument packet was completed during the twelfth postpartum week, two weeks later that any other packet. The final sample consisted of 19 women in the experimental group and 20 women in the control group.

The Independent Variable

The independent variable, six weekly postpartum nurse-initiated telephone calls for the purpose of systematic educational and supportive intervention, was operationalized as a detailed nursing assessment and intervention protocol derived from explicit maternal adaptive behavioral objectives. The intervention protocol was standardized in content and individualized in implementation. The pace and sequence of the intervention were, to the extent possible, contingent upon the cues and expressed concerns each woman brought to each successive telephone contact.

Maternal Adaptation Behavioral Objectives During the First Six Weeks Postpartum

Maternal behavioral objectives, indicative of evolving and progressive postpartum adaptation were gleaned from the literature (Barnard, 1982, 1986; Barnard, Snyder & Spietz, 1982; Cagan & Meier, 1983; Donaldson, 1979, 1981; Gorrie, 1979, 1986; Jennings & Edmundson, 1980; Marecki, 1979; McCarty, 1980; Noga, 1982; State of California, 1980). The resulting global objectives were selected as reflective of the adaptive issues and challenges reported to be particularly acute during the first eight weeks of the postpartum period. The global objectives were not ranked, nor were they intended to be. It was expected that each mother would move through the process of postpartum adaptation on an individual path toward her unique adaptive outcome. It should also be noted that achievement of the behavioral objectives was expected to evolve in depth and complexity in the continuing adaptive trajectory of the mother throughout the first year of the infant's life.

Maternal Adaptive Objectives

For the purposes of this study, upon completion of the sixth postpartum week, the primiparous mother was expected to report her ability to accomplish the following adaptive behaviors:

1. Apply knowledge of normal postpartum physical restoration to establishing a pattern of appropriate self-care and the recognizing and reporting of abnormal physical signs and symptoms.

2. Apply knowledge of basic infant needs, states and state related behaviors to growing confidence and competence in contingent caregiving.

3. Apply knowledge of appropriate expectations of infant growth to providing caregiving in an environment which fosters the infant's physical, emotional, social and cognitive growth.

4. Apply knowledge of common individual and marital demands and challenges triggered by taking on the parent role to the development of coping strategies to nurture individual autonomy and the spousal relationship, expressed in positive morale.

Independent Variable

Transformation of Maternal Adaptive Objectives Into Study Intervention Objectives and Postpartum Follow-up Nursing Protocol

In an effort to assure the adequacy of the strength, integrity and effectiveness of the experimental treatment, this study sought to clearly link and integrate the desired maternal adaptive behavioral outcomes with the nursing intervention goals and content. Most importantly, the conceptual framework for the study provided a constant foundation for assuring the conceptual congruity, hence the theoretical rationale, for the critical dimensions of the treatment and measurment processes (Yeaton & Sechrest, 1981).

The first step in this complex process involved translating the maternal adaptive objectives into Postpartum Follow-up Nursing Protocol Objectives for use during repeated telephone contacts. The maternal objectives were simply reformed to become therapeutic nursing goals during the postpartum period. The following objectives for nursing postpartum follow-up during the first six weeks postpartum were derived:

1. To enhance the mother's self-care knowledge and behaviors toward achieving postpartum physiological restoration.

2. To promote the mother's ability to apply knowledge of basic infant needs, states and state-related behaviors to growing confidence and competence in contingent caregiving.

3. To enhance the mother's ability to apply knowledge of appropriate expectations of infant growth to providing caregiving in an environment which fosters the infant's physical, emotional, social and cognitive growth.

4. To promote the mother's ability to apply knowledge of expected personal and marital demands and challenges triggered by taking on the parent role to the development of coping strategies to nurture individual autonomy and the spousal relationship.

In order to assure the integrity of the experimental nursing treatment, two strategies to monitor the implementation and maintenance of the postpartum follow-up nursing protocol were established. The first strategy entailed explicating specific maternal behaviors which would be used as cues to the attainment of the nursing protocol objectives. The following specific behavioral indices were developed:

Nursing Protocol Objective #1: To enhance the mother's self-care knowledge and behaviors toward achieving postpartum physiological restoration.

To indicate accomplishment of this behavioral objective, the mother would during the course of six weekly telephone contacts:

- Describe expected postpartum restoration and alteration in her breasts, uterus, vagina, perineum, bladder, and bowels.

- Identify alterations in expected restorative processes which should be brought to the attention of the primary health care provider.

- Identify and perform self-care which will foster the healing, comfort and restoration of her body during the first six weeks postpartum.

Nursing Protocol Objective #2: To promote the mother's ability to apply knowledge of basic infant needs, states and state-related behaviors to growing confidence and competence in contingent caregiving.

To indicate accomplishment of this behavioral objective, the mother would, during the course of six weekly telephone contacts:

o Cite the infant's feeding pattern during the a previous 24 hour period noting the following: nature and frequency of feeding; pre- and post-feeding infant cues; relative ease or difficulty of feeding; signs of infant distress during feeding and appropriate caregiver responses; feeding technique and bubbling strategy; mutual positioning for optimal feeding comfort and social interaction.

o Compare the expected infant feeding behaviors to the perceived "average" newborn and identify alterations from normal which need to be reported to the primary health care provider.

o Describe the expected and actual nature and frequency of infant's elimination and implication to caregiver.

o Describe the infant's pattern of sleeping and waking during a recent 24 hour period; expected range of variation in infant sleeping and waking during the first weeks of life; and implications for caregiver seeking to facilitate infant waking or sleeping.

o Identify infant cues for engagement, disengagement and distress and implications for the caregiver.

o Decribe basic caregiving pattern for infant skin care, cord care, bathing, genital hygiene, sensory stimulation and protection from injury.

o Discuss progressive observation of infant sensory capabilities and caregiver actions which foster cognitive, emotional and social growth and development during the first six weeks postpartum.

o Identify signs and symptoms of illness, appropriate caregiver actions to observe and report to primary health care provider.

o Confirm infant's growth in height and weight as noted during at least one well child health visit during the first six weeks postpartum.

Nursing Procotol Objective #3: To enhance the mother's ability to apply knowledge of appropriate expectations of infant growth to providing caregiving in an environment

which fosters the infant's physical, emotional, social and cognitive growth.

To indicate accomplishment of this behavioral objective, the mother would, during the course of six weekly telephone contacts:

o Describe realistic expected and actual infant developmental capabilities during the first six weeks of life.

o Relate initial exploration of ways to play with the infant and report using appropriate toys.

o Appreciate opportunities for fostering development which occur during caregiving and describe strategies to engage the infant in mutual interaction.

o Describe characteristics of infant's temperament and growing confidence in reading infant cues, enjoying interaction and experiencing satisfaction in the capacity of infant to mutually interact.

o Offer positive comments related to the infant's appearance, behavior or development.

Nursing Protocol Objective #4: To promote the mother's ability to apply knowledge of expected personal and marital demands and challenges triggered by taking on the parent role to the development of coping strategies to nurture individual autonomy and the spousal relationship.

To indicate accomplishment of this behavioral objective, the mother would, during the course of six weekly telephone contacts:

o Identify events in daily living, since the birth of the baby, that are particularly demanding, challenging, or threatening.

o Identify responses and outcomes of responses to the demanding/challenging events that have been successful.

o Describe mutual supportive interaction with partner and collaborative caregiving.

o Mobilize and utilize a network of professional and non-professional social support to provide assistance in responding to the concerns, questions, physical needs, and challenges experienced during the first six weeks postpartum.

o Identify the impact of physiological restoration on handling the demands of the new parent role; strategies to mediate fatigue inherent in accomodating infant's sleep/wake

pattern.

o Discuss strategies for fostering intimacy with partner while adapting sexuality to postpartum restorative limitations and given the limits of time and energy during the first eight weeks following birth.

o Discuss implementing a suggestion or trying an alternative suggested during a postpartum nursing follow-up telephone contact

The Nursing Objectives Worksheet (Appendix D) served as a data collection instrument for recording, during each telephone contact, each mother's progress toward attaining the specified behavioral indicators. When, for instance, in the course of monitoring or initiating discussion related to one of the objectives, the mother gave evidence of meeting a particular objective, the date was noted on the worksheet. Prior to each contact, each woman's worksheet was reviewed as a cue to particular areas for focus during the call.

Following explication of the maternal behaviors which would serve as indices of attainment of the nursing protocol objectives, comprehensive postpartum follow-up nursing protocol content was developed. The specific content of the postpartum follow-up nursing protocol was derived from the nursing literature (Barnard, 1982, 1986; Barnard, Snyder & Spietz, 1982; Cagan & Meier, 1983; Donaldson, 1979, 1981; Gorrie, 1979, 1986; Jennings & Edmundson, 1980; Marecki, 1979; McCarty, 1980; Mercer, 1986; Noga, 1982; State of California, 1980) and consisted of both assessment and intervention components. The content of the experimental intervention is detailed in the Postpartum Follow-up Nursing

Protocol presented in Appendix E. During the development phase of the study, the protocol was reviewed by baccalaureate and master's prepared clinical nurses to assure its face validity for practice. It should be noted that an earlier version of the telephone postpartum follow-up nursing protocol had been extensively piloted by the investigator (Donaldson, 1977, 1981). While, for the purposes of this study, the protocol was implemented by the investigator, a master's prepared clinical specialist, the protocol was derived from and designed for implementation by experienced baccalaureate prepared maternity or community health nurses.

To provide a means for monitoring and describing the implementation of the experimental treatment, an important strategy was adapted from Barnard (1986) for this study. A Postpartum Follow-up Nursing Care Record code sheet was developed (Appendix F) for recording specific intervention topics and nursing actions during each telephone contact with the experimental treatment mothers. This tool provided a rich source of data as to the content and focus of the nursing follow-up over the six study weeks. Definitions of the focus of nursing acts, the types of nursing acts and definitions of supportive acts were obtained directly from Barnard (1986) and are presented in Appendix G. Definitions for the coded topics from the Nursing Care Record are specific to this study and are presented in Appendix H.

The Dependent Variable

For the purposes of this study, maternal adaptation was

defined as "the woman's perceptions of her abilities to cope and adjust to motherhood responsibilities and tasks" (Kutzner, 1984, p. 3). Three global adaptive arenas were delineated from the maternal adaptive objectives previously detailed, 1) Maternal Restorative, 2) Maternal Infant Caregiver/Maternal Infant Development Nurturer, and 3) Maternal Psychosocial. In the absence of a valid and reliable instrument which measures the active adaptive outcome of the woman's efforts to manage the common and unanticipated demands, threats and challenges of the first eight weeks postpartum, a combination of descriptive and inferential measures were used to provide meaningful sources of comparative data between the study groups. The entire booklet of instruments required between 30-40 minutes to complete and was well tolerated by the sample.

Mother's Rating of General Health and Infant Health

Adapted from Barnard (1982) and Mercer (1986), this self-report questionnaire (Appendix I) provided an overview of the mother's experience of postpartum physical difficulties, illness, treatment, and overall perception of her health and that of her infant. For the purposes of this study, this instrument was used to tap any postpartum maternal reported health morbidity indicative of maternal restorative and infant health status.

Parental Sense of Competence

Perception of maternal confidence and competence in the parenting role was determined using the Parental Sense of

Competence Scale (PSOC) (Gilbaud-Wallston & Wandersman, 1978) (Appendix J). A self-report questionnaire consisting of 17 statements about parenting, the PSOC uses a 6-point rating scale, with high scores corresponding to a strong sense of competence. "The scale yields two measures: a) the parent's perception of the degree to which she has acquired the skills and understanding needed to be a good parent (skill/knowledge subscale), and b) the parent's perception of the degree to which parenting is rewarding (valuing/comfort)" subscale (Wandersman, Wandersmand & Kahn, 1980, p. 336).

The PSOC was selected because it was "developed as a specific measure of self-esteem in the parenting function" (Gilbaud-Wallston & Wandersman, 1978, p. 1) and thus tapped those aspects of the mother's perceptions of her abilities to cope with the responsibilities and task of new motherhood which related to her role as infant caregiver. Intended for the postpartum parent, the PSOC had established convergent validity, discriminant validity, internal consistency, and reliability *r*-values ranging from .46-.82 (Gilbaud-Wallston & Wandersman, 1978).

Profile of Mood States

The Profile of Mood States (POMS) (Appendix K) is a 65 item self-report form which is sensitive to detecting changes in mood related to responses to therapeutic treatment (McNair, Lorr, & Droppleman, 1971). The six dimensions of mood measured by the POMS were: 1) Tension-Anxiety, 2) Depression-Dejection, 3) Anger-Hostility, 4)

Vigor-Activity, 5) Fatigue and Inertia, and 6) Confusion-Bewilderment. The subject responds to 65 adjectives describing feeling or mood, during the past seven day period, on a 5-point scale.

The POMS was selected as the measure of maternal psychological status because of its sensitivity to therapeutic interventions. In addition, the dimensions of mood tapped by the POMS were highly congruent with the conceptual framework of the study derived from psychosocial transition and transactional stress and coping constructs. It may be posited that maternal mood is a valid indicator of the relative fit between the perceived postpartum demands, threats and challenges and the effectiveness of the woman's coping or management efforts. Predominant negative mood dimensions, such as anxiety, depression, inertia, and bewilderment, were, for the purposes of this study, construed as indicative of adaptive difficulty. Differences in POMS Total Mood Disturbance (TMD) scores between study groups, then, provided a potentially sensitive indicator of the effect of the experimental treatment.

The POMS had strong and established reliability and validity. Internal consistency within the six mood scales was reported near .90. Test-retest coefficents for the six factors ranged from .61-.69. Importantly, impressive concurrent validity coefficents with established measures existed for the majority of the POMS subscales (McNair, Lorr, & Droppleman, 1971). With a long history of use in

diverse clinical and non-clinical research, the POMS had been recently used with new mothers during the first year postpartum (Affleck, Allen, McGrade, & McQueeney, 1982).

Developmental Expectations

This five item self-report measure (Appendix L) tapped the mother's knowledge and expectations of infant development. The mother simply responds to each "at what age question" question with her answer in weeks, months or years (Snyder, Eyres, & Barnard, 1979). An intriguing contributing factor to the quality of infant stimulation, this measure is highly correlated with parental resources and infant development outcomes. This instrument was selected for this study as a measure of the mother's outcome as a nurturer of the infant's development. In addition, this instrument was the strongest direct measure of the effectiveness of the teaching component of the experimental intervention protocol.

Mother's Narrative Questionnaire

This self-report tool (Appendix M) was adapted for this study from Barnard (1982). Revised from an interview to a self-report format, the MNQ asked the mother to describe her overall feelings, concerns, sources of help and satisfaction with that help, since bringing the baby home from the hospital.

Intervening Variable

In recognition of the extensive and compelling evidence linking social support with health and coping outcomes, this study utilized a measure of this construct, the Wandersman

Social Support Scale (WSS) (Wandersman, Wandersman & Kahn, 1980)), for the purpose of providing a baseline assessment of the comparability of the study groups. This six item scale measures the woman's perception of social support, an appraisal of the general supportiveness of the social network. In a recent study, Mercer reported using this instrument with a large sample (n = 219) of low risk pregnant women and obtaining alpha measures of reliability of .80 (personal communication, August, 1986).

Research Hypotheses

Hypothesis I: Mothers who receive weekly telephone-based, nurse-initiated, postpartum nursing follow-up will report less total mood disturbance scores than the control counterparts at eight weeks postpartum.

Hypothesis II: Mothers who receive weekly telephone-based, nurse-initiated, postpartum nursing follow-up will report a greater sense of maternal role competency than the control counterparts at eight weeks postpartum.

Hypothesis III: Mothers who receive weekly telephone-based, nurse-initiated, postpartum nursing follow-up will report more accurate infant development expectations than the control counterparts at eight weeks postpartum.

Hypothesis IV: Mothers who receive weekly telephone-based, nurse-initiated, postpartum nursing follow-up will report less maternal and infant health-related morbidity than the control counterparts at eight weeks postpartum.

Power Estimate

The experimental power of this clinical experiment was calculated for the purpose of determining the probability of statistically demonstrating a significant difference between the distribution of the experimental and control group means. Holding the accrued n constant for each study group and given the designated alpha of .10, the probability of achieving significance was approximately .16 based on an effect size of .42 (Cohen & Cohen, 1969, p. 30). It was consistent with the aims of this study to proceed with the clinical trial, despite the low probability of demonstrating significant experimental effects.

Procedure

On the first or second hospital day postpartum, after the consent was obtained, all subjects completed the General Information Questionnaire and the Perceived Social Support Scale. The time required during the induction contact was 30 minutes.

Following discharge from the hospital, the mothers in the nurse-initiated, full treatment group were contacted by telephone on a weekly basis for six consecutive weeks. Mothers in both groups received the usual and customary postpartum nursing services which included individual and group teaching in preparation for discharge 24-72 hours following birth. As is routine at UCI, mothers in both groups who qualified for referral or were eligbile for services were referred to the Orange County Health and Human Services Agency for Public Health Nursing Service following

hospital discharge.

The collection of data to measure the dependent variable, maternal postpartum adaptation, occurred at eight weeks postpartum in the subject's home at her convenience. Questionnaire booklets were mailed to each subject during the sixth postpartum week. Mothers were instructed to complete the response booklet within five days of the baby's eight week birthday and to return it immediately in the enclosed, addressed and stamped envelope. Analysis of the date of response to the instrument packet revealed that 64% of the women reported completing the packet during the eighth postpartum week. The remainder of the women responded plus or minus two weeks. Upon receipt of the completed packet each mother was sent a gift of name brand "baby wipes" in appreciation for her contribution to the study.

Statistical Treatment

The data were entered from the questionnaires and instruments directly into the data analysis computer program. The computations and analyses were carried out using the Crunch Statistical Package (Crunch Software Corporation, 1987).

To describe the sample, frequency distributions and measures of central tendency were computed for the demographic and categorical variables. The experimental and control groups were then compared with respect to these variables using chi square tests for categorical variables

and t tests for interval level variables. In computing the cross tabulations, variables with several categories of responses containing very small frequencies per cell were subjected to individual examination which permitted the collapsing of similar categories to produce larger frequencies per cell. For example, the variable labeled "ethnicity" was ultimately compared between groups as white and non-white, since the frequencies in each non-white cell were too small to fulfill the statistical requirements of the chi square test.

The four hypotheses were examined using two-tailed, independent group t tests, based on the pooled variance estimate, to determine if the mean scores from the experimental and control groups were significantly different. Differences reaching or surpassing the critical alpha value p .10 were considered adequate support for the hypotheses.

Qualitative data were analyzed by examining raw data responses and formulating categories derived from the responses. The validity of the resulting proposed categories were examined by asking four nurses with advanced specialty degrees in maternal and child health to code a subset of the data using the proposed categories. The coding by the expert panel was compared with that of the investigator. The mean inter-rater reliability was .85 with a range of .73-.99. Suggestions to strengthen the category labels were integrated into the final version of the codes. Following categorical coding, the experimental and control

groups were then compared using chi square tests for the qualitative data scores.

The relationship between the two major dependent variables, Profile of Mood States and Parental Sense of Competency, was determined by subjecting the total scores for each instrument to a Pearson Product Moment Correlation. In addition to providing intriguing new information regarding the covariance and interrelationship of these two measures in a small sample of postpartum women, this analysis was carried out to determine the concurrent validity of the instruments.

The reliability of the two major standardized instruments, POMS and PSOC, based on internal consistency was examined using the coefficient alpha computation (Nunnally, 1978). The result of this analysis provided additional information regarding the parametric strength of these instruments among postpartum women.

Summary

This chapter has detailed the methods, procedures, and instruments used in conducting the study and collecting the data for this preliminary clinical trial. The independent variable, weekly telephone contact for postpartum follow-up nursing care was delineated and the dependent variable, maternal postpartum adaptation was operationalized. The research hypotheses were explicated and the statistical treatment methods discussed.

CHAPTER 4

Findings and Discussion Related to the Sample and Hypotheses

Introduction

This chapter will present the results of data analysis which describe the characteristics of the sample, the implementation of the experimental treatment and test the hypotheses. The first section of this chapter will present demographic and baseline characteristics of the study sample and delineate differences between the experimental and control groups. The second section of this chapter will detail the outcome of the implementation of the experimental nursing intervention. The third section will present findings related to the research hypotheses, followed by the fourth section which will discuss the findings, study design and relation of the findings to the conceptual framework.

Sample

Demographic Characteristics

The sample was composed of 39 low-risk primiparous women, 18-37 years old who had delivered healthy term infants. The majority of the sample were 18-27 years of age. The mean age for the experimental group was 23.50 years (SD = 4.06) and the mean age for the control group was 25.90 years (SD = 5.35). All the women reported living with the father of the baby; 85% were married and 15% were unmarried and living together. Chi square analysis of maternal age and maritial status characteristics revealed that there were no significant differences between the experimental and

control groups. Table 2 presents a summary of the demographic characteristics of the sample and displays the differences between the study groups.

The majority of the women were Caucasian, although 18% of the sample were non-white, with Hispanic women representing 10% of the non-white subjects. It should be noted that the ethnic mix of the sample was generally representative of the childbearing population from which it was drawn, with the exception that asian women where not represented. The white to non-white mix was statistically similar to the recorded ethnicity of childbearing women in Orange County, California (Orange County Health Planning Council, 1985). There were no significant differences related to ethnicity between the study groups.

The sample reflected a mixture of educational levels. All subjects reported completing high school, with 36% attending some college and 28% completing a minimum of a baccalaureate degree. There were no significant differences between the experimental and control groups with respect to educational level.

The sample was nearly equally divided between those reporting a yearly family income under $20,000 and those reporting an income in excess of $20,000. Analysis revealed that the experimental and control groups did not differ significantly with respect to family income.

Obstetric Characteristics

Obstetric characteristics of the sample were analyzed for differences between the study groups and are presented

in Table 3. The majority of the women reported beginning prenatal care during the first two months of pregnancy. There were no significant differences between the study groups related to the onset of prenatal care. In addition, the majority reported attending preparation for childbirth classes. There were no significant differences between the experimental and control groups related to participation in childbirth education.

The modal labor for the sample as a whole was 9-15 hours in length, culminating in a spontaneous vaginal birth. There were no significant differences between the study groups related to the length of labor. The cesarean birth rate for the sample was 18%, which is consistent with the childbearing population in Orange County, California (Orange County Health Planning Council, 1985). There were no significant differences between the comparison groups related to the type of delivery.

The study groups produced nearly identical proportions of male to female infants, with 56% of the newborns male and 44% female. There were no significant differences between the groups related to the gender of the newborn.

Only 21% of the women reported no prior experience caring for infants, with 33% reporting very little experience and 46% reporting a moderate to large amount of experience. The study groups did not differ significantly with respect to prior experience with infant care.

Table 2

Demographic Characteristics of the Sample

Characteristic N=39		Group Experimental n=19	Control n=20	Percent	Chi-Square	p
Age (in years)						
18-22	15	8	7	39%		
23-27	15	8	7	39%		
28-37	9	3	6	23%	1.11 (df=2)	.57
Mean		23.50	25.90			
SD		4.06	5.35			
Marital Status						
Married	33	14	19	85%		
Unmarried	6	5	1	15%	1.96 (df=1)	.16
Ethnicity						
Caucasian	32	13	19	82%		
Black	1	1	0	3%		
Filipino	1	0	1	3%		
Hispanic	4	4	0	10%		
Other	1	1	0	3%	3.04 (df=1)	.08
Education						
High School	14	8	6	36%		
Some College	14	6	8	36%		
College	11	5	6	28%	.64 (df=2)	.73
Income (N=38)						
$0-19,999	19	11	8	52%		
$20,000-$39,999	9	3	6	24%		
$40,000 +	9	4	5	24%	2.05 (df=2)	.36

Table 3

Obstetric Characteristics of the Sample

Characteristic	Group Experimental n=19	Control n=20	Percent	Chi-Square	p
Began Prenatal Care					
1-2 months	8	12	53%		
3-4 months	7	4	29%		
5-9 months	3	4	7%	1.66 (df=2)	.44
Attended Preparation for Childbirth Classes					
Yes	11	12	59%		
No	8	8	41%	.04 (df=1)	.85
Length of Labor					
0-8 hours	2	6	21%		
9-15 hours	13	9	56%		
16-40 hours	4	5	23%	2.81 (df=2)	.25
Type of Delivery					
Vaginal	15	17	82%		
Cesarean	4	3	18%	.01 (df=1)	.94
Gender of Infant					
Male	11	11	56%		
Female	8	9	44%	.02 (df=1)	.89
Previous Experience caring for infants					
None	2	6	21%		
Very Little	6	7	33%		
Moderate-Large Amt.	11	7	46%	2.94 (df=2)	.23

Due to the potential influence of perceived social support on the treatment effect, a baseline measure of perceived social support was obtained at induction using the Wandsersman Social Support Scale (Wandersman, Wandersman & Kahn, 1980). As shown in Table 4, the experimental and control subjects did not differ significantly with respect to perceived social support. It is interesting to note that the WSS mean scores for the study sample (E = 26.26, C= 27.05) were very similar to those reported by Mercer (personal communication, May, 1987) for a large sample (N = 181) of low risk women during the early postpartum period (M = 24.53, SD = 4.02)

In summary, data analysis revealed that the experimental and control groups did not differ significantly with regard to the demographic, obstetric, and social support characteristics measured prior to the implementation of the experimental treatment intervention. Although the mean age for the experimental group was 2+ years younger than their counterpart controls, this difference did not reach statistical significance.

Table 4

Baseline Measure of Perceived Social Support

Characteristic N=39	Group Experimental n=19	Control n=20	t value df=37	p
Perceived Social Support (WSS)				
Mean	26.26	27.05	-1.14	.217
S.D.	2.35	1.93		

Implementation of the Independent Variable

The experimental treatment, six weekly postpartum nurse- initiated telephone contacts, was guided by the specified objectives for maternal adaptation during the first eight weeks postpartum and based on the content delineated in the nursing assessment and intervention protocol. In order to monitor the integrity of the independent variable, the content of each telephone contact was coded with regard to the topics discussed and the nursing actions taken. Table 5 presents a summary of the content of the experimental treatment implementation from the first (T1) contact with the experimental subjects, through the sixth (T6) and final contact. In an effort to control for variation in intensity of the treatment, each subject received exactly six contacts, separated by approximately seven days between calls. The duration of each contact varied, according to the number and intensity of the topics discussed. Most calls lasted 15-30 minutes. Heterogeneity of treatment implementation was ameliorated through the use of a single nurse initiating the treatment contacts.

Throughout the treatment, as Table 5 demonstrates, monitoring was the most frequent nursing action taken, accounting for 66% of the total nursing actions. Information-giving was the next most frequent nursing action accounting for 16% of the nursing actions. Providing support constituted 12% of the nursing actions and therapy and planning each were 3% of the nursing actions.

Table 5

Summary of the Experimental Intervention Content and Nursing Actions

	T1				T2				T3				T4				T5				T6				TOTAL	%
	Phys Care	Inf Care	PP Adapt	Inf Dev	Phys Care	Inf Care	PP Adapt	Inf Dev	Phys Care	Inf Care	PP Adapt	Inf Dev	Phys Care	Inf Care	PP Adapt	Inf Dev	Phys Care	Inf Care	PP Adapt	Inf Dev	Phys Care	Inf Care	PP Adapt	Inf Dev		
Monitoring	222	202	75	50	195	208	93	108	144	189	119	107	137	184	110	109	85	182	139	97	60	168	121	67	3171	66%
Information	77	34	22	35	33	41	18	44	31	24	38	41	34	21	24	28	17	17	45	24	13	24	56	22	763	16%
Support	45	26	21	10	20	26	19	14	26	21	32	32	28	18	24	20	14	11	44	18	11	24	50	14	568	12%
Therapy	17	10	6	2	7	6	1	6	12	2	13	4	13	5	0	5	9	3	3	3	9	11	6	4	157	3%
Planning	14	9	6	1	8	6	1	6	9	2	13	4	12	4	0	5	9	3	4	3	9	11	5	4	148	3%
TOTAL	375	281	130	98	263	287	132	178	222	238	215	188	224	232	158	167	134	216	235	145	102	238	238	111	4807	100
Days, between calls	—				7.28				6.87				7.20				7.14				7.32				7.16	

Table 5 captures the gradual shift in the focus of the telephone contacts that evolved over the course of the intervention. During the first four weeks postpartum, infant care and maternal physiological self-care were the predominant topics discussed. Beginning in the fifth postpartum week, there was a noticable decrease in maternal physiological self-care discussion and an increase in discussion of the more global postpartum adaptation topic. The infant development topic was especially prevalent during the second through fourth week. The infant care topic remained a focus throughout the intervention contacts.

Hypotheses

The hypotheses were derived from the research questions and tested whether six weekly nurse-initiated supportive and educational telephone contacts with low risk first-time mothers following hospital discharge could have a measurable effect on the process of maternal postpartum adaptation. The intervention was designed to monitor the mother's attainment of generic postpartum adaptive objectives, to foster learning necessary to maximize attainment of the adaptive outcomes and to provide support. The findings related to each of the four hypotheses are presented below.

Effect of the Intervention of Maternal Mood Disturbance

Hypothesis I stated that mothers who receive weekly telephone based, nurse-initiated, postpartum nursing follow-up will report less total mood disturbance, as reflected in mood state, than the control counterparts at eight weeks postpartum. This hypothesis was tested by

computing the total mood disturbance score on the Profile of Mood States (POMS) by summing the total scores on each of the six mood factor subscales, with vigor weighted negatively (McNair, Lorr & Droppleman, 1981). The distribution of the mean POMS total mood disturbance scores were compared between groups using a two-tailed *t* test. Table 6 presents the results of this analysis, indicating that the experimental group had a slightly lower mean score, less total mood disturbance, than the control group. The difference between the groups was not statistically significant ($t = -.47$, $df = 37$, $p = .64$). The mean total mood distrubance scores for the sample ranged from -32. to 105. Affleck et al. (1982) noted within group variance of similar magnitude in their sample of postpartum women, reporting total mood disturbance scores ranging from -.30. to 127.

In examining the differences between the groups for each of the six POMS factor subscales the following findings were revealed. The experimental group attained slightly lower scores on the T (tension-anxiety) factor, A (anger-hostility) factor, and the F (fatigue-inertia) factor. In addition, the experimental group scored slightly higher on the V (vigor-activity) factor. Despite the fact that these differences were in the hypothesized direction, the differences between the groups were not statistically significant. There were virtually no differences between the groups on the POMS D (depression-dejection) and the C

(confusion-bewilderment) factors. In summary, the findings did not support Hypothesis I.

Effect of the Intervention on Perceived Maternal Role Competency

Hypothesis II stated mothers who receive weekly telephone based, nurse-initiated, postpartum nursing follow-up will report a greater sense of maternal role competence than the control counterparts at eight weeks postpartum. This hypothesis was tested by comparing the distributions of the experimental and control groups' Parental Sense of Competence (PSOC) total scores and analyzing the differences between the means using a two-tailed *t* test. There was virtually no difference between the means ($t = -.10$, $df = 37$, $p = .92$). Hypothesis II, therefore, was not supported.

Effect of the Intervention on Maternal Knowledge of Infant Development

Hypothesis III stated mothers who receive weekly telephone based, nurse-initiated, postpartum nursing follow-up will report more realistic infant development expectations than the control counterparts at eight weeks postpartum. This hypothesis was tested by comparing the distributions of the experimental and control groups Developmental Expectations (DE) total scores and analyzing the difference using a two-tailed *t* test. The DE total score was obtained by summing the reported developmental expectations in weeks and dividing the total by the total number of items. Table 7 presents a summary of these findings. The control group demonstrated lower total developmental expectations scores, in weeks, than the

experimental group. The difference between the groups, in the direction opposite that hypothesized, approached, but did not reach significance (t = 1.52, df = 34, p = .14).

Further scrutiny of the raw scores for this measure revealed the presence of two outlier cases, both representing experimental group subjects. In an effort to determine the degree of influence these cases exerted on the distribution of means between the groups, a second t test was computed with the outlier cases deleted. Table 8 presents the findings with a marked decrease in the difference between the groups noted (t = .62, df 32, p = .54). Hypothesis III, therefore, was not supported.

Effect of the Intervention on Maternal and Infant Health as Reported by the Mother

Hypothesis IV stated mothers who receive weekly telephone based, nurse-initiated, postpartum nursing follow-up will report less maternal and infant health-related morbidity than the control counterparts at eight weeks postpartum. This hypothesis was tested by comparing the distributions of the experimental and control groups' scores on a cluster of items gleaned from two questionnaires entitled Mother's Rating of Infant Health and Mother's Rating of General Health. Table 9 presents the results of the analysis of the differences between the means using chi square.

There was no difference between the groups with regard to infant illness. One-half the mothers reported that their infants had been ill. The most frequent illnesses cited

were colds and conjunctivitis. Supplementary findings reveal that three of the contrast group infants were rehospitalized following hospital discharge. Two infants required 24-48 hours of phototheraphy treatment for hyperbilirubinemia and one infant required surgery for pyloric stenosis at one month.

There were no differences between the experimental and control groups related to maternal reports of infant accidents or injury; 97% of the mothers reported no accident incidents. One control group mother reported her baby fell out of the stroller, accounting for the single accident reported, and with no reported morbidity. Overall, 87% of the subject mothers rated their infant's health as very good, with a slight difference between the groups that was not statistically significant.

Nearly one half the women reported they had been ill. Experimental group mothers reported a slightly higher incidence of illness than their control counterparts. The most common illness experienced by both groups was the common cold, with two experimental mothers also reporting mastitis, and one experimental mother reporting a cesearean incision wound separation. The difference between the groups was not significant.

Of those mothers reporting illness (n=18) during the first eight weeks postpartum, none required hospitalization. In fact, 50% of the sample did not require any medical care for their illness, while 22% visited the emergency room and 28% visited their doctor or clinic. There was a slight

difference between the groups related to the kind of care required for the illness, however, the difference between the groups was not significant.

The data revealed a greater difference between the groups related to the mother's overall rating of her health. While 49% of the sample rated their health as very good, the majority of these were control group subjects. A larger number of experimental group women rated their health as good. The groups were nearly equal in contributing to the 14% of the mothers who labeled their health as fair. The difference between the experimental and control groups related to the mother's rating of her own health was not significant.

In summary, there were no significant differences between the groups related to maternal and infant health and morbidity. Hypothesis IV, therefore, was not supported.

Table 6

Measures of Maternal Mood Disturbance and Sense Of Competence as a Parent

Instrument	Sample N=39	Group Experimental n=19	Control n=20	t value (df=37)	p
POMS Total Mood Disturbnace Score					
	Mean	20.90	25.85	-.47	.64
	SD	28.22	36.61		
POMS T Factor	Mean	8.84	10.35	-.72	.47
	SD	5.88	7.15		
POMS D Factor	Mean	8.00	7.85	.06	.95
	SD	7.43	8.21		
POMS A Factor	Mean	6.95	9.30	.88	.39
	SD	6.58	9.80		
POMS V Factor	Mean	18.37	17.45	.47	.64
	SD	5.37	6.80		
POMS F Factor	Mean	7.42	9.50	-1.06	.30
	SD	5.94	6.26		
POMS C Factor	Mean	6.47	6.25	.15	.88
	SD	4.84	4.46		
PSOC Total Score					
	Mean	80.84	81.15	-.10	.92
	SD	7.52	10.75		
PSOC SK Subscale	Mean	38.21	37.70	.30	.77
	SD	5.20	4.48		
PSOC VC Subscale	Mean	42.63	43.45	-.43	.67
	SD	5.72	6.25		

Table 7

Measure of Maternal Developmental Expectations

Instrument	Sample	Group Experimental n=18	Control n=18	t value	p
DE Total Score	Mean	5.09	2.90	1.52	.14
	SD	5.59	2.49	df=34	
DE #1	Mean	5.42	3.53	1.25	.22
	SD	6.14	2.39	df=35	
DE #2	Mean	5.72	4.74	.37	.71
	SD	8.80	7.16	df=35	
DE #3	Mean	6.89	3.53	1.18	.25
	SD	11.95	3.32	df=35	
DE #4	Mean	4.39	1.61	1.85	.07
	SD	6.18	1.50	df=34	
DE #5	Mean	2.89	.95	1.23	.22
	SD	6.48	1.81	df=35	

Note. The scores are calculated and reported in weeks.

Table 8

Measure of Maternal Developmental Expectations--OUTLIERS DELETED

Instrument	Sample	Group Experimental n=16	Control n=18	t value	p
DE Total Score	Mean	3.53	2.90	.62	.54
	SD	3.38	2.49	df=32	
DE #1	Mean	4.94	3.53	.96	.34
	SD	5.87	2.39	df=33	
DE #2	Mean	3.44	4.74	-.58	.57
	SD	5.97	7.16	df=33	
DE #3	Mean	3.75	3.53	.19	.85
	SD	3.72	3.32	df=33	
DE #4	Mean	2.69	1.61	1.26	.22
	SD	3.26	1.50	df=32	
DE #5	Mean	2.63	.95	1.03	.31
	SD	6.84	1.81	df=33	

Note. The scores are calculated and reported in weeks.

Table 9

Items Related to Maternal and Infant Health and Morbidity

Item	Sample N=39	Group Experimental n=19	Control n=20	%	chi square	p
Has baby been ill?						
Yes	9		10	49%		
No	10		10	51%	.02 (df=1)	.88
Has baby had injuries or accidents?						
Yes	0		1	3%		
No	19		19	97%	.00 (df=1)	.98
Mother's overall rating of Baby's health n=38						
Very Good	14		19	87%		
Good	4		1	13%		
Fair	0		0	0		
Poor	0		0	0	1.18 (df=1)	.28
Has mother been ill?						
Yes	10		8	46%		
No	9		12	54%	.22 (df=1)	.64
Kind of care required for mother's illness? (From Yes above--n=18)						
ER Visit	3		1	22%		
Clinic/MD	3		2	28%		
No Med. Care	4		5	50%	1.10 (df=2)	.57
Mother's overall rating of her health n=37						
Very Good	6		12	49%		
Good	9		5	38%		
Fair	3		2	14%	3.32	.19

Instrument Reliabilities

Coefficient alpha was computed for the two standardized instruments to assess the relative internal consistency of the items by calculating the average correlations among items. Each instrument was selected for use in this study because it had an established psychometric record. However, alpha coefficients were specifically computed for this study sample, with the study groups combined, following administration of each instrument to the population sample in this study. Table 10 presents the alpha reliabilities for the POMS and PSOC measures.

Review of the alpha coefficients confirms that each instrument attained acceptable levels of internal consistency. The POMS alpha coefficients are nearly identical to those published for the instrument (McNair, Lorr, & Droppleman, 1981, p. 9). The PSOC total scale alpha is slightly lower than previous reports (.83, Wandsersman, 1978, p. 8; .82, Mercer, personal communication, May, 1987).

Table 10

Alpha Reliabilities for Selected Measures of Maternal Postpartum Adaptation

Instrument	POMS	PSOC
Alpha	.92	.77
Standardized Alpha	.93	.77
Scale Mean	78.00	81.10
Scale Variance	722.00	83.20

Note. The POMS scale mean, during alpha computation, was calculated without negatively weighting the Vigor score.

Discussion

The hypotheses for this study were not supported and the findings indicate that providing low risk primiparous women with weekly nursing telephone follow-up for educational and supportive intervention as implemented in this study did not have a measurable effect on their adaptation outcome as reported at eight weeks postpartum. Many factors may have interacted to contribute to these findings. The following discussion will consider plausible explanations for the failure to demonstrate effects due to limitations in the study design, operationalization of the dependent variable, intervention content, and implementation. A preliminary evaluation of the strengths and limitations of the theoretical framework will conclude the discussion.

Design

Failure to support the research hypotheses may have been related to limitations and inadequacies in the study design. Clearly, the small sample size had a strong impact on the power of the experiment and the subsequent lack of statistically significant findings. Statistical conclusion validity was further compromised by difficulties in obtaining eligible subjects and by subject attrition. In view of these considerations, the inability to demonstrate significant effect was predictable.

The timing of data collection may have also influenced the inability to detect a treatment impact on maternal mood

disturbance. The presence of unusually large within-group variation revealed by the POMS may be indicative of continuing psychological disequilibrium. Repeated measures at three and four months postpartum would have permitted tracking the potential effect of the intervention as the mother consolidated her adaptive course during the accomodation phase of the psychosocial transition.

Content and Implmentation of the Intervention

The implementation of the educational component of the independent variable may have been compromised by depending solely on verbal teaching and learning. One strategy to enhance the effectiveness of the teaching and learning would have been to supplement the content of the telephone call with printed materials sent to the mother by mail. Without printed materials, the nurse on the telephone often had to resort to complex explanations, when a picture would have saved a thousand words.

Generally, the content of the intervention was congruent with the concerns, questions and issues the experimental subjects brought to the continuing telephone contacts. The protocol did not, however, reflect adequate content related to preparation to return to work and career. Women planning to return to work during the first two months postpartum initiated this topic early in the intervention and continued to discuss it on a weekly basis. They sought information, support and guidance in preparing themselves and their baby for the transition in caregiving.

The vast majority of the experimental mothers presented

sufficent evidence of attainment of the Postpartum Follow-up Nursing Protocol Objectives. However, assessing the extent to which the objectives were met was a subjective process. Often the mothers provided more than adequate evidence of their achievement of an objective; other times it was necessary to cue the mother to discuss a particular adaptive task in order to begin to assess her attainment of the related adaptive objective.

Given valid objectives and congruent content, the teaching component of the intervention may have benefited from a more systematic instructional design and implementation. For example, combining individualized teaching with access to complementary printed materials would permit following up teaching topics for each call with informational materials and following up her response to that information during the next call. A stronger teaching methodology might have greatly influenced the performance of the experimental mothers on the Developmental Expectations (DE) measure. Despite the fact that the appropriate expectations for each of the DE items were discussed with each of the experimental mothers, the discussion was usually embedded in an overall discussion of the infant's behavior. Strengthening the teaching and learning component of the intervention through the use of selected cognitive and experiential learning activities might have helped the experimental mothers master the knowledge measured by the DE instrument.

In acknowledging the lack of significant findings in support of the research hypotheses, it should be noted that a majority of the women in the experimental group added unsolicited comments to their questionnaire packets expressing appreciation for the intervention contacts. Responses included, "Thank you for your help. It made me more comfortable those first scary weeks"; "I would just like to thank you for all of your help in the past six weeks. It has really helped me alot". While several mothers wrote simply, "Thanks for all your help". One mother wrote at length,

> "I would only like to stress once again, that I would have had to seek outside help and advice much more frequently than I did if I had not had the wonderful experience of phone calls from you. Your help and encouragement brought me through my six week postpartum period with little anxiety and lots of confidence in my ability to mother my new baby".

These findings suggest that the supportive component of the intervention was well received and successful from the subject's perspective. Findings reveal that if a mother had at least one telephone contact, she was never lost to the study. It would appear that the experimental women established a rapport with the intervention nurse and perceived the experience as directly related to their needs during the first six weeks postpartum. This study was not able to empirically quantify what, if any, benefit accrues to the postpartum woman from the interpersonal and

systematic process of teaching and learning, supporting, sharing and caring which was the essence of the experimental nursing intervention treatment tested.

Operationalization of the Dependent Variable

In the absence of a valid and reliable instrument with which to measure the phenomenon of maternal postpartum adaptation as conceptualized in the theoretical framework, it was necessary to dissect maternal adaptation into related components and use multiple measures to cumulatively infer adaptation. While every attempt was made to select measures which were both theoretically consistent with the conceptual model and congruent with the objectives, content and method of the experimental treatment, it was not possible to measure all facets of postpartum maternal adaptation. As a result, the operationalization of the dependent variable was not empirically comprehensive.

As previously noted, group variance for both groups was unusually large for the POMS. Detecting significant treatment effects may have been compromised by the presence of marked variance. In a theoretically related qualitative item, the mothers were asked 'What has it been like for you since you brought the baby home from the hospital?' In response, 36% of the total sample reported a combination of intense, bipolar feelings. Sample responses included, "enjoyable, frustrating; difficult, wonderful; joy, confusion and tension". An additional 30% of the sample reported negative feelings, such as "it's been hard; I've

been overwhelmed". On the other hand, 18% of the sample reported positive feelings, for example, "I'm very happy; We've never been happier", and 15% of the sample reported things were changed or different, such as "everything is changed, different; my life is totally different". The difference between the study groups was not statisically significant for this item (X^2 = 6.90, df = 3, N = 39, p = .08) but the findings reveal that at eight weeks postpartum there was continuing disequilibrium expressed as wide variation in how each woman interpreted the demands, threats and challenges she had encountered.

The POMS would appear to be sensitive to the wide range in mood characteristic of a population of postpartum women at a given measurement moment. It is the strength of that sensitivity and the resulting marked within-group variance that may have precluded the detection of subtle effects resulting from the experimental intervention.

Upon further examination, it is also interesting to consider how findings from this study related to the Developmental Expectations (DE) measure compare with those obtained by Snyder & Barnard (1979) in their original report. Mean scores, stated in weeks, on each of the five items (7.8; 9.5; 6.9; 4.0; 11.4) respectively were notably higher than the scores obtained from this study. Assuming that recent scores may reflect exposure to mass media dissemination of exploding knowledge regarding infant behavior and development, there continues to be a wide range in maternal developmental expectations.

In examining the raw scores from the POMS and PSOC measures, it was noted that mothers with high POMS total scores had low PSOC total scores. Analysis using Pearson product-moment correlation indicated that these two instruments demonstrated a moderate negative correlation (r = -.45, p = .004). The presence of covariance of this magnitude suggests that maternal perceived mood state is linked with parental sense of competence. While the direction of this relationship is suggested by the correlation, the relative influence of one factor over the other is not clear. It is, however, heartening to discover the presence of covariation between these measures, indicating they are measuring similar aspects of the same phenomenon or phenomena.

Findings reported by Affleck, Allen, McGrade, & McQueeny (1982) in a study of the relationship between maternal mood and reported caretaking difficulties offer insight to the question arising from the discovery of POMS and PSOC covariation. Afflect et. al. administered the POMS at an average of 11 weeks postpartum and then nine months later. They noted "considerable variation" in reported maternal mood at both data collection points. A relationship was also noted between early maternal mood disturbance and later perceived difficulty with infant caretaking.

Thomas and Barnard (1986) also used the POMS in a correlational study examining the relationship between

individual reports of mood and measures of family function. The POMS was strongly correlated with several measures of family function. In discussing their findings, the investigators hypothesized "a spiral in which a mother's positive affect allows her to interact responsively with her infant, an experience which reinforces both her positive affect and her positive perspection of her family" (p. 14). Perhaps this link between maternal affect and maternal role helps explain the correlation noted between the POMS and PSOC measures in the present study.

Conceptual Framework

One of the purposes of this study was to test the relative adequacy and strength of the conceptual model positing the potential effect of systematic nursing intervention, over time during the postpartum period, on maternal adaptive outcomes. In constructing the conceptual framework, the investigator explicated the similarities between the experience of postpartum motherhood and the experience of psychosocial transition. Did these findings support that assumption? Is it valid to consider the process of maternal adaptation as linked to coping in the interactional sense? The following discussion will consider these issues.

As noted earlier, the findings related to the POMS measure captured a wide variation in perceived maternal mood, perhaps indicative of individual and unique adjustment to the demands, threats and challenges inherent during the first eight weeks postpartum. Maternal qualitative

descriptions of their experiences also reflected responses consistent with the experience of psychosocial transitions, most notably, an altered assumptive world and a sense that prior learning did not apply to the current behavioral requirement of the environment. Finally, the narrative notes of the mothers themselves, commenting on the perceived benefit of the contact with the follow-up nurse suggest that access to educational and supportive professional intervention, over time, was congruent with their perceived needs. They valued what was offered and when it was withdrawn, they thought it had helped.

In an effort to assess the extent to which the experimental mothers reflected a common adaptive timeline over the course of the intervention, the narrative notes from the Postpartum Follow-Up Nursing Care Record were examined. Threads of a pattern emerged. At T1, the mothers reported their initial response to the demands of new parenthood. Statements exemplfying the impact of the postpartum reality were, "I can't bring myself to lay down...everything is so new to me...I wonder why he cries"; "Being a new mom sure takes a lot of getting used to"; "I haven't had any blues...I haven't had time...I put in some long hours".

By the third contact some mothers were reflecting an emerging sense of confidence in their ability to manage the demands of parenthood. Exemplar comments suggest a fragility or fine balance between confidence and chaos. For

example, in the words of the women, "Right now, I can tell what she wants when she cries"; "Last time I talked to you, the baby was driving us crazy...he's much more predictable now"; "I'm getting to know him better...he doesn't cry just to bug me...his cries are very different".

Both the intervention nurse and the experimental subjects noted less need for the weekly contact between 4-6 weeks. Only 2 of the experimental mothers were not willing to terminate contact at six weeks. These mothers requested and received an additional contact at eight weeks, after the mother had completed her instrument packet. Generally, by the fifth and sixth contact, the calls were shorter and the intensity of the mother's concerns and questions had diminished. Again, this is consistent with theoretical thinking related to psychosocial transitions. Perhaps by the fourth to sixth week, mothers had moved through the recoil phase and entered the accomodation phase posited by Silverman (1982). Perhaps they had developed new skills to handle the demands, threats and challenges encountered in their multiple roles. During the final contacts when termination of the follow-up was introduced, the mothers often spontaniously paused to review and acknowledge the trajectory of their adaptive journey, always commenting on how far they'd come, as one mother noted, "I'm over the hump now". A major limitation of this study, however, was in the absence of a measure of maternal coping and the resulting inability to link prerequisite coping with maternal adaptive outcomes, a major proposition of the conceptual model.

Conceptualizing maternal adaptation during the postpartum period as a process would appear to be, based on the contextual findings from this study, a valid perspective. Indeed, each mother traverses the common adaptive terrain on a highly individualized course and appears to emerge from the first eight weeks of the process with preliminary mastery of the tasks that consume much of the first year of parenthood. Findings from this study suggest, however, the presence of an extended period of maternal psychological disequilibrium, observable in wide within-group mood disturbance variation. Drawing conclusions regarding the impact of the experimental treatment, prior to the subjects reaching a period of relative psychological consolidation may be premature. Mercer (1986) found the fourth postpartum month to be an adaptive turning point for her large sample of postpartum women. It would be appropriate for future research to track the adaptive course of the postpartum subjects to such a turning point.

In conclusion, this study was not able to support the proposed effect of postpartum nursing treatment on maternal adaptation. None of the hypotheses were supported. With further refinement of the research design and with sufficient experimental power, further work must be undertaken before the relationships proposed by the conceptual model are flatly refuted.

Summary

This chapter has presented in detail the findings of

the study related to the sample, implementation of the independent variable and hypotheses. Discussion of the failure to obtain the hypothesized results has delineated limitations in the sample size and research methodology. The strength of the conceptual framework was examined with regard to its theoretical underpinnings and the relationship proposed between nursing treatment and maternal adaptation during the postpartum period.

CHAPTER 5

Additional Findings

Introduction

The first section of this chapter will examine additional factors that may have influenced maternal responses to the measures and present differences between the experimental and control groups. Clinical findings arising from sustained postpartum contact with a small sample of low-risk first-time mothers will be presented in the second section. This chapter will conclude with selected findings related to the conduct of a clinical nursing trial.

Factors Which May Have Influenced Maternal Responses to the Measures

Several factors were viewed as potentially intervening variables. Since it was impossible to exert precise control over these factors, they were identified and differences between the experimental and control groups were examined to determine the potential interaction between these variables and the measures of the dependent variable. Table 11 presents the results of chi square analysis of the distribution of scores and the differences between the experimental and contrast groups.

While withholding public health nursing services from the experimental mothers following hospital discharge had been considered initially, in practice, this was impossible. Findings reveal that approximately two-thirds of the sample, equally divided between the groups, received at least one

PHN home visit, with 11% of those receiving a second visit. There was no significant difference between the groups related to whether or not they received postpartum PHN contact. In addition, there was no significant difference between the groups with regard to the number of PHN contacts received. It is interesting to note that over one-third of the sample did not receive any PHN contact. Consideration of these findings suggests that exposure to PHN contact was probably not an influence on the responses of the subjects to the study measures.

Access to and utilization of help from extended families, an important source of social support, was assessed at eight weeks postpartum. An overwhelming majority of the subjects (92%) reported that they had received help from their family members during the time since hospital discharge. One-third of the sample received daily help during the first 1-3 weeks postpartum. Another third reported receiving help several times. Only 6% of the sample received help only once. There were no differences between the study groups with regard to access to or utilization of help from extended family respectively.

By the eighth postpartum week, 41% of the sample reported they had returned to work. No attempt was made to quantify and compare responses based on percent of full time work equivalency. A slight difference between the groups is apparent, with a greater number of experimental mothers returning to work. The difference between the groups

Table 11

Factors Which May Have Influenced Maternal Responses to Measures

Factor	Group Experimental n=19	Group Control n=20	Percent	Chi-Square	p
Received Postpartum PHN Home Visit					
Yes	13	12	66%		
No	5	8	34%	.20 (df=1)	.65
Number of PHN Home Visits Received During First Eight Weeks Postpartum					
No visits	5	8	34%		
1 visit	12	9	55%		
2 visits	1	3	11%	2.02 (df=2)	.36
Received Extended Family Help					
Yes	19	17	92%		
No	0	3	8%	1.34 (df=1)	.25
Frequency of Extended Family Help					
Daily x 1-3 wks.	5	7	36%		
Several times	6	6	36%		
Once	1	1	6%		
All the time	3	1	12%		
Weekly	2	1	9%	1.64 (df=4)	.80
Mother Returned to Work					
Yes	9	7	41%		
No	10	13	59%	1.97 (df=1)	.37
Postpartum Week of Response to Self-Report Measures					
6-7 Weeks Postpartum	3	6	23%		
8 Weeks Postpartum	15	9	62%		*
9-10 Weeks Postpartum	1	5	15%	5.14 (df=2)	.08

*p > .10

related to return to work was not significant. In the absence of significant difference between groups, it may be concluded that whether or not the mother had returned to work at the time of data collection did not systematically influence the differences between the study groups related to the measures of maternal mood disturbance and sense of competence as a parent.

Based on the theoretical assumption that threats to design validity due to subject maturation were a critical factor in the timing of data collection during a psychosocial transition, every effort was made to standardize the timing of maternal response to the dependent measures. Toward this end, the mothers were given specific instructions concerning the expected week of response and instructed to note their baby's birthday and the date of response on the first page of the instrument packet. The week of response was computed from these data.

Findings reveal that the timing of response ranged from 6 to 10 weeks with 62% of the sample responding during the eighth week. There is a noticeable difference between the groups, with 79% of the experimental subjects responding during the eighth week compared to 45% of their control counterparts. Chi square analysis revealed that this difference reaches statistical significance and may have influenced the distribution of the differences between the groups related to the measures of mood and perception. One explanation for the difference between groups related to this factor may have been the procedure followed by the

nurse during the last telephone contact with the experimental mothers. At that time, the nurse reviewed the data collection procedure and timeline. The contrast group did not have the benefit of this reinforcement.

In summary, several factors were monitored for their potential influence as variables intervening with the experimental treatment effects. Analysis of the differences between the study groups reveals that, with one exception, differences between the groups did not reach significance.

Clinical Findings

The narrative notes on the reverse side of the Postpartum Follow-up Nursing Care Record provided an opportunity for the nurse to record verbatum "quote notes" capturing the mothers' responses and experiences. In addition, clinical notes were made detailing nurse-initiated topics and clinical nursing problems requiring ongoing or complex nursing action (ie. consultation or referral).

Analysis of these working clinical notes reveals that 37% (n= 7) of the mothers presented morbidity which required supplemental nursing diagnosis and action. Four of these cases involved problems with infant feeding, including formula intolerance, excessive hydration with water, and adding cereal to formula. Two mothers presented problems related to unusually heavy lochia, with one mother referred immediately to the emergency room. The most intriguing and potentially serious case involved a mother complaining of a "bad toothache" which was causing blurred vision, unilateral

loss of facial muscle tone and slurred speech. After a lengthy discussion assisting the mother to consider other explanations for her symptoms and motivating her to seek medical evaluation, she was referred to the emergency room where a medical diagnosis of Bell's Palsy was confirmed.

The nursing diagnostic category "Actual Alteration in Parenting" (Carpenito, 1983) applied to 21% of the experimental mothers at a minimum of one time point over the course of the intervention contacts. One mother reported the inability to soothe the baby and propped the bottle, on occasion for feeding. Another mother commented, "I try to trick him with the pacifier when he's had enough to eat and wants more". This strategy was problematic because she was ignoring the infant's hunger cues and distress. For both these mothers, the nurse was able to mobilize that content of the protocol that would help the mother consider alternative explanations for the baby's behavior and caregiving actions that might ameliorate their mutual distress.

One mother interpreted the infant's drowsy sleep state as a purposeful game of "possum". In the process of putting the drowsy baby to bed, the baby would often become aroused to more alert state of consciousness. In interpreting this as a game to trick and frustrate the parent, an alteration in parenting due to knowledge deficit occurred. One of the most commmon topics of the intervention addressed infant states and state-related behaviors. When the nurse explained to this mother that all drowsy babies become more

alert if they are moved or stimulated in a certain way her frustration was markedly reduced.

In another case, a mother presented problems related to parent-infant attachment. Initial contacts with this woman revealed the impact of an unplanned pregnancy on an unmarried woman with a fragile relationship with the father of the baby. Leaving her family, she had moved across the country to establish a home with the father and found herself experiencing profound loneliness, dependency and isolation. While her caregiving sounded technically adequate, concern regarding her affect and the quality of maternal-infant interaction prompted active intervention. This mother responded well to intensive support on a weekly basis, followed through on exploring and mobilizing social supports and gave evidence to increased warmth in her interactions with the infant. At the termination of the intervention she was referred to community resources for additional supportive help.

Approximately 37% of the experimental mothers were referred by the nurse to a variety of health care and community resources. Referral to the physician, clinic or emergency room for medical evaluation were the most common. Referrals to community resources for family planning, public health nursing, social services, or special projects also characterized the referrals made in conjunction with the intervention treatment.

Four (21%) of the experimental group mothers

discontinued breast feeding following hospital discharge. Postpartum contacts following that decision often focused on establishing successful formula feeding.

One mother required intensive support as she confronted feelings of inadequacy sparked by parenting an infant displaying a particularly difficult cluster of temperamental characteristics. This infant was simply irritable, intense and difficult to console. As the mother worked through the first month of caregiving, she emerged with a fragile sense of confidence. Her commitment to and affection for the infant were evident.

In summary, the clinical findings emerging from the narrative case notes reveal a variety of nursing problems which would have likely received delayed treatment or gone undetected in the absence of nurse-initiated systematic postpartum follow-up. While it is difficult to quantify the cost and benefit of the intervention contact, surely providing continuity of care, information and support ameliorated some of the universal distress of the puerperium for the experimental subjects. These findings suggest that the diagnosis and treatment of human responses to actual or potential health problems during the fourth trimester is a rich area for nursing practice addressing diagnoses related to alterations in parenting, nutrition, knowledge and self-concept.

Findings Related to the Conduct of a Clinical Trial

While the literature contains multiple reports of client contact using the telephone, sustained contact over

time during a clinical trial was unique to this study. Several issues generic to telephone-based intervention arose over the course of the study which were particularly challenging.

Establishing Rapport

Establishing a rapport with each treatment subject, in the absence of person-to-person contact required skill on the part of the nurse and the mother. One strategy used in this study was central to the implementation of the protocol. Very simply, the nurse focused on the issues and concerns the mother brought to the call. Through active listening and pacing the call contingent upon the mother's cues, rapport building may have been accelerated. When the mother did not have specific questions or concerns, the nurse asked the mother an open-ended, general question related to the healing of her body or the baby's typical day and the conversation flowed from that point. In subsequent contacts, the nurse inquired about the status of a concern or issue from the previous call. These approaches to focusing on each mother's individual adaptive course appeared to convey a message of commitment and caring, building blocks in establishing therapeutic relationships. Beginning at the third contact, the nurse often initiated the topic of postpartum sexuality and the mothers appreared to tolerate discussion of this sensitive topic well.

Establishing and Sustaining Telephone Contact

Actually reaching the experimental subjects by

telephone was sometimes difficult. During the first week, the women were often resting and beyond the second week they were often out and about, visiting friends, relatives or shopping. When the mother was reached on the telephone, the nurse always verified that it was a convenient time to talk, and often the mothers responded that they were in the midst of a feeding or other caregiving task. As a result, multiple calls were often needed to assure contact and use of evening and weekend hours for calling was necessary. Persistence was a key factor in sustaining contact and this included calling alternative numbers the mother had provided. In the present study, once the nurse reached a mother and it was convenient to talk, the subjects were universally open, candid and verbal. A call was never refused or terminated abruptly. Several mothers made an effort to plan their day around the expected call and appeared to consider the nurse's call a priority. Clearly, establishing and maintaining weekly telephone contact was one of the challenges presented by this treatment design.

Retrospective Assessment

An intriguing finding was the observation that the mothers often reported intense issues and concerns in retrospect. Several mothers displayed this in comparing their present status to their experience of the recent past. For example, one mother during the fourth contact stated, "Last week I wanted to tear my hair out". Review of the narrative notes did not suggest the intensity she was now reporting. Perhaps these women were only able to

acknowledge the depth or intensity of their experience when they had moved sufficently through it to gain some perspective. The presence of this phenomenon sparked the realization that in some instances a full assessment of the status of the mother required access to her current status and perceived immediate past status. Since the majority of health care contacts with postpartum women are generally at one or two time points during the postpartum period, this observation suggests that these limited contacts may not permit an accurate or vivid assessment of her adaptive status. Evaluating the progress of a moving adaptive target, as postpartum women would appear to be, may require tracking the target at several time points. Theoretical and clinical models must account for the dynamic and accelerated movement characteristic of the adapting postpartum women.

Access to Consultation

Access to consultation was crucial for the nurse implementing the intervention. In several instances the mothers asked questions related to their physical status or breastfeeding that required access to expert advice. Consultation was sought from a perinatal clinical nurse specialist and a lactation consultant. Additional consultation was obtained from social services and community resources representatives. Questions or issues that required consultation were handled by referring the mother back to her primary health provider until the next contact when the intervention nurse and the mother shared the result

of their information gathering. If the question was not a high priority, the mother often simply waited to hear the nurse's response at the next intervention contact.

Setting Judgement Limits

Not all maternal questions and concerns could wait a week for disposition. Assessment and advice-giving using the telephone requires clinical perception and judgement. In the present study, it was the policy of the intervention nurse to err on the side of conservatism when assessing the relative severity of a symptom or complaint. If the mother presented the issue or symptom with concern, despite information and support suggesting the situation was probably not medically problematic, the nurse consistently encouraged the mother to contact her primary health provider. Concerns were never trivialized, minimized or disregarded. As a result, no morbidity resulted from "bad advice". Experimental subjects were provided anticipatory guidance and parameters for expected outcomes. Occurrences beyond those expected were cues to seek additional help.

Discontinuing Monitoring

During initial contacts, all topics on the intervention protocol were potential topics for monitoring. During subsequent contacts with the mother, as topics were monitored, it became apparent that it was no longer necessary to initiate discussion of a well-monitored topic that was not a significant issue to the mother. For example, most mothers did not introduce the topic of their physiological status beyond the fourth contact and it was

not appropriate for the nurse to initiate discussion of the status of her "breasts, bowels, bleeding, bladder and bottom". If the mother reported she felt "great", the nurse did not initiate further discussion of that topic.

Terminating Intervention Contact

Having shared the adaptive course during the first six weeks of the puerperium with the experimental mothers, terminating contact at the conclusion of the intervention required sensitive handling. In the present study, one strategy the nurse used was to introduce termination during the fifth contact. In planning the next call the nurse would simply note that that call would be the sixth contact and comment on how quickly the weeks had passed. As previously discussed, there was often a shift in the number and intensity of the issues and concerns the mothers brought to the calls during the last two contacts, and introducing closure was a natural evolution in the relationship. Several mothers, however, expressed a desire to receive continued calls for support, i.e., "It feels good to be able to talk to someone who knows and understands". In addition, several mothers indicated a desire to establish a social relationship with the nurse. These responses may reflect the special intimacy that may arise from repeated telephone contact and the quality of the supportive rapport established. Each case was handled with delicacy. Two mothers did receive an additional contact, following completion of their instrument packets.

Summary

This chapter has presented the findings and differences between the experimental and control groups related to factors that may have influenced maternal responses to the measures. Clinical findings arising from contact with the treatment mothers, over time, were discussed. Findings from the present study with generic implications for the conduct of a telephone-based clinical intervention were explored and discussed.

CHAPTER 6

Implications

In the preceding chapters, the study methods and findings have been presented and discussed. This chapter will describe the study's contribution to nursing science, implications for clinical nursing practice, limitations of this study, and implications for further research.

Contributions to Nursing Science

In 1980, the American Nurse's Association delineated research priorities for the 1980's as the basis for generating a scientific basis for nursing practice. The priorities were:

1. Promoting health, well-being, and competency for personal care among all age groups;

2. Preventing health problems throughout the life span that have the potential to reduce productivity and satisfaction;

3. Decreasing the negative impact of health problems on coping abilities, productivity, and life satisfaction of individuals and families;

4. Ensuring that the care needs of particularly vulnerable groups are met through appropriate strategies; and

5. Designing and developing health care systems that are cost effective in meeting the nursing needs of the population.

The contribution of this study to nursing science is based on its exemplification of these priorities. In recognizing and responding to a continuing societal need in a vulnerable population, this study proposed and tested an innovative nursing protocol using a cost effective delivery modality. Despite the inability of the study to demonstrate

significant differences between the experimental and control groups, knowledge for nursing care and the therapeutic process during the puerperium was extended.

The conceptual framework for this study and accompanying model, based on concepts of interactional stress and coping and psychosocial transitions, provided a new theoretical perspective for viewing maternal adaptation during the postpartum period and proposed the potential impact of nursing services on maternal adaptive outcomes. While this study did not support the hypothesized effect of nursing actions on maternal mood disturbance, sense of competence, knowledge of infant development and overall health, the findings revealed a strong and positive response of the subjects to the treatment without apparent ill effects.

In addition, this study presented findings related to the degree and variation in mood disturbance present in low-risk first-time mothers two months following birth. The presence of covariation between the mood disturbance and maternal sense of parental competency measures sparks speculation and further inquiry.

This study piloted an advanced research design for nursing clinical trials which benefited immensely from pioneering prior research and which holds promise as a prototype design for future comparative treatment research. This design clearly linked desired intervention behavioral outcomes with the content of the educational and supportive clinical treatment.

Contributions to Nursing Practice

The major contribution to nursing practice made by this study was the explication and testing of a telephone-based postpartum follow-up nursing care protocol for the low-risk primiparous woman. This study extended the boundaries of traditional maternity nursing practice to incorporate comprehensive monitoring, assessment, intervention and evaluation of maternal responses to actual or potential health problems during the puerperium. Strategies for establishing and sustaining telephone-based nurse-initiated contact with postpartum women were developed and analyzed.

Findings from the implementation of the independent variable in this study provided insight into the content and focus of postpartum nursing actions if contact with women is continued beyond the immediate postpartum period. Clinical findings revealed the potential for casefinding and referral in a population of new mothers who would have otherwise generally received minimal nursing service following hospital discharge.

This study demonstrated the potential application of telecommunications technology to serve populations who have the personal skills and hardware necessary to benefit from telephone-based delivery of nursing services. As a delivery modality, the telephone may provide an alternative to costly travel time for home visits and permit access to nursing service regardless of distance, weather, or other factors.

Analysis of the distribution of scores on the

standardized measures used in this study revealed a number of clinically relevant findings. If further research substantiates the correlation between maternal mood state and sense of competency as a parent noted in this study, selecting one of these variables as a nursing assessment focus may provide data for early intervention prior to the onset of significant health problems. In addition, this study suggests a continuing need for childbirth education and perinatal patient teaching to disseminate new knowledge related to infant responses, behavior and development so that new parents have sufficient cognitive information for interpreting their infant's cues and providing care that is technically adequate and growth fostering.

Finally, findings from this study revealed that women vary greatly in the course of their postpartum adaptation. Nursing practice must reflect a conceptual perspective which considers the unique characteristics of each woman and monitors her individual progress at several time points. Minimizing the impact of the first birth on the experiences of the first eight weeks postpartum raises practical and interpersonal barriers to diagnosing and treating the human responses that result from the extraordinary event of first time motherhood.

Limitations of This Study

The outcomes and findings from this study were limited due to many factors. The study was significantly compromised by the small sample which markedly reduced the

power of the experiment and the generalizability of the findings.

While the operationalization of the dependent variable was consistent with the conceptual framework and the focus of the treatment intervention, it did not fully reflect the scope of maternal adaptation required during the postpartum period. As a result, the findings were relevant but not comprehensive; they served as windows for viewing a partial picture of maternal postpartum adaptation.

The operationalization of the educational component of the independent variable, weekly nurse-initiated telephone contacts, was not optimally effective. The need to strengthen the telephone teaching methodology was clearly indicated by the study findings which measured maternal knowledge related to infant development.

The documentation of the implementation of the independent variable revealed several inadequacies. It would have been helpful to be able to differentiate between nurse-initiated and mother-initiated topics during each contact. The ability to distinguish between those topics the mother raised and those topics the nurse raised would have provided a more precise record of the intervention process. In addition, the nursing care record did not categorize identified nursing problems or nursing diagnoses. Reporting findings from the narrative nursing notes was imprecise and confounded the analysis of clinical findings. Finally, data collection regarding the cost of providing the telephone-based nursing service would have strengthened this

study and provided crucial information for program development. The presumption that telephone-based service is comparatively cost effective was not evaluated.

Implications For Further Research

This study substantially extended prior research in this area and the findings clearly indicated the need for continuing inquiry. As a pilot study for a large multi-site clinical trial, this study achieved its aims.

Further study is indicated to examine the nature and trajectory of maternal mood disturbance during the postpartum period. Knowledge of factors which contribute to mood disturbance, the sequelae, and the impact of mood disturbance on maternal and infant outcomes is needed.

Additional research is needed which measures postpartum maternal adaptation from multiple time points longitudinally. Frequent contact with postpartum subjects is necessary in order to tap the processes of women in adaptive motion. Research which measures maternal coping and the relationship of maternal coping to adaptive outcomes is strongly indicated. Finally, further study of the therapeutic process entailed in postpartum follow-up nursing care is necessary if nursing is to provide scientifically-based service to childbearing families during this unique period of the family life cycle. The effect of postpartum nursing therapy on maternal and child health outcomes must be demonstrated and measured in terms that will guide nursing practice and public policymaking.

Conclusion

This preliminary clinical test of telephone-based postpartum follow-up nursing care has taken the form of a randomized controlled trial (RCT). Low-risk primiparous postpartum women were randomly assigned to treatment and control groups prior to hospital discharge. Experimental mothers received nursing intervention in the form of six weekly nurse-initiated telephone contacts for educational and supportive follow-up. The treatment content was based on explicit objectives for maternal postpartum adaptation.

During the eighth postpartum week, all mothers completed a self-report questionnaire booklet. Study instruments tapped maternal and infant health status, maternal developmental expectations, maternal profile of mood states and maternal sense of competency as a parent. In addition, mothers reported their predominate concerns and particularly helpful resources.

While data analysis did not result in findings which supported the hypotheses, a number of the findings were indicative of potential effects and empirical relationships meriting further investigation. The experimental treatment was well received by the subjects and additional findings suggest that the telephone contacts were perceived as a source of help and support valued by the mothers.

The fourth trimester of the childbearing year has been neglected in the American system of health care delivery. Despite decades of interdisciplinary research documenting the profound and continuing need of postpartum women and

their families for systematic educational and supportive services, these services have not been institutionalized for low-risk populations. The current practice of discharging low risk mothers and their infants from the hospital 24-48 hours postpartum raises new questions about the validity of a contemporary system of health care which focuses on reducing perinatal morbidity and mortality but fails to recognize the processes of adaptation that may ultimately determine maternal and child health outcomes following birth.

In this era of exploding health care costs, telephone-based nursing service has the potential to offer a cost effective alternative to traditional services and to foster optimal health and development. This study was one of several research steps advancing knowledge generation toward meeting a continuing societal need and professional imperative.

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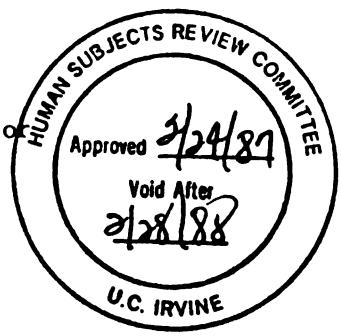
Appendix A

CONSENT TO ACT AS A HUMAN RESEARCH SUBJECT

POSTPARTUM FOLLOW-UP NURSING CARE PROJECT



Nancy E. Donaldson R.N., C., MSN, Investigator
D.N.Sc. Candidate, School of Nursing,
University of California San Francisco
(714)642-1864

NAME_____

Purpose of the Study
Ms. Nancy Donaldson R.N. is comducting a study to compare mothers' responses to two nursing care plans for follow-up during the first six weeks following birth. This study may improve understanding of how nursing care during the postpartum period may help new mothers and their babies. Because I am a healthy mother, who has just given birth to a healthy newborn, I am being asked to participate in the study.

Procedures:
If I agree to be in this study, the following will occur:

1. I will complete a "Personal Information" questionnaire which asks general information about myself and my family. Completing the questionnaire will take me about 15 minutes.

2. Following completion of the questionnaire, I will learn which of the two plans for postpartum nursing care I will receive. I have an equal chance of receiving either of the following nursing care plans. The decision regarding the plan I receive will be based on chance, not on the preference of either the investigator or myself.

PLAN A: If I receive this nursing care plan, the postpartum follow-up nurse will call me once a week for six weeks on the telephone. When the nurse calls I will be able to talk about questions or concerns about myself, my baby or my family. The nurse's call will be in addition to the usual postpartum care my baby and I would normally receive from the doctor or clinic, with the exception that a referral for a home visit by a public health nurse will not be made at the time of my discharge from the hospital, as is usually done. If, at any time during the the first six weeks following birth, the nurse or I feel a home visit by a public health nurse would be helpful to me, a referral will be made. The time required for each telephone call will vary from 10-30 minutes, depending on my needs.

PLAN B: If I receive this nursing plan, I will receive the usual postpartum medical and nursing care available through my doctor or clinic.

3. The charts of my baby and myself will be reviewed by the investigator(s) for details of my medical history and hospitalization.

4. During the sixth week following the birth of my baby, not matter which nursing care plan I have received, I will be mailed a questionnaire booklet which will ask me questions about my reactions and experiences during the first eight weeks since the birth. These questionnaires will require about 30 minutes of my time and when I have completed them, I will return them in the postage paid envelope provided.

5. If I am assigned to receive telephone contact nursing care, each call from the nurse will take about 15 minutes of my time or about 1 1/2 hours over the six week study period.

RISKS:

There are some possible risks or discomforts from being in this study. If I receive the nursing plan that provides me with an opportunity to talk to the postpartum follow-up nurse about my questions and concerns, I may find this tiring and this might bring to the surface some things I might not care to talk about. I have the right not to answer any question asked by the nurse or contained in the questionnaire booklet and I may stop participating in the study at any time. In responding to the questionnaires I may disclose confidential information, however, in so far as possible, every effort will be made to protect my right to confidentiality as a result of my participation in this study.

BENEFITS:

Whether telephone contact postpartum follow-up nursing care will directly benefit me or my family is not known. The research conducted by Mrs. Donaldson may result in improved understanding of how nursing care during the postpartum period may help other mothers and their babies.

COSTS/REIMBURSEMENT:

There will be no costs resulting from participation in this study, regardless of the plan I receive. When I have completed and returned my booklet of questionnaires during the eighth postpartum week, I will be sent a gift of "baby wipes" in appreciation for my participation in this project.

ALTERNATIVES:
If I chose not to participate in this study, I will receive the usual postpartum medical and nursing care available through my doctor or clinic.

QUESTIONS:
I have talked with Nancy Donaldson R.N., M.S.N. or the Research Assistant, Marta Ehling R.N., M.S.N. , and my questions were answered. If I have other questions I may call Ms. Donaldson at 714-642-1864.

If I have any comments about participation in this study, I should first talk with the investigator. If for some reason I do not wish to do this, I may contact the Committee on Human Research, which is concerned with protection of volunteers in research projects. I may reach the committee office between 8 and 5, Monday to Friday at UCSF by calling 415-476-1814, or by writing : Committee of Human Research, LHTS, Suite 11, Box 0616, University of California, San Francisco, CA 94143. I may contact the committee office at UCI by calling 714-856-7114.

CONSENT:

I have been given a copy of this form, as we have discussed, and the Experimental Subject's Bill of Rights to keep.

PARTICIPATION IN RESEARCH IS VOLUNTARY. I have the right to decline to participate or to withdraw at any point in this study without jeopardy to my medical care. If I wish to participate, I should sign this form.

PART I OF II--SEE NEXT PAGE

Date _____ Subject's Signature _____

Investigator/Research Assistant Signature _____

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Appendix B

Subject Inclusion/Exclusion Criteria

Subject Inclusion Checklist

- o 18-35 years of age
- o Uncomplicated pregnancy
- o Speaks, reads and writes english
- o Term gestation, healthy, normal newborn
- o Mother lives with baby's father
- o First baby (para 0)
- o Has a telephone

Subject Exclusion Checklist

Maternal History

____01 Alcohol or drug addiction (more than 2 drinks/day; regular use of chemical substance not related to current medical therapy)

____02 Significant psychiatric problem--history or current requiring treatment

____03 Mental retardation of mother--unable to complete equivalent of 10th grade education; unable to read and comprehend daily newspaper

____04 Onset of labor prior to 36 weeks

____05 Multiple gestation in the current pregnancy

____06 Maternal medical history of any one of the following: diabetes, cardiac disease, renal disease, collagen disease, malnourishment (prepregnant wt. <100 or >200 lbs), hypertension

Intrapartum

____07 Prolonged premature rupture of the membranes--more than 24 hours

____08 Life threatening intrapartum complication: abruptio placenta, pre-clampsia, eclampsia, DIC

____09 General anesthesia at birth

Infant

____10 Infant small for gestational age; IGR

____11 Infant admitted to NICU for longer than 12 hours

____12 Major birth anomaly--based on mother's definition

____13 Infant presenting any of the following: RDS, apnea, seizures, infection, or any condition requiring medical treatment or hospitalization longer than 48 hours during the first month of life, following hospital discharge of mother

Appendix C

General Information Questionaire

1. Your name_____

2a. Address_____

_____
City Zip

2b. Please list two people who will know how to reach you if it is difficult to get in touch with you during the first 10 weeks following your hospital stay:

(1)Name_____

Address_____

Phone_____

(2)Name_____

Address_____

Phone_____

3. Your Telephone( )_____ ( )_____
Home Work

__ / __ 4. Your Age_____ Your Husband/Partner's Age_____

__ 5. Your Current Marital Status: (1) Single____ (2) Married____

(3) Separated____ (4) Divorced____ (5) Living together____

__ 6. Your Race/Ethnic Group: (1) White____ (2)Black____

(3) Japanese____ (4) Chinese____ (5) Filipino____

(6) Korean____ (7) Vietnamese (8) Hispanic____ (9) Other____

__ 7. How many years of schooling have you had?_____
State last grade/degree completed

_____ 8. Your occupation_____

_____ 9. Your Husband/Partner's Occupation_____

___ 10. Your Total Family Income per Year:

___Below $5,000 (1)	___$40,000 - 49,999 (6)
___$5,000 - 9,999 (2)	___$50,000 - 59,999 (7)
___$10,000 - 19,999 (3)	___$60,000 - 64,999 (8)
___$20,000 - 29,999 (4)	___$65,000 & Above (9)
___$30,000 - 39,999 (5)	

___ 11. Do you live: (1) With Husband/Partner____ (2) Alone____
(3) With Friends_____ (4) With Relatives_____
(5)Other_____ (please specify)

___ 12. How many months pregnant were you when you were first seen by the doctor, midwife or clinic? _____

___ 13. How much experience have you had caring for babies Before the birth of this baby?
(1) _____None (2) Very little____ (3) Moderate Amount____
(4) ____Large Amount

___ 14. Did you attend childbirth education classes before the baby's birth? _____Yes (1) _____No (2)

___ 15. What type of delivery did you have? ____Vaginal (1)
____Cesarean (2)

___ 16. From the time you first noticed regular contractions, how long was your labor? _____hours

___ 17. What is the sex of your baby? ____Boy (1) ____Girl(2)

___ 18. How much did your baby weigh at birth? _____Pounds _____Ounces

_____ 19. Who will be helping you at home during the first weeks following your hospital stay?_____

For the next few questions, please indicate the degree you feel the following statements are true or untrue.

	Almost Always True	Often True	Some-times True	Sel-dom True	Never True
20. I feel loved.	_____	_____	_____	_____	_____
21. I am satisfied with the number of close friends I have.	_____	_____	_____	_____	_____
22. I wish that there were more people around with whom I might share personal things.	_____	_____	_____	_____	_____
23. There are people who I can count on to help if I need them.	_____	_____	_____	_____	_____
24. My friends are helpful.	_____	_____	_____	_____	_____
25. I am satisfied with the help I get.	_____	_____	_____	_____	_____

Appendix D

Postpartum Follow-up Nursing Protocol Objectives

Nursing Protocol Objective #1: To enhance the mother's self-care knowledge and behaviors toward achieving postpartum physiological restoration.

To indicate accomplishment of this behavioral objective, the mother would during the course of six weekly telephone contacts:

Date Completed

____ o Describe expected postpartum restoration and alteration in ber breasts, uterus, vagina, perineum, bladder, and bowels

____ o Identify alterations in expected restorative processes which should be brought to the attention of the primary health care provider.

____ o Identify and perform self-care which will foster the healing, confort and restoration of her body during the first six weeks postpartum.

Nursing Protocol Objective #2: To promote the mother's ability to apply knowledge of basic infant needs, states and state related behaviors to growing confidence and competence in contingent caregiving.

To indicate accomplishment of this behavioral objective, the mother would during the course of six weekly telephone contacts:

____ o Cite the infant's feeding pattern during the previous 24 hour period noting the following: nature and frequency of feeding; pre- and post-feeding infant cues; relative ease or difficulty of feeding; signs of infant distress during feeding and appropriate caregiver responses; feeding technique and bubbling strategy; mutual positioning for optimal feeding comfort and social interaction.

____ o Compare the expected infant feeding behaviors to the perceived "average" newborn and identify alterations from normal which need to be reported to the primary health care provider.

____ o Describe the expected and actual nature and frequency of infant's elimination and implication to the caregiver.

____ o Describe the infant's pattern of sleeping and waking during the recent 24 hour period; expected range of variation in infant sleeping and waking during the first weeks of life; and implications for the caregiver seeking to facilitate infant waking or sleeping.

____ o Identify infant cues for engagement, disengagement and distress and implications for the caregiver.

____ o Describe basic caregiving pattern for infant skin care, cord care, bathing, genital hygiene, sensory stimulation and protection from injury.

____ o Discuss progressive observation of infant sensory capabilities and caregiver actions which foster cognitive, emotional and social growth and development during the first six weeks postpartum.

____ o Identify signs and symptoms of illness, appropriate caregiver actions to observe and report to primary health care provider.

____ o Confirm infant's growth in height and weight as noted during at least one WBC visit during the first six weeks postpartum.

Nursing Procotol Objective #3: To enhance the mother's ability to apply knowledge of appropriate expectations of infant growth to providing caregiving in an environment which fosters the infant's physical, emotional, social and cognitive growth.

To indicate accomplishment of this behavioral objective, the mother would during the course of six weekly telephone contacts:

____ o Describe realistic expected and actual infant developmental capabilities during the first six weeks of life.

____ o Relate initial exploration of ways to play with infant and report using appropriate toys.

____ o Appreciate opportunities for fostering development which occur in the course of caregiving and describe strategies to engage the infant in mutual interaction.

____ o Desribe characteristics of infant's temperament and growing confidence in reading infant cues, enjoying interaction and experiencing satisfaction in capacity of infant to mutually interact.

____ o Offer positive comments related to the infant's appearance, behavior or development.

Nursing Protocol Objective #4: To promote the mother's ability to apply knowledge of expected changes in personal and marital living triggered by taking on the parent role to the development of strategies to nurture individual autonomy and the spousal relationship.

To indicate accomplishment of this behavioral objective, the mother would during the course of six weekly telephone contacts:

____ o Identify events in daily living, since the birth of the baby, that are particularly demanding, challenging, or threatening.

____ o Identify responses and effects of responses to the demanding/challenging events that have been effective.

____ o Describe mutual supportive interaction with partner and collaborative caregiving.

____ o Mobilize and utilize a network of professional and non-professional social support to provide assistance in responding to the concerns, questions, physical needs, and challenges experienced during the first six weeks postpartum.

____ o Identify the impact of physiological restoration on handling the demands of the new parent role; strategies to mediate fatique.

____ o Discuss strategies for fostering intimacy with partner while adapting sexual expression to the requirments of phyical restoration and given the limits of time and energy during the first six weeks postpartum.

____ o Reports implementing a suggestion or trying an alternative suggested during a postpartum nursing follow-up telephone contact.

Appendix E

Telephone-Based Postpartum Follow-up Nursing Protocol

Nursing Assessment Content

Maternal report related to:

Breasts

soreness, tenderness, condition of nipples, self-exam findings;

Breast Feeding

let-down reflex, position and comfort of mother, position and comfort of infant, duration of feeding of each breast, manual expression of milk, breast shield, nipple and breast care regimen; engorgment;

Uterus

lochia, color, odor, amount; cramps or contractions

Vagina

discharge; discomfort

Perineum

episiotomy discomfort, appearance, response to self-care; status of musculature

Bladder

frequency, urgency, dysuria, incontinence, hematuria;

Bowels

frequency; constipation; hemorroids; discomfort; response to self-care

Cesarean

Status of incision; dressing, sutures, drainage, abdomen; discomfort; flatus;

Nursing Intervention Content

Breasts
Discuss anatomy, hygiene, signs of mastitis, manual expression, nipple care, positioning of self and infant during feedings. importance of basic four food groups tid and fluids for optimal restoration of entire body; maintain energy and nourish infant if breast feeding.

Uterus
Discuss expected descent of uterus into pelvic cavity during puerperium; expectations and perceptions regarding body appearance postpartum; nature of "after pains", occurrance of cramping during breast feeding; passage of blood clots, pelvic pain and fever as signs to report to primary health care provider; expected ovulation, menstruation and need for all mothers to use a method of contraception when intercourse resumed IF immediate conception is not desired; nature and procedure for recommended postpartum exercise regimen;

Vagina
Discuss evolution of lochia in color, amount; nature and duration of vaginal sexual rest; potential alteration in vaginal lubrication upon resumption of vaginal intercourse; potential loss of vaginal muscle tone and role, procedure and frequency of Kegal exercise;

Perineum
Discuss healing of perineum, signs of inflammation, self care to foster healing; recommended treatment (following physician prescription) for hygiene and comfort; positioning for comfort.

Bladder
Discuss postpartum diuresis; appropriate fluid intake; avoiding bladder distension; hygiene; signs and symptoms of UTI to report to primary health care provider.

Bowels
Discuss relationship of foods and fluids to establishing post-birth bowel function; assuring "opportunity"; recommended treatment (physician perscription) for constipation.

Cesarean
Discuss expected pattern of healing of incision, appropriate hygiene; signs and symptoms of alterations from expected course of healing to report to primary health care provider; gradual resumption of normal activities during the first six weeks postpartum in accordance with recommendations of primary health care provider.

Topic: Infant Caregiving

Nursing Assessment Content

Maternal report related to:

Infant Feeding

24-hour recall--feeding type and amount; frequency/interval; hunger cues; infant feeding behaviors--suck, swallow and coordination; Infant response to feeding--satiation cues, distress, degress of spit-up, post-feeding burping etc; mother's response to feeding--recognition of cues, comfort in position; maintaining infant's readiness to feed, ability to alleviate distress; feeding preparation and technique, handling bubbling; Expected feeding behaviors and comparison to actual behavior of this infant.

Elimination

Voiding--frequency, amount and color; Stool--quantity, frequency, consistency and color; Maternal response to elimination caregiving

Sleep/Wake Behaviors

Emerging pattern of sleeping and waking pattern; Congruence of infant's pattern to parent sleep/wake schedule; strategies to foster infant waking and sleeping;

Infant Interaction

Caregiver interpretation of infant cues for engagement and disengagement; contingency of caregiver response to infant cues; cues of distress; infant and caregiver comfort behaviors;

Basic Caregiving

Hygiene regimen; bath routine; cord care; genital care; diapering skin care; clothing and swaddling pattern; handling infant irritability during basic caregiving; opportunities and pattern of social interaction and sensory stimulation; awareness and precautions to protect infant from injury.

Health Maintenance

Plan for pediatric follow-up/well-baby care, immunizations; awareness of signs and symptoms of illness and resources for advice and observation vital signs to report to primary health care provider; knowledge of community emergency services and CPR;

Nursing Intervention Content

Infant Feeding

Discuss infant pre- and post-feeding cues; Frequency and duration of feedings; preparation and storage of formula/mothers milk; positioning; signs of illness--vomiting; reduction in intake;

Elimination

Expected frequency and consistency of voiding/stool; skin care with diapering; signs of illness--fewer or less that 6 wet diapers/day; significant changes in stools;

Sleep-Wake Behaviors

Regulation of sleep-wake states; facilitating sleep; facilitating wakefullness; facilitating infant adaptation to parents sleep-wake cycle; signs of illness--drowsy, inactive, unable to arouse or increased irritability;

Infant Interaction

Examples of contingent responding; potent negative cues; alleviation of infant distress; invitations to interaction;

Basic Caregiving

Fundamentals of infant care; contingent caregiving; safety in infant caregiving; signs of illness--temperature, respirations, color; symptoms of URI;

Health Maintenance

Intervals for well-baby care visits; resources for advice and assistance in parenting; immunizations; vehicular safety; resources for infant caregivers; CPR;

Topic: Foster Infant Development

Nursing Assessment Content

Maternal report related to:

Sensory Responsiveness

Response to animate and inanimate visual, tactile and auditory stimuli; entrainment; smile; irritability or rapid state changes;

Infant Interaction

Cues--engagement, disengagement; distress; clarity; responsiveness to caregiver; reciprocity; cuddliness; consolability; self-comforting; level of activity; predictability;

Infant Play

Opportunities, strategies, toys; infant and mother response; rotating infant environments; sensory stimulation;

Fostering Infant Development Intervention Content

Sensory Responsiveness

Infant response capabilities; eliciting infant responses; balancing stimulation with infant feedback; infant cues signaling "time out";

Infant Interaction

Factors suggesting infant's temperament style; modulating infant states; handling rapid state changes/difficult to console; facilitating eye contact; talking to babies; observing 24 hour patterns of sleep/wake/eating/interaction; cues to engagement/disengagement;

Infant Play

Play opportunities during caregiving; creating visually interesting environments; games babies play; examples of baby toys--minimal cost; toy safety; creating interesting play envrionments; play and developmental advance;

Knowledge of Infant Development

Sequence of infant development during the first six weeks; Encoruage mother to observe and note infant's visual, verbal, social and motor behaviors and infant's responses to mother's activities; explore mother's expectations regarding infant development;

Topic: Personal, Marital and Family Adaptation

Nursing Assessment Content

Maternal report related to:

Stressors

Perceived demands, challenges, threats, concerns;

Coping

Initial responses and perceived effectiveness in reducing the intensity of the demand, challenge or threat; mutuality and involvement of baby's father; coping history--predominant modes; effectiveness;

Resources

Formal and informal, professional and non-professional supports; mutuality with partner; perceived availability and effectiveness of resources; perceived family strengths; vulnerabilities;

Realistic Expectations

Knowledge of impact of physiologic restoration on postpartum adaptation--fatigue, emotional lability etc.; awareness of adaptation as a process, occuring over time; expectation regarding the mobilization and utilization of expanded supports; awareness that confidence and competence emerges, evolves and adapts to changing needs of infant; knowledge related to integration of personal growth, infant growth, family development;

Social Support

Nature and density of support system; satisfaction with availability and quality of support; knowledge of community resources and ability to access and utilize those resources appropriately; ability to accept assistance as needed and available; ability to expand social support, if needed.

Intervention

Clarification of stressors, demands, challenges, threats; review of problemsolving efforts and outcomes; exploration of alternative responses if available responses have not proven satisfactory; Review of appropriate expectations related to physical restoration, family adaptation during developmental transitions and infant behavior/development;

Anticipatory guidance--common adaptive dilemmas, universal postpartum adaptive themes; evolution of infant growth and behavior during first six weeks; evolution of maternal physical status during the first six weeks; family development;

Review social supports and available resources;

Explore strategies to mobilize supports and access resources;

Explore perceived losses of autonomy and strategies to sustain autonomy;

Review collaborative strategies between parents; negotiating division of labor; getting "down time"; clarification of roles; communication--open, honest, spontanious; expressions of caring and mutual support.

Appendix G

Definitions of Nursing Acts

Focus

1. Mother: the major caregiver for this infant.
2. Baby: this is used when specific action is for baby only.
3. Father: any male taking role of father consistently, with the action specifically for him only.
4. Aggregate: action focused on more than one person.

Type of Nursing Act

1. Monitoring: collecting information; keeping track of events; making diagnosis; formulating problems; identifying concerns; subsumed in information, support, therapy and planning.

2. Information: providing verbal, written, or behavioral guidance to client; role modeling, demonstration, discussion, showing; mass media (pamphlets, books).

3. Support: validating behaviors, reinforcing, praising, encouraging of ongoing behavior; listening; giving resources, supplies (diapers, etc.).

4. Therapy: providing methods for correcting an indentified problem, i.e., information, discussion, problem-solving.

5. Planning: a program of action to achieve goal; subject of recording must be planner, i.e., nurse gives information to client to plan.

Nurse's Supportive Acts

1. Self-disclosure: Provide input regading personal experiences; use of self as therapeutic entity.
2. Mutual sharing: Easy give and take generally on feeling level; dialogue; focus more on client.
3. Active listening: Responding to emotional message, reflection, clarification, restatement of ideas, etc.
4. Information exchange: Back and forth exchange of information re: infant, mother, family or problems (problem-solving); nurse or client initiation; client an active participant.
5. Sounding board: "Being there," taking in, listening, but not necessarily responding.
6. Validation: Praise, encouragement, positive reinforcement or feedback supports current activities.
7. Information giving: Anticipatory guidance, teaching, suggestions, advice, discussion, or instructions.

Appendix H

Definitons of Coded Topics From Nursing Care Record

Physiological Self-Care

01. Breasts: status and comfort of breasts and nipples.

02. Vagina: appropriate care and cleansing of vaginal area, including monitoring lochia, during the first six weeks postpartum.

03. Perineum: status and comfort of perineal area, including episiotomy,

04. Elimination: status of bowel and bladder functioning compared to "normal"; presence of edema or perspiration; gas.

05. Fundus/Abdomen: height of fundus and status of abdominal musculature; discomfort associated with uterine cramps, sore muscles.

06. Casarean incision: status of surgical incision and surrounding area. Alterations in healing and comfort.

07. Breast care: appropriate care and cleansing of the breasts and nipples with personal hygiene routine; special care prior to and following breast feeding.

08. Peri-care: appropriate care and cleansing of the perineum during the postpartum period, including care of episiotomy, use of topical treatments and sitz baths; positioning for comfort.

09. Physical hygiene: status and appropriate knowledge of overall personal care including showering for cleanliness, washing hands following elimination and before handling breasts.

10. Postpartum activity: status and appropriate knowledge of postpartum activity, includes balance of rest and physical activity; limited heavy physical work and stair climbing; abstinence from vaginal intercourse.

11. Postpartum exercises: knowledge of recommended exercises for postpartum women; modification of "regular" exercises to reflect unique postpartum requirements; sequence and repetitions for recommended exercises.

12. Fatigue/rest: status of fatigue and rest; use of strategies to decrease fatigue and increase rest.

13. Sexual relations: status of abstinence from vaginal intercourse during early postpartum period; strategies for alternative sexual expression; libido; status of resumption of vaginal intercourse; discomfort associated with sexual activity.

14. Family planning: history of and planned contraception usage when intercourse is resumed following the postpartum period of vaginal rest. Access to and use of resources to obtain selected family planning method.

15. Basic four food groups tid: status and knowledge related to daily nutrutional intake; balance of intake from basic four food groups; appetite and timing of meals; nutrition for lactation.

16. Fluid intake: status and knowledge of adequate daily fluid intake; strategies to assure adequate intake for lactating mother.

17. Prenatal vitamins/medications: intake of vitamins or other prescribed medications according to medical advice; knowledge of medication dosage, indications, signs of intolerance.

18. Postpartum check appointment: knowledge of and plan to contact health provider for follow-up appointment following the immediate postpartum period.

Infant Caregiving

19. Infant feeding frequency: status of infant feeding method, amount, frequency.

20. Infant feeding behaviors: infant signals of hunger and satiation; distress during feeding; preferred position; vigor; coordination of suck and swallow.

21. Mother's response to feeding: mother's reported confidence and competence related to feeding; mother's interpretation of infant cues and ultimate satiation following feeding.

22. Bath: mother's knowledge of and ability to give the baby's bath; safety during bathing; strategies for assuring hygienic cleansing.

23. Cord/circ care: mother's knowledge of and ability to provide appropriate umbilical stump cleansing and care; knowledge of and ability to provide appropriate circumcision care; signs of infection and other alterations in healing.

24. Diapering skin care: mother's knowledge of and ability to provide hygienic infant skin care associated with diapering; treating rashes of diaper area.

25. Clothing/swaddling: mother's knowledge of and ability to appropriately dress baby for warmth and comfort; use of wrapping for comfort.

26. Comforting: mother's knowledge of and ability to respond to infant distress and through caregiving, successfully assist infant to resolve distress.

27. Sleep/activity: status of infant's pattern of sleep and activity over a 24 hour period.

28. Infant cue clarity: extent to which infant cues (given through motor activity, crying and other behaviors) are readily interpreted by the mother; initial simplistic clarity evolves to growing complexity in cue range and interpretation.

29. Interaction during caregiving: quality of mother's reported or observed visual, verbal and tactile interaction with the infant during caregiving; contingent interaction; mother's pleasure in caregiving.

30. Pediatric check appointment: knowledge of and plan to contact pediatric health provider for follow-up appointment following the immediate postpartum period; plans to obtain well-child care; resources for obtaining sick-child care.

31. Safety: Caregiving/vehicular: awareness of safety hazards for newborn and caregiving which implements principles of accident prevention; use of appropriate infant motor vehicle seat.

32. Signs of illness: knowledge of and ability to observe and report alterations in infant status which are common signs of illness; how to take the baby's temperature.

33. CPR: access to or knowledge of infant cardiopulmonary resusitation procedure; where to obtain CPR training.

34. Father involvement: participation of the mother's partner in the care of the infant, maintenance of the home; psychological availability and physical assistance.

Infant Development

35. Infant states: knowledge of the six states of infant consciousness: deep sleep, active sleep, drowsy, quiet alert, active alert and crying; implications for caregiver.

36. Infant state related behaviors: knowledge of normal newborn behavioral responses based on Brazelton's Neonatal Behavioral Assessment Scale; implications for caregiver.

37. Engagement/disengagement cues: knowledge of infant signals inviting or terminating social interaction; implications for caregiver.

38. Reciprocity: knowledge of or evidence of "turn taking" in mother-infant interaction; caregiving or social interaction with the infant that reflects sensitivity to infant cues and mutual responsiveness.

39. Distress: knowledge of subtle and potent infant cues for discomfort; implications for caregiver.

40. Sensory capacities: knowledge of or observation of normal newborn multi sensory capabilities with emphasis on visual, auditory and tactile; implications for caregiver.

41. Sensory stimulation: mother's conscious provision of opportunities for infant to use sensory capabilities;

42. Infant play: knowledge of or observation of early games or sensory experiences which bring infants pleasure; appropriately initiating or responding to infant cues for periods of play when infant is in quiet alert state; provision of appropriate toys.

43. Infant toy safety: knowledge of appropriate toys for infants and awareness of principles of toy safety in selecting toys or screening toy gifts.

44. Temperament: innate cluster of behavioral characteristics which shape the way a child responds to the environment; fit between parental and infant temperament; range of easy to difficult generalized temperament; implications for caregiver.

45. Fostering growth in caregiving: parental caregiving which focuses on encouraging and nurturing infant's social and cognitive growth while meeting basic physical needs.

Postpartum Adaptation

46. Expectations: mother's anticipated experiences or desired/imagined future reality; comparison of lived reality to expectations.

47. Concerns: priority events or issues the mother experiences as particularly troublesome or anxiety-provoking.

48. Stressors/demands/threats: events within the mother's environment which are demanding, threatening or challenging, and which are not easily resolved using usual probelm-solving strategies/resources.

49. Problem-solving: the mother's cognitive and behavioral responses to environmental events which are perceived as demanding, threatening or challenging.

50. Personal development issues: matters related to the mother's personal development, education or work.

51. Spousal relationship issues: matters related to the adult dyadic relationship; communication, roles and intimacy.

52. Parent development issues: matters related to the parent role; role behaviors.

53. Family development issues: matters related to the structural and functional adaptation of the family in response to the birth of the first child.

54. Mood disturbance: mother's perceived alteration in her "usual" state of mind or disposition; intense feelings or emotion.

55. Self-esteem: mother's perceived sense of personal worth or ability.

56. Role-conflict: perceived contradictory or mutually exclusive role demands; negotiating career role with maternal role.

57. Stress reduction strategies: mother's customary self-care approaches to decreasing perceived stress; increasing sense of well-being and relaxation.

58. Use of supports: mother's mobilization of social supports and other community resources to assist in meeting the demands, threats or challenges of the postpartum period.

59. Exploring resources: mother's scanning of the environment for potential supportive resources; reviewing available and accessible resources.

60. Anticipatory guidance: providing realistic expectations for future events; initiating preparation for confronting challenges, demands and threats which may be normally expected in the near future.

61. Bibliotherapy: recommended reading to assist the mother in developing understanding, expectations or coping strategies for confronting the adaptive challenges of the fourth trimester.

Appendix I

Mother's Rating of General Health

Please respond to the following questions about your health by checking (X) the answer that most closely applies. Space has been provided for you to explain your answer as necessary.

1. Have you had any bothersome physical difficulties or illnesses since you left the hospital? (Such as: pain, bleeding, headaches, fevers, infections, colds, flu, etc.)

____No

____Yes. Please list and describe the illnesses that you have had:

_____

_____

_____

If yes, what kind of care did the most serious illness require?

___ a. required hospitalization---How many days?_____
___ b. required an emergency room visit
___ c. required a visit to the doctor at the medical office or clinic
___ d. did not require a doctor's care

2. Considering what you have just described, would you consider your overall general health to be:

_____Poor _____Fair _____Good _____Very Good

Please explain._____

_____

_____

Feelings Checklist

The next page in your questionnaire packet contains a list of words that describes feelings people have. Please read each one carefully. Then use your pen or pencil to fill in the circle of the answer to the right that best describes HOW YOU HAVE BEEN FEELING DURING THE PAST WEEK INCLUDING TODAY. Work rapidly. Your first response is best, there are no "wrong" answers.

Now turn to the next page to begin.

Mother's Rating of Infant Health

Please respond to the following questions about the health of your baby by checking (X) the answer that most closely applies. Space has been provided for you to explain your answer as necessary.

1. Has the baby been ill since the baby came home from the hospital with you?

____ No
____ Yes. Please list and describe the illnesses that the baby has had._____

_____

_____

If yes, what kind of care did the most serious illness require?

___ a. required hospitalization---How many days?_____
___ b. required an emergency room visit
___ c. required a visit to the doctor at the medical office or clinic
___ d. did not require a doctor's care

2. Has the baby had any accidents or injuries since you brought the baby home from the hospital?

____ No
____ Yes. If yes, please list and describe what happened._____

_____

_____

_____

3. Considering what you have just described, would you consider your baby's overall general health to be:

_____Poor _____Fair _____Good _____Very Good

Please explain._____

_____

_____

4. What is the baby's current weight?_____pounds, ounces

5. What is the baby's current length?_____inches

Appendix J

Being a Parent - Mother

Listed below are a number of statements. Please respond to each item, indicating your agreement or disagreement with each statement in the following manner:

If you STRONGLY AGREE.....circle the letters SA
If you AGREE.....circle the letter A
If you MILDLY AGREE.....circle the letters MA
If you MILDLY DISAGREE.....cicrle the letters MD
If you DISAGREE.....circle the letter D
If you STRONGLY DISAGREE.....circle the letters SD

1. The problems of taking care of a baby are easy to solve once you know how your actions affect your baby, an understanding I have acquired. SA A MA MD D SD

2. Most parents think as frequently as I do that something bad could happen to their children. SA A MA MD D SD

3. I go to bed the same way I wake up in the morning--feeling I have not accomplished a whole lot. SA A MA MD D SD

4. I do not know why it is, but sometimes when I'm supposed to be in control, I feel more like the one being manipulated. SA A MA MD D SD

5. My mother was better prepared to be a good mother than I am. SA A MA MD D SD

6. I would make a fine model for a new mother to follow in order to learn what she would need to know in order to be a good parent. SA A MA MD D SD

7. Being a parent is manageable, and any problems are easily solved. SA A MA MD D SD

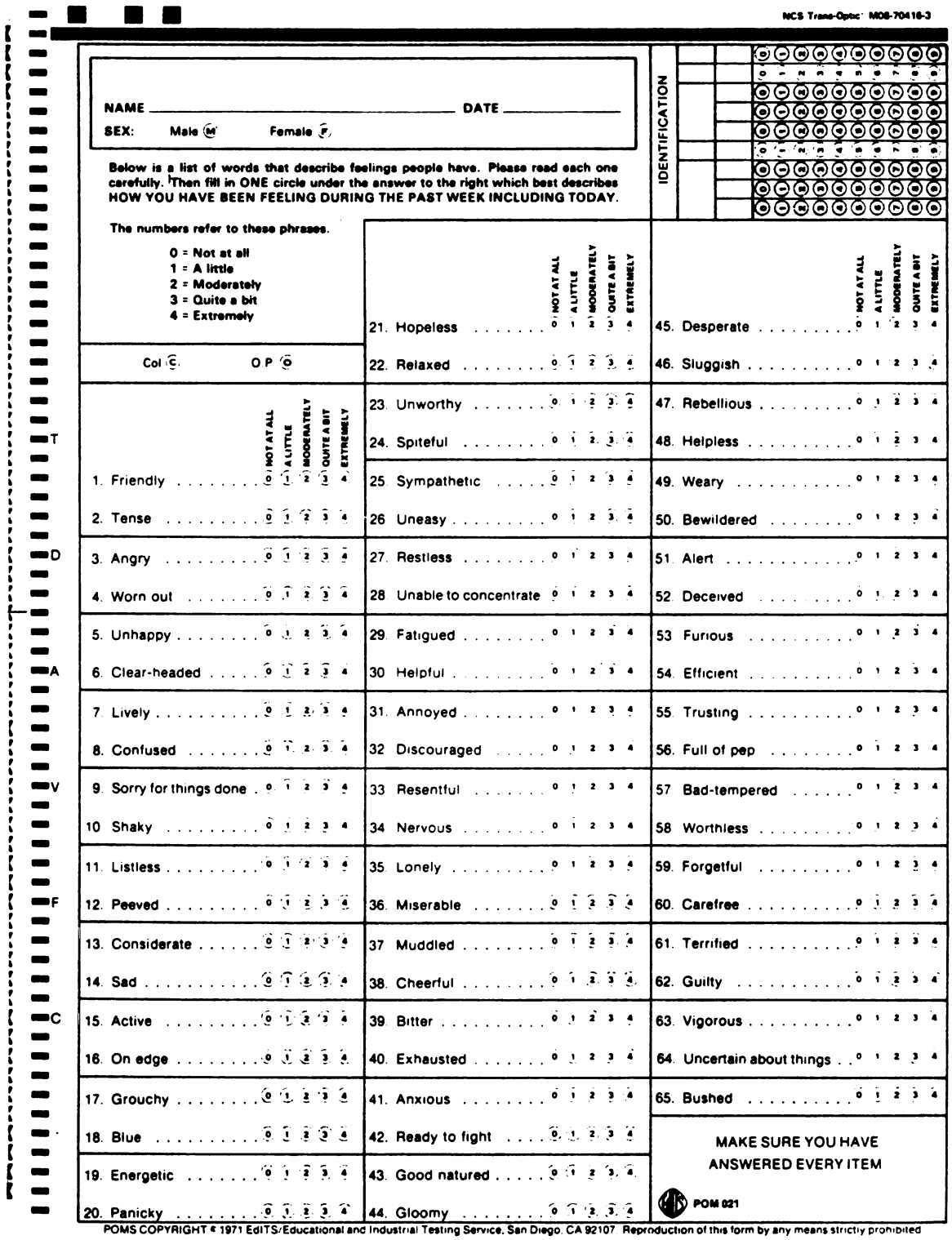
8. A difficult problem in being a parent is not knowing whether you're doing a good job or a bad one. SA A MA MD D SD

9. Sometimes I feel like I'm not getting anything done. SA A MA MD D SD

10. I meet my own personal expectations for expertise in caring for my baby. SA A MA MD D SD

Appendix K

Profile of Mood States



NCS Trans-Optic M08-70416-3

NAME _____ DATE _____

SEX: Male (M) Female (F)

IDENTIFICATION

Below is a list of words that describe feelings people have. Please read each one carefully. Then fill in ONE circle under the answer to the right which best describes HOW YOU HAVE BEEN FEELING DURING THE PAST WEEK INCLUDING TODAY.

The numbers refer to these phrases.

0 = Not at all
1 = A little
2 = Moderately
3 = Quite a bit
4 = Extremely

Col (C) O P (O)

	NOT AT ALL	A LITTLE	MODERATELY	QUITE A BIT	EXTREMELY
1. Friendly	0	1	2	3	4
2. Tense	0	1	2	3	4
3. Angry	0	1	2	3	4
4. Worn out	0	1	2	3	4
5. Unhappy	0	1	2	3	4
6. Clear-headed	0	1	2	3	4
7. Lively	0	1	2	3	4
8. Confused	0	1	2	3	4
9. Sorry for things done	0	1	2	3	4
10. Shaky	0	1	2	3	4
11. Listless	0	1	2	3	4
12. Peeved	0	1	2	3	4
13. Considerate	0	1	2	3	4
14. Sad	0	1	2	3	4
15. Active	0	1	2	3	4
16. On edge	0	1	2	3	4
17. Grouchy	0	1	2	3	4
18. Blue	0	1	2	3	4
19. Energetic	0	1	2	3	4
20. Panicky	0	1	2	3	4
21. Hopeless	0	1	2	3	4
22. Relaxed	0	1	2	3	4
23. Unworthy	0	1	2	3	4
24. Spiteful	0	1	2	3	4
25. Sympathetic	0	1	2	3	4
26. Uneasy	0	1	2	3	4
27. Restless	0	1	2	3	4
28. Unable to concentrate	0	1	2	3	4
29. Fatigued	0	1	2	3	4
30. Helpful	0	1	2	3	4
31. Annoyed	0	1	2	3	4
32. Discouraged	0	1	2	3	4
33. Resentful	0	1	2	3	4
34. Nervous	0	1	2	3	4
35. Lonely	0	1	2	3	4
36. Miserable	0	1	2	3	4
37. Muddled	0	1	2	3	4
38. Cheerful	0	1	2	3	4
39. Bitter	0	1	2	3	4
40. Exhausted	0	1	2	3	4
41. Anxious	0	1	2	3	4
42. Ready to fight	0	1	2	3	4
43. Good natured	0	1	2	3	4
44. Gloomy	0	1	2	3	4
45. Desperate	0	1	2	3	4
46. Sluggish	0	1	2	3	4
47. Rebellious	0	1	2	3	4
48. Helpless	0	1	2	3	4
49. Weary	0	1	2	3	4
50. Bewildered	0	1	2	3	4
51. Alert	0	1	2	3	4
52. Deceived	0	1	2	3	4
53. Furious	0	1	2	3	4
54. Efficient	0	1	2	3	4
55. Trusting	0	1	2	3	4
56. Full of pep	0	1	2	3	4
57. Bad-tempered	0	1	2	3	4
58. Worthless	0	1	2	3	4
59. Forgetful	0	1	2	3	4
60. Carefree	0	1	2	3	4
61. Terrified	0	1	2	3	4
62. Guilty	0	1	2	3	4
63. Vigorous	0	1	2	3	4
64. Uncertain about things	0	1	2	3	4
65. Bushed	0	1	2	3	4

MAKE SURE YOU HAVE ANSWERED EVERY ITEM

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Appendix L

Developmental Expectations

The following questions are about your baby and your expectations for the baby's development. State the expected age in weeks, months or years.

1. At about what age do you think a baby starts to be aware of his/her surroundings or knows what is going on around him/her?

_____Weeks _____Months _____Years

2. At about what age do you think it is important for a mother to start teaching her baby?

_____Weeks _____Months _____Years

3. At about what age do you think a baby is first able to see objects and people clearly?

_____Weeks _____Months _____Years

4. At about what age do you think a baby is first able to hear sounds and voices clearly?

_____Weeks _____Months _____Years

5. At about what age to you think talking to a baby is especially important?

_____Weeks _____Months _____Years

Appendix M

Mother's Narrative Questionnaire

Date of Baby's Birth_____ Today's Date_____

1. What has it been like for you since you brought the baby home from the hospital? (Please attach a blank sheet of paper if you need extra space to write your response)

2. How do you feel about being a mother?

3. How do your feelings about being a mother compare to how you expected to feel?

4. What would you say are your primary concerns at this time about anything?

5. What would you say are your husband's/partner's primary concerns at this time about anything?

6. Have you been visited by the public health nurse since the birth of your baby? _____ Yes _____ No

If yes, how many times has the public health nurse visited you? _____

7. Have you sought any help, assistance or information from outside resources since you brought the baby home from the hospital? ____Yes _____No

If yes, please respond to the following questions

a. What kind of help did you seek?

b. When did you seek help?

c. Where did you seek help?

d. Were you satisified with the help/assistance/information you received?

e. How did you find out about the source(s) of help/assistance/information you used?

8. Did you use the help/assistance/information of friends or family members since you brought the baby home from the hospital? ____Yes ____No

If yes, please respond to the following questions:

a. What kind of help, assistance, or information did you receive from friends or family?

b. How often did you use the help, assistance or information from friends or family?

c. Were you satisfied with the help, assistance or information your friends or familty provided?

9. Did you have needs for help, assistance or information, since you brought the baby home from the hospital, that were not met? ___Yes ____No

If yes, can you describe alittle about those needs and what kind of help, assistance or information you would have liked to receive?