

CCTV vs. CLASSES AS A TEACHING TOOL FOR POST-PARTUM MOTHERS

A COMPARISON OF THE EFFECTIVENESS OF
VIDEOTAPE (CLOSED CIRCUIT TELEVISION) VERSUS
LIVE GROUP INFANT CARE CLASSES, AS A
TEACHING TOOL FOR POST-PARTUM MOTHERS

By

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ABSTRACT

This study is designed to assess the effectiveness of closed-circuit television (CCTV) as a post-partum teaching tool using an interactive problem-solving approach, compared with conventional group classes, in fostering the acquisition of skills and knowledge around baby care. A second primary objective is to determine the level of satisfaction of respondents with both approaches to post-partum education. An extensive discussion of the theoretical basis for the proposal is presented, drawing upon and synthesising concepts from the literature of Sociology, Education and Health Sciences. The conceptual model (Sword 1990) represents a synthesis of Mezirow's (1978) theory of the transformation of meaning perspective with D'Zurilla's (1986) cognitive-appraisal approach to the acquisition of new knowledge. In addition, adult learning principles are applied to the selected teaching strategies to identify optimal conditions of learning (Zemke and Zemke 1988).

A two-group cohort design was used for randomisation, and the data collected was subjected to both quantitative and qualitative analysis. Two measures of learning were not

significantly different for the videotape and live class groups. Statistically significant differences were identified between the groups in the attitude measures of convenience and ease of understanding. There was also a measurable difference in levels of satisfaction with the different approaches used. However, the results of this study suggest that combining an interactive, problem-solving approach to post-partum education with CCTV, is no more effective than live group classes in achieving knowledge acquisition for new mothers. CCTV can be used to address the basic and repetitive aspects of patient education and it appears to be effective for short-term knowledge gain.

Several issues for further study are proposed in relation to the planning and implementation of alternative approaches to conventional post-partum teaching, as well as the design of future televised patient education programmes.

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TABLE OF CONTENTS

<u>CHAPTER 1: PRESENT STATE OF KNOWLEDGE</u>	1
Introduction	1
The Research Question	8
The Process of Developing the CCTV Menu	10
The Role of the Nurse Educator	12
<u>CHAPTER 2: LEARNING THEORY</u>	16
Theory in Relation to Practice	20
Theoretical Framework	23
<u>CHAPTER 3: USING CCTV AS A TEACHING AND LEARNING MEDIUM</u>	30
Literature Review	30
Framework for Evaluation of CCTV	38
<u>CHAPTER 4: METHODOLOGY</u>	42
Research Setting	42
Study Design and Procedures	46
<u>CHAPTER 5: RESULTS</u>	49
Quantitative Analysis of the Data	51
Qualitative Analysis of the Data	55
<u>CHAPTER 6: DISCUSSION</u>	61
Conclusions/Limitations	61
Implications for Future Research	65
Recommendations	68
<u>APPENDICES</u>	73
<u>BIBLIOGRAPHY</u>	95

LIST OF APPENDICES

A.	Sample Criteria	73
B.	Explanation of the Study Given to Prospective Subjects	74
C.	Subject Consent Form	75
D.	Demographic Data Collection Sheet	76
E.	Attitude Questionnaire	77
F.	Consent Questionnaire	78
G.	Guidelines for Bath Demonstration	79
H.	M.H.T.V. Obstetrics Patient Education Channel Guide	94

LIST OF TABLES

Table 1: Summary of studies of Patient Education using Video/Television	35
Table 2: Comparison of Demographic Characteristics	50
Table 3: Consent Quiz Scores	52
Table 4: Attitude Questionnaire Items	53
Table 5: Favourable Comments, CCTV and Live Class	57
Table 6: Unfavourable Comments, CCTV and Live Class	58
Table 7: Specific Knowledge Gained by Participants	59

LIST OF FIGURES

- | | | |
|----------|---|----|
| Figure 1 | Conceptual Model of Perspective Transformation and the Process of Adaptation in the Post-Partum Period. | 26 |
| Figure 2 | Conceptual Model of D'Zurilla's Problem Solving Intervention and Influence of Meaning Perspective. | 28 |

Chapter One

Present State of Knowledge

Introduction

Following the birth of a child, a woman must adapt to both physiological and psychological changes. The physical alterations of which there are many, occur fairly rapidly, and the majority of women cope with them with relative ease. The psychosocial changes, however, present a more complex challenge. Although the post-partum period has been formally defined as the first six weeks after childbirth, this period is only the beginning of a prolonged life-style change. Adaptational tasks of the early post-partum period include establishing healthy mother-infant interactions, integrating the impact of a new baby into her continuing relationships with her partner and other family members, as well as the maintenance of a stable self-image. (Affonso, 1987).

Nurses are the health care providers who have perhaps the greatest influence in facilitating related adaptive behaviours. In most instances, there is significant contact between the nurse and the post-partum woman during her hospital stay. The nurse identifies knowledge gaps and areas of concern, then intervenes appropriately to promote learning, and subsequently, adaptation. Obstetric units

usually have pre-developed standardised post-partum education programmes which are implemented by nursing personnel, using didactic information-giving and reinforcement techniques. Typically, the material is task-oriented, focusing on physical care of the infant and self, with a secondary focus on the skills required for maternal role-attainment.

It is, however, important to recognise the post-partum woman as an adult learner, with the need to be actively involved in a learning process that specifically addresses her individual interests and requirements (Knowles, 1984). A more favourable climate for adaptation might be created by abandoning the didactic, prescriptive method of teaching in favour of a more interactive, problem-solving approach. This would allow a widening of focus to include a broad range of psychosocial challenges which face the new mother. Educational goals should not be simply to bring about a change in behaviour, but also "to identify, and to facilitate the transformation of, the meaning perspectives of learners" (Mezirow 1978: 107). Meaning perspectives are described as the cultural and psychological assumptions which influence the way one sees oneself and one's relationships (Mezirow, 1978). Problem-solving interventions should therefore be concentrated on those which effectively change the way the woman conceptualises her values and beliefs about herself and her new role as mother. If the learning that results from this method of post-partum education is meaningful, behavioural change should result from a heightened sense of autonomy.

The teaching function expected of nurses

It would be appropriate at this juncture to consider the expectations of the nurse as teacher. These are threefold, embodying National Policy Guidelines, the requirements of both the nurses' licensing body and profession, as well as those of all Accredited Health Care facilities (Jenny, 1990).

Health-related activities are at least partly influenced by the national government's stated priorities for resource support, policy development and implementation. In 1986, a milestone in Canadian health policy was achieved with the publication entitled "Achieving Health for All" (Epp, 1986). It recognised major health challenges not yet adequately addressed by (then) current policies and practices. It proposed a Health Promotion framework which highlighted the mechanisms of Self Care, Mutual Aid and Health Environments (Epp, 1986). In decentralising the responsibility for individual health and highlighting the role of the community in achieving health-related changes, this policy statement endorsed the vital role of health teaching, patient education and client counseling in the achievement of health for all.

The Canadian Hospitals Association has undertaken various initiatives designed to define elements that would help Canadian hospitals plan, develop and successfully implement health promotion programmes. In 1987, it published a discussion paper which summarised the viewpoints of in- and out-patients, and hospital and community employers as they defined health promotion as it pertained to hospitals. Of the 1166 institutions, with a 68% response rate, 74%

felt hospitals had a role to play in health promotion. This supports the view that there is a shift in the health care industry's traditional orientation from curing to prevention of disease and promotion of health. Jenny (1990) points out the considerable implications of this paradigm shift for current practice, since it aims beyond the goals of treatment compliance and checklists of do's and don'ts for patients. She suggests that by extending the boundaries of patient education to encompass health education relevant to individuals and their particular health status, nurses will have an increased opportunity to positively affect individuals' long-term well being through the promotion of "wellness".

Nurses comprise 70% of the health care team and have traditionally been responsible for the bulk of patient education. This is borne out in their professional standards of care (which identify acceptable levels of care which the public has a right to receive).

The College of Nurses of Ontario (C.O.N.), the Provincial licencing body, includes the function of teaching as an expectation for nurses. The College has as its mandate the protection of the public through the establishment and maintenance of standards of nursing practice. These are based on certain beliefs about nursing. Of particular relevance to this discussion are those on which the Registered Nurses' Association of Ontario (RNAO), the professional organisation, bases its own position statement, namely:

1. "Nursing is a preventative, educational, restorative and supportive health-related service provided in a caring manner, for the purpose of enhancing a person's quality of life....Nursing recognises that...people have the right and capacity to make decisions...Each person is responsible for his or her health." (C.O.N. 1990: 8,9).
2. These beliefs are then incorporated into several of the standards emphasising the C.O.N. commitment to the teaching component of nursing practice. Moreover, in the specific breakdown of these standards into required skills, Standard 5 (dealing with implementation) requires the Registered Nurse (R.N.) to:
 - "....promote independence by
 - 6.1 using teaching/learning and reinforcement techniques
 - 6.2 teaching self-care
 - 6.4 assisting the client to gain access to resources necessary for ongoing care
 - 6.5 using motivation and contract techniques
 - 6.6 teaching decision-making skills." (ibid. pg. 35).Likewise, Standard 5 incorporates the promotion of a positive self-concept and effective coping by ...
 - "12.7 respecting individual values and beliefs
 - 12.9 supporting cultural identity
 - 12.10 assisting the client to clarify values, attitudes and beliefs." (ibid pg. 39).

The Registered Nurses' Association of Ontario in its descriptive definition of the profession also includes the teaching function of nurses as an expectation: "nursing activities are directed towards the preventative, educative, restorative and supportive service which assists individuals, families, and groups in the promotion and maintenance of health" (RNAO, 1988). To accomplish this goal, a four-part methodology known as nursing process is used. The four phases are assessment (data collection), planning (deciding on outcomes), implementation (purposeful action) and finally evaluation.

"The conscious and systematic use of this nursing process facilitates the professional nurse's performance as an independent decision-maker, accountable for his/her nursing practice". (RNAO, 1977).

There is general agreement in the literature explicating nursing practice that patient teaching is a component of this process, usually included in the implementation phase, i.e., once a plan of care has been devised, teaching is one nursing activity frequently used to implement it. The aim of this teaching is usually to maintain or promote a health state. Patient participation is vital to the success of this venture, focusing as it does on behavioural change.

Another significant source of teaching expectations are the requirements of the individual hospital organisations. Each Nursing Department has its own standards of practice, heavily influenced by those set by the Ministry, the C.O.N., and the RNAO. However, there is another, possibly more powerful factor influencing the organisation as a whole, and that is the desire for accreditation.

The Canadian Council for Hospital Accreditation (C.C.H.A.) introduced a four-tier award structure for health care facilities in the Fall of 1991. The award levels are designed to recognise the level of compliance achieved by health care facilities, with standards set by the Council. Particular emphasis is given to those areas which the Council considers to be essential to patient care and safety and to the overall operation of the facility.

The goal of accreditation is "to promote and encourage by voluntary means the optimal quality of health care in all its aspects by the achievement of accreditation standards in all hospitals and related health care organisations and agencies in the health field of Canada" (C.C.H.A. 1993: 18). Dr. Arnold Swanson, one of the early proponents of the Canadian accreditation programme, put forward the following rationale:

- accreditation assures the community of a high standard of health care
- accreditation attracts financial support to the institution
- accreditation assists in the recruitment and retention of highly-qualified staff
- accreditation is required in institutions providing for the education of health professionals.

(Drummond, Stoddard & Torrance, 1989)

Given the significance of accreditation to the institution as a whole, one can see why the accreditation guidelines so strongly influence the provision of nursing services. Standard Area for patient care number 8, (Obstetrical services) requires that

8. "there are appropriate activities and current materials to support patient and family education." (C.C.H.A. 1993: 20)

This standard is interpreted as follows:

- 8.1 "There is evidence of involvement of the appropriate disciplines in patient/family education
- 8.2 Patient and family education includes health promotion and illness prevention information
- 8.3 Education activities and materials reflect current scientific research..." (C.C.H.A. 1993: 21).

Given these requirements there is an obvious emphasis on effective patient teaching; nurses, as part of a multidisciplinary team, have a clear mandate to take on the function of providing this education to the families under their care.

The Research Question

The choice of appropriate teaching methods and media for the hospitalised, postpartum woman must take into account both patient and nursing needs. Patient readiness to learn must be considered, and the teaching methods and media selected must be capable of attracting and holding the patient's attention. From the nurses' perspective, their ability to provide appropriate patient education is constrained by staffing ratios and by expectations of tasks to be completed during a particular shift. Group classes or teaching media, such as closed circuit television (CCTV) or written materials may be useful in supplementing one-to-one instruction by a nurse. Cost and efficiency of teaching methods must also be considered, as cutbacks to hospital budgets increase pressures to improve nursing productivity.

Many hospitals have installed CCTV systems to help provide cost-effective patient education. Videotapes on a variety of issues related to postpartum or infant care are available in several languages, for an outlay of \$100-\$400. If a nurse's time to prepare for and present a group class is costed at \$25./hr, a \$400 videotape will pay for itself in just 16 showings! Budgetary constraints and changing patterns of service delivery had led The Mississauga Hospital to mount a review of postpartum education at that facility. In the Fall of 1992, the hospital entered into an agreement with Granada Television, to pilot test a selection of videotapes dealing with various aspects of postpartum education. It was agreed that at the end of one year of operation, a study would be undertaken to evaluate this method, vis-a-vis the prevailing method of group classes.

Study Objectives

The primary objectives of this study were:

- 1) To assess the effectiveness of CCTV as a post-partum teaching tool using an interactive problem-solving approach compared with conventional group classes in fostering the acquisition of skills and knowledge around baby care.
- 2) To assess the level of satisfaction with both approaches to post-partum education in a randomly selected group of respondents.

Operative terms are defined as follows:

CCTV is a system for transmitting video programmes from a central point to numerous receivers in different locations throughout the hospital.

Post-Partum Education incorporates the notions of interactive and problem-solving approaches to learning which facilitate identification and critical reassessment of assumptions influencing the woman's perspective.

Group Classes assumes a more didactic and programatic approach to education, in a classroom setting.

Psycho-social adaptation is defined as a sense of emotional well-being and satisfaction with role-fulfillment, interpersonal relationships and the acquisition of skills necessary for maintaining roles and relationships.

Multipara refers to a woman who has given birth to more than one child.

Primipara refers to a woman experiencing her first parturition.

The Process of Developing the CCTV Menu

A committee was formed to determine the elements to be included in the CCTV menu and the organisation of these elements. This committee consisted of three nurse managers, two nurse educators, a representative from the hospital's audio-visual department and a patient education consultant from Grenada Television. In essence, the committee consisted of many experts in the field of post-partum patient education. The author was a member and brought a unique perspective to the committee. As an experienced teacher of obstetrics in a community college, as well as a program manager, the author possesses a critical awareness of the patients' learning needs, as well as the strengths and weaknesses of the educational programmes

presently in place. Her presence in the group was also unique in that she wanted to be involved in both the content development, as well as its implementation and evaluation, a combination of roles strongly advocated by Stenhouse (1981).

A further source for determining content was a review of other area hospitals currently using CCTV for patient education. Granada Hospital Television services also provided the committee with a number of review articles to guide the selection of appropriate material. By utilizing these resources, a content proposal was developed that would hopefully adequately cover the educational needs of the patients. This was then subjected to "critical scrutiny" by physicians and other relevant personnel and the nurses working on the obstetrical post-partum ward. Recognising the staff nurses themselves as the "practise subject experts" is a concept strongly supported by Alspach (1988). Although they do not refer to the learner as an "expert", Taylor and Walford (1978) also advocate consulting the learner to determine their educational needs and/or interests. The staff nurses provided valuable opinions from their perspective, as to the basic content they felt essential to know upon discharge from the hospital for safe and effective care of the mother/infant dyad.

Having determined content and organisation, the committee's next task was to develop learning objectives for each module. Behavioural objectives were developed as a basis for determining learning effectiveness for the specific content in a given module where applicable. Terminal goals for the learner upon discharge were also stated. The intent of such goals was to identify the overall purpose

that the entire programme was intended to accomplish. The committee also established principles for the nurses, to guide the interactions between learners and teachers and among learners, which might result in greater attitudinal and behavioural change.

The Role of the Nurse Educator

Effective patient teaching has already been identified as part of the mandate of professional nursing practice. Charlotte Daniels (1985) in her dissertation about the personal philosophy of the nurse as teacher, described a basis and guide for the teaching function of nurses, revolving around certain beliefs about the learner, namely:

- that patients have a right to information relating to their health state
- that to some extent, all adults are capable of participating in the learning process
- that the nurse has a responsibility to meet the patient's identified learning needs.

The patient's right to know

There are several moral theories and principles that govern the activities of health care professionals. Nurses must justify their actions based on reflective thinking that demonstrates an understanding of the principle that underlies the "right to know". (Daniels, 1985).

The articulation of these moral premises presupposes a belief in the principle of autonomy. John Stuart Mill, in his essay "On Liberty", speaks of autonomy as "a form of personal liberty where the

individual determines his or her own course of action in accordance with the plan chosen by himself or herself." (1960: 15). Since this concept is advocated by our society, there exists a moral duty to treat our patients as autonomous persons with all the inherent entitlements. Foremost among these is the right of patients to be informed about their condition and treatments.

By the same token, patients equally have the right to decide how much or how little they wish to know. If one permits the patient to be an autonomous decision-maker, one must respect those decisions that result. There are patients who do not ask questions, who interact passively with health care personnel and do not appear interested in the information being offered to them (Daniels, 1985). It would be erroneous to assume that these patients do not want to know; it is simply one's impression that they do not. CCTV offers these patients the opportunity to selectively extract the information they want and to exercise their autonomy in that selection process.

The patient's ability to learn

If we as nurses believe that patients have a "right to know" about their disease and its treatment, however exercised, and that we have a responsibility to be involved in this "knowing", then nurses must believe that patients have an inherent capability of learning. This is critical to the determination to build in a teaching component to nursing practice -- a belief in the capability of the learner is the major impetus behind a teacher's search for those skills that promote learning (Daniels, 1985).

It might be helpful in this context to define "learning". It is commonly regarded as the change in behaviour that results from participating in an experience. Therefore, if learning occurs, the behaviour before the experience will be different from that which follows it. To simply define learning as a change in behaviour is not useful for nurses. A more comprehensive definition is offered by Brundage and MacKeracher (1980) which seeks to articulate the process underlying the change.

"Adult learning refers both to the process which individuals go through as they attempt to change or enrich their knowledge, values, skills or strategies, and to the resulting knowledge, values, skills, strategies and behaviours possessed by each individual." (Brundage and MacKeracher, 1980; in Daniels, 1985: 5).

Given then, that learning is both the process of change and the resultant changes, it seems logical to distinguish the motivation to learn from the ability to learn. Inherent in the belief that all patients can learn to varying degrees is the responsibility on the part of the instructor to make this learning happen. The realities of the work situation for nurses may cause disappointment and dissatisfaction if it appears that this fundamental belief about patients' ability to learn (and its associated implications) cannot be incorporated into their practice. Given a belief in the principle of autonomy, and that a patient can elect to refuse information, nurses cannot be responsible for ensuring that patients learn; however, it would be useful to determine what constitutes a realistic involvement in this process (Daniels, 1985). This study attempts to examine the

nurses' involvement in two dimensions: one as the facilitator of patient-centered learning and the other as the active communicator of knowledge directly to the patient/family.

Nursing involvement/responsibility

Given that the patient has the right and the ability to know about her condition and treatment, what are the nurses' obligations in this regard? There is no gold standard telling the nurse what to do in any given situation; rather, the interaction between patient and teacher is situation specific. However, there are certain governing principles which can be invoked.

Nurses have a moral responsibility to ensure the patient's right to know as outlined in the **Guidelines for Ethical Behaviour in Nursing**, issued by the **College of Nurses of Ontario, (1990)**. In addition, competent care, accountability, confidentiality and truthfulness are all discussed in this document. The nurse must be able to develop a well-reasoned logical framework within which to express his/her thoughts and concerns and he/she must learn something of political expedience when selecting a topic. Some situations are ripe for a one-on-one discussion, while others may require the involvement of other members of the therapeutic team. Most importantly, the nurse must develop skills as a listener. He/she must be able to facilitate discussion, and always be open to the patient's perspective of the situation. Lastly, he/she should be constantly evaluating the learning experience, in the light of new insights or perspectives offered (Daniels, 1985).

Chapter Two

Learning Theory

At this juncture, the claims that patients have the right and the ability to learn about their health status have been explored. Attention must now be focused on those learning theories which have been used to establish a teaching function as part of nursing practice.

The research on adult education indicates that using a single theory to develop strategies, methods, or procedures may be restrictive and in conflict with currently accepted adult teaching-learning principles. Some of these principles which apply to teaching strategies may be summarised from Zemke & Zemke(1988) as follows:

- Training must be received as early as possible following a life-change event, such as the birth of a child.
- New ideas should be integrated into what adults already know (this necessitates active learner participation).
- Fast-paced or complex learning tasks should be avoided (transition time is needed)
- Concepts should be presented one at a time
- It is helpful to summarize frequently
- Self-directed learning, with resources provided, is preferable
- Content with how-to instructions is preferred

- A variety of methods should be utilised to accommodate different learning styles.

There are many methods and tools developed to facilitate the kind of interaction that will assist a learner to achieve specific learning needs. However, given the goals of this particular project, the conditions of learning must be the primary focus of attention for the nurse, with clarification of concepts from the other areas where necessary.

Motivation

Motivation has already been identified as the prime variable that affects learning. Motivation can best be described as either the drive for the reduction of unmet needs as described by Maslow (1943), or the drive for positive growth. Therefore, theoretically, identifying the unmet needs of patients will identify the motivational forces from which they are operating. This can be very useful in helping the nurse plan her teaching interventions. When a mother is faced with the demands of a new infant and the need to develop new skills, this often creates a highly-dependent situation for her, and a subsequent loss of self-esteem. Patient teaching interventions focused on building confidence and thus self-esteem and worthiness will usually be most effective. Nurses must remember that the patient agrees to participate in a teaching session or educational programme for a reason, whether it be for deficit or growth needs. Her ongoing involvement and co-operation will be dependent on whether or not her needs are met (Daniels, 1985).

Daniels contrasts Maslow's needs reduction theory of motivation with B.F. Skinner's (1938) theory of behaviour determined by its consequences as the basis for much teaching/learning theory. Maslow (1943) describes a hierarchy of five levels of instigating drives and proposes that higher level needs cannot usually be met, unless the lower level needs are attained. Theoretically, identifying the unmet needs of the patient will identify the motivational forces which are driving behaviour. In contrast, Skinner postulates that a non-reflexive response is produced by an individual as the result of reinforcement (reward or punishment) after the response is first made. As summarised by Knowles (1984) behaviour, and in this case learning, will be motivated by positive consequences. This "reward theory" can be adapted to a teaching function at many levels. The patient will experience the intrinsic reward of mastery of an unfamiliar skill, reinforced by praise and encouragement from the nurse. At the same time, she will be rewarded by a positive interaction with her baby, resulting in an associated benefit of producing a desired behaviour in the infant. One can see the overlapping in these two motivational theories, and their application to future learning.

Participation

Nurses as teachers need to develop skills to assist patients to express their specific learning needs. The more closely nurses' teaching interventions fit the patient's needs, the more likely it is that the patient will learn. Tailoring this fit can only be achieved with learner participation. Adults approach a learning situation with certain expectations, with views on what they wish (or do not wish) to

learn. If the teaching is to be effective, it must help the learner meet her particular identified needs. Nurses must be skilled enough at their teaching function to allow flexibility both in the beginning of learning events and in the incorporation of previously unidentified learning objectives. Effective teaching should be able to make new links for the learner and help her to learn in an altered sequence. To be able to make these modifications, the nurse must be familiar enough with the subject matter to be comfortable with unplanned changes in the learning situation.

When discussing the issue of patient participation, one must always consider the issue of time. Simply put, people learn at different rates, and therefore, learning times must be adjusted for different patients. Thus this represents a condition of learning that is alterable or amenable to manipulation by the teacher. Bloch's (1971) theory of mastery learning "which links achievement to a necessary time to learn" (Daniels, 1985: 50) is appropriate to this concept. Aptitude is thus defined as the "amount of time required by the learner to attain mastery of a learning task." (ibid). Mastery learning also asserts that learning is a function of the quality of instruction - an obvious contention when comparing video instruction with personalised teaching. There is strong reliance on feedback strategies and active participation by the learner. It also emphasises the importance of self-concept and a positive attitude towards learning, in relation to achievement.

Past Experience

Strongly allied to the importance of self-confidence is the role of past experience in the learning process (Daniels, 1985). Because of this impact, she believes an assessment of the patient's learning background should precede any formal education programme. Included in this assessment should be the emotional component of previous learning. What factors produced anxiety or the feeling of threat? The importance of levels of achievement cannot be overlooked. The patient's attitude to new learning will be influenced by past successes or failures. How does the patient perceive she learned best in the past? Does she prefer reading material or audio-visual material? Is she more comfortable in a group, or in an individual learning environment? What time of day can she concentrate best, and for how long? What does she do when she does not understand something? What teaching behaviours did she find helpful? Further stress induced by the teacher would be counterproductive to learning (Daniels, 1985).

It might, therefore, be helpful to have a questionnaire assessment tool to precede the programmed learning offered via CCTV or group classes. This information would give the nurse an empathetic understanding of the significance of past learning experiences to her patient.

Theory in relation to practice - Teaching/learning methods.

Armed with an understanding of the adult learner and a working knowledge of basic educational theory, nurses have still to incorporate theory into action. How can they best translate knowledge

into practical learning experiences for the new mother?

The adult learner's readiness to learn is usually driven by a perceived need. In this case, the motivator is a life-change event. If there are no other life-change events, a change in role is a motivator for the new mother to engage in a learning program in order to cope with the transition and decrease the anxiety associated with the change in role (Zemke & Zemke 1988).

Some of the principles which apply to teaching strategies as summarised from Zemke & Zemke, (1988) are as follows:

- training must be reviewed as early as possible following a life-change event (such as the birth of a baby)
- new ideas should be integrated with what adults already know (means active learner participation)
- fast-paced, complex or highly unusual learning tasks should be rewarded (transition time is needed)
- one concept should be presented at a time
- self-directed learning with resources provided is preferred
- content with how-to instructions is preferred.

There are many methods and tools developed for use with groups such as lectures, discussions, and a variety of other learning activities. These are used largely because they are efficient and cost effective when dealing with a number of learners. They may not, however, facilitate an interaction that will assist a learner to achieve a specific individual learning need. A brief description of some of these methods may amplify the discussion of strategies.

The demonstration method can be used to illustrate a concept, the application of a concept, and/or psychomotor skills. Demonstration is a method appropriate for the attainment of the cognitive and psychomotor domain objectives. It is almost always used in conjunction with a short oral presentation and with experimental methods such as role playing (Knowles, 1984). This method is historically used in many institutions to achieve the objectives of post-partum teaching programmes. In order to reach these objectives, an oral presentation is made and the equipment used, for example in a baby bath, is demonstrated. The mother then participates in a simulated baby bath to demonstrate integration of the knowledge gained, its application to the situation, and the psychomotor skills involved. This is considered a safe approach for teaching the technique and repeat demonstrations can be used until the mother has mastered the psychomotor skills.

Modularised instruction, another teaching strategy, incorporates the use of audio-visual materials and is particularly useful where the learner has had previous experience or exposure to the topic and/or skill. It lends itself to a more individualised goal attainment. The learner can choose to pursue the topic of interest and can work at her own pace and in whatever order is deemed desirable (Cranton, 1989). The learner can select any program in any order and spend as much time as is needed learning a single topic.

Discussion, along with modularised instruction, is considered particularly useful in this learner-oriented method. Key questions can be planned in advance by the nurse/teacher. Discussion provides

the new mother with opportunity to explore feelings, views and opinions. If the learner lacks background information, a discussion can be augmented by printed handouts of relevant material (Megenity and Megenity, 1982).

Accepting the new mother as both a self-actualised adult and learner with specific learning needs, impacts on the role of the nurse as teacher. He/she should view him/herself not as the ultimate expert, but rather as a facilitator, one whose role is to assist the new mother in meeting her own learning needs. The emphasis is thus on the self-activity of the learner, rather than the skills and knowledge level of the nurse.

Theoretical Framework

Sword (1990) in her treatise on in-home versus in-hospital post-partum education proposed a juxtaposition of the theories of Mezirow and D'Zurilla which is singularly appropriate to the phenomenon under investigation in this study. In the discussion which follows, the author has attempted to utilise the same theoretical pairing, but in a different context of post-partum education.

Mezirow (1978) proposed a theory of adult learning which describes the transformation of personal perspectives as the most significant learning domain. The basic tenet of this theory is the notion of "meaning perspective" which he describes as "the structure of cultural assumptions within which new experience is assimilated to, and is transformed by, ones' past experience" (Mezirow, 1978: 101). These perspectives often operate at the subconscious level and influence the way one feels, interprets, understands and acts on a

given situation. Certain challenges or life crises create dilemmas which cannot be solved by past experience and initiate a learning process. Perspective transformation occurs when the need to disregard old perceptions is recognised and the meaning perspective is changed (or transformed) to a new one which allows a more discriminating integration of the experience (Sword, 1990). Old criteria for valuing or taking action are discarded in favour of newer, reformulated values, resulting in a change in behaviour (Mezirow, 1978; 1981).

He describes learning about meaning perspectives as a developmental process -- one progresses through adulthood along a maturity gradient that involves successive transformations. These occur by taking on the perspectives of others who are more critically aware of the assumptions which govern our psychological experience. The responsibility of the nurse/educator therefore is to bring present perspectives to the consciousness of the learner and present an alternate perspective that will resolve the dilemma. An understanding of the differences and consequences of each perspective will lead to increasing self-determination for the learner. The decision to act (or not) is crucial to personal development and places the locus of control with the learner (Sword, 1990). The educational goal of changing one's frame of reference to achieve a personal transformation is thus achieved (Mezirow, 1978). Furthermore, because a meaning perspective has an affective dimension (Mezirow, 1981), the individual may need guidance in dealing with conflicting emotions and unresolved conflicts (Sword, 1990). For example, the woman may not subscribe to the more traditional role delineations in baby care but continue to

experience feelings of guilt at asking her husband to assume some of the "female responsibilities" for childcare, such as bathing the baby. With regard to the educator's role, this guidance will sometimes consist simply of providing support and reinforcement for a change already in progress.

"....within a new meaning perspective, people will still require educational assistance in acquiring the skills and knowledge they come to see as relevant."

(Mezirow, 1978: 107).

Mezirow's theory of adult learning provides a conceptual framework for both the planning and implementation of an educational programme for post-partum women. The birth of a child necessitates many psychosocial adaptations and may precipitate a crisis (or loss of equilibrium) that cannot be resolved by invoking old meaning perspectives. Acquiring new information, adding to one's competence or improving problem-solving skills are ineffective solutions without adjusting one's frame of reference. Expectations of self, arising from internalised psycho-cultural assumptions regarding one's role, can distort the way one defines the problem and cause increased anxiety. By changing the context (of her self-expectations) the woman can redefine the problem and effective coping strategies can be initiated. Figure 1 illustrates this process of perspective transformation and its potential for producing more adaptive outcomes.

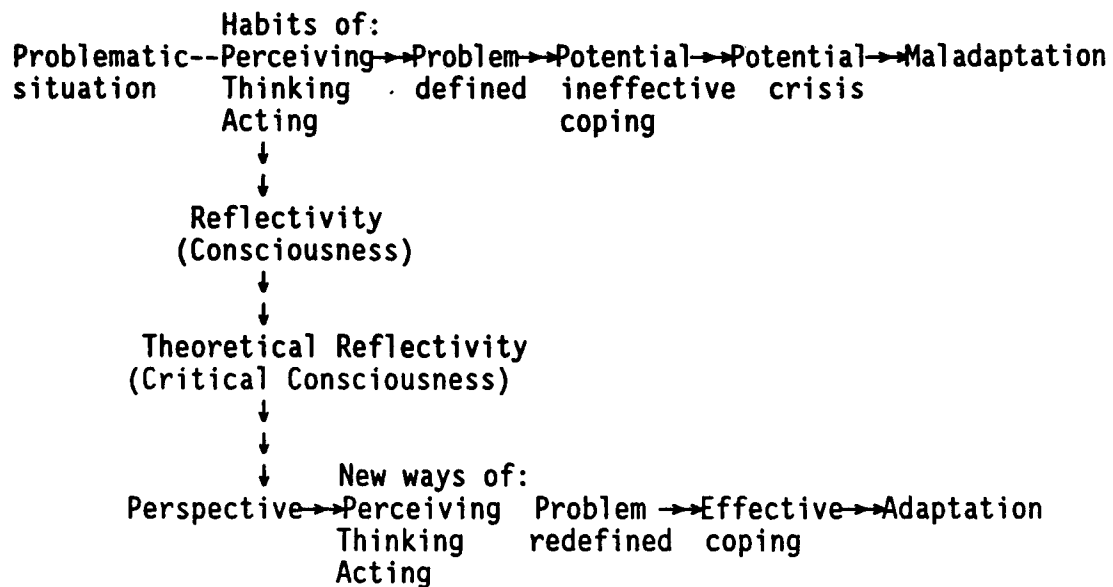
Figure 1

Figure 1. Conceptual Model of Perspective Transformation and the Process of Adaptation in the Postpartum Period (Sword, 1990).

Problem-Solving Interventions

D'Zurilla's intervention is an active, coping process which addresses cognitive, affective and behavioural components. As a measure designed to control both self and the environment, it integrates well with Mezirow's theory of adult learning. Although environmental factors such as task completion and individual coping skills are key variables, it is the woman's cognitive appraisal of the situation (and of her own coping resources) that are most important in determining outcomes (D'Zurilla, 1986; Mezirow, 1981). Cognitive appraisal occurs within the context of what Mezirow has described as a meaning perspective.

A structured problem-solving intervention is described by D'Zurilla (1986), whereby an individual or group is taught the skills necessary to make a successful adjustment to a problematic situation. In this way, social functioning is enhanced. A problem is defined as:

"a life situation that demands a response for effective functioning, but for which no effective response is immediately apparent or available to the individual or group confronted with the situation" (D'Zurilla and Goldfried, 1971: 112).

In a later work, D'Zurilla (1986) adapted a more transactional perspective of a stressor to include environmental variables and personal variables, both of which interact with and influence each other (Sword, 1990).

Situational support is also important, and individuals have better and more adaptive outcomes if they receive social support when it is needed. Although this usually is available through established relationships, a nurse educator can offer both informational and emotional support to facilitate coping (Sword, 1990). This promotion of psycho-social adaptation is especially relevant in the post-partum period. Because it is not unusual for the woman to experience difficulties in coping with perceived environmental demands as well as personal goals related to her new role, it is appropriate to focus on cognitive reprocessing. The factors most relevant to adaptive outcomes and the significance of the woman's meaning perspective in relation to D'Zurilla's intervention (as synthesised by Sword, 1990), are illustrated in Figure 2.

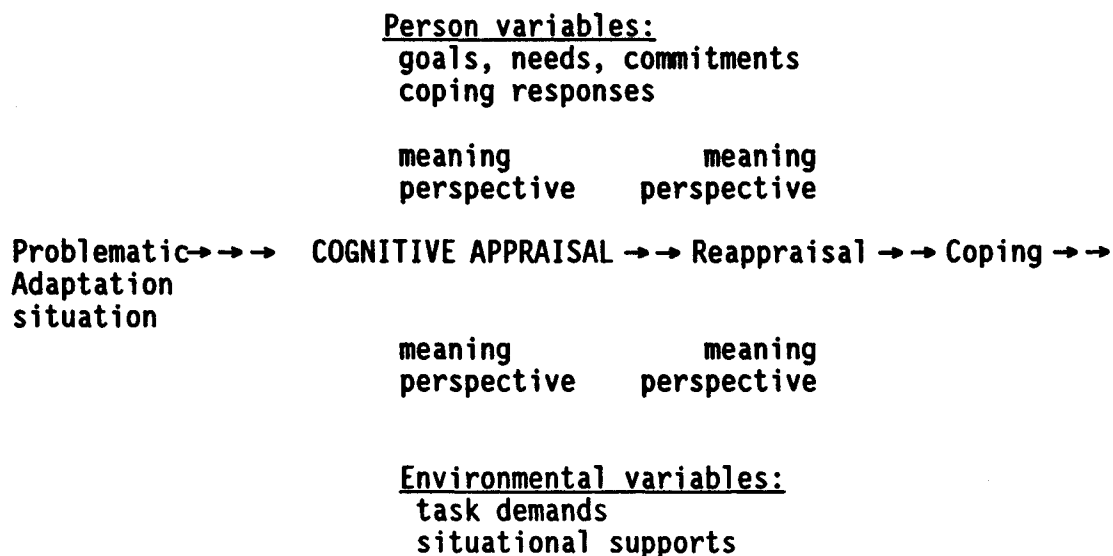
Figure 2

Figure 2. Conceptual Model of D'Zurilla's Problem Solving Intervention and Influence of Meaning Perspective (Sword, 1990).

Nursing assessment of the present meaning perspective of the post-partum mother is essential -- analysis of inherent assumptions in the light of the need for an alteration in perspective would be key to the woman's adaptation. Removing cognitive obstacles to effective and efficient problem-solving is described by D'Zurilla (1986) as a facilitative coping technique. The positive mind-set which results is more adaptive than merely avoidance of a negative cognitive set (Sword, 1990).

In summary, D'Zurilla's problem-solving intervention can be used to teach post-partum women skills which will enable them to cope with problematic situations around infant care. Mezirow's adult learning theory integrates with it to form a conceptual basis for both the process of learning and the role of the nurse-educator. The goal of the problem-solving intervention is to help the individual identify

and resolve problems that may be antecedent to maladaptive responses. At the same time, individuals are taught general skills that will enable them to deal more effectively with future problems (D'Zurilla, 1986). Thus there is potential for the promotion of psychosocial adaptation beyond the period of time within which formal post-partum teaching takes place (Sword, 1990).

Chapter Three

Using CCTV as a Teaching and Learning Medium

Literature Review

There have been very few studies of closed-circuit television per se, but numerous studies on the use of video in patient teaching. Since the patient information package is the same (videotape) this researcher has elected to review those articles on video that demonstrate that education via television can be more efficient and effective than traditional teaching methods. This review will be used as a jumping-off point to determine what can be applied to the operation of closed-circuit systems.

Nielson and Sheppard (1988) conducted a review of articles published in the decade 1975-1985. This time frame was specified in order to keep the number of studies manageable but current. A computer search was conducted using the key words "patient education", "television", "CCTV" and "video". This search identified more than 100 published articles. These articles were sorted into those that purported to include some evaluation of the effectiveness of a television or video production and those that were non-empirical essays on patient education and television. Examining the former group, the researchers looked at the study's site, focus sample, experimental design, measures and outcomes. To be able to validate

findings from research data, it is important to randomise subjects to the various interventions and to have a comparison group so that changes in the experimental group(s) can be attributed to the interventions. Of the total number of studies under review, only 11 both randomised their study subjects and used a comparison group. (see Table 1 pg 35). From this remaining group, seven intended to increase knowledge (11, 20, 22, 27-29, 31). Three were trying to teach a new skill (22, 25, 26) and four attempted to change behaviour (14, 21, 27, 28). All but one study (29) reported achieving their objective(s). However of the studies which had as their objective knowledge gain, only two conducted a long term follow-up. These showed that the immediate post-test knowledge gain had disappeared. When the groups that had a video programme were compared with a non-treatment control group (N=4) all reported that the group exposed to the video learned more than the control group. However, in five of the seven studies which compared a video programme with other methods of presentation, video alone was as effective as any other method of presentation (Neilson & Sheppard, 1988).

The results obtained from this review are consistent enough to provide a starting point for developing an argument in favour of the use of video to address the basic and repetitive aspects of patient education; it appears to be effective for short-term knowledge gain. As a delivery system in a hospital post-partum ward, closed-circuit television can facilitate repeated viewing and therefore potentially enhance retention of knowledge through reinforcement. Using video instruction in the process of skill-building is also possible (22, 25,

26). This review concludes that practice is the most effective means of teaching motor skills, but a video programme can begin the process of knowledge acquisition by demonstration, which then leads to skill development (Nielson & Sheppard, 1988).

Empirical studies looking at the use of bedside CCTV as an instructional medium (rather than generalised reviews of videos as patient education tools) are, by comparison, few. The investigator speculates that such a dearth of research is due to the relatively recent advances in this type of technology and the absence of published guidelines to help programmers measure the effectiveness of their services. Four hospitals have published evaluations of their patients' use of, and reaction to, CCTV health information/patient education channels (Esdale and Harris, 1985; MacKinnon and Young, 1986; Cioffi, 1987 and Regen and Eastman, 1984). In addition, they have included anecdotal accounts of health professionals' perceptions of the medium. Esdale and Harris (1985), in examining the program at St. Joseph Mercy Hospital, Ann Arbor Michigan, concluded that it is most effective when promoted by staff and seen as reinforcing other educational activities. Personal contact and individual counselling according to need were found to be the primary methods of delivering education, with CCTV being the reinforcing method. The same results were found by MacKinnon and Young (1986) in analysing the implementation of a CCTV channel at Toronto General Hospital. The key factor resulting in the maximum use of a CCTV program was its integration in the full spectrum of patient education activities. MacKinnon and Young describe the development of teaching care plans

that included the viewing of a CCTV programme and documentation records that included knowledge gained by viewing the videotape.

By contrast, Cioffi (1987) identified potential barriers to the use of CCTV at Emory University Hospital in Atlanta. She concluded that patients were less threatened viewing a programme at their bedside than in a group teaching session. This points to one of the most important aspects of learning, getting the audience to view the material in the first place, and is another way in which CCTV enhances viewing opportunities. Regen and Eastman (1984) conducted a survey of 314 patients at four large (>500 beds) metropolitan Indianapolis hospitals. Four sets of questions were examined under the headings of patient factors (who are CCTV viewers?), program factors (how they react to hospital CCTV health information channels), scheduling factors (how the hospital environment influences viewing practices) and promotion factors (how promotion influences viewing of health information channels). Their findings were similar to those of the other studies reviewed here, namely, that the use of video-television systems must never be considered a substitute for human interaction during patient education. The educational process includes correct timing, information giving and reinforcement, and these steps are dependent on staff support (including promotion) and follow-up. Esdale and Harris (1985) observed the importance of this when they reported that:

"CCTV is more effectively utilized in conjunction with program efforts for a defined target population, with accountable patient teachers.... The teacher sees the system as a valuable resource and 'time saver'. Furthermore, the teacher uses a protocol that includes referral to watch the film and follow-up to assess understanding" (pg. 209).

Summary:

This review has pointed to the paucity of research studies done to date on the effectiveness of CCTV as a patient education tool. Despite the lack of studies, the benefits that can be derived from the medium, as concluded by scientifically conducted research, have been identified. Because television is primarily a medium for entertainment, the challenge of convincing patients that it is an important and credible tool for learning has also been postulated (Cioffi, 1987). By its very nature, television is what Marshal McLuhan (1964) called a "cool" medium, that is it tends not to involve or emotionally engage the viewer. Until ways are found to compensate for this inherent limitation, it is important for anyone involved in patient education to have realistic expectations of what CCTV can and cannot accomplish as a teaching medium, and to be sure that its use is fully supported by providing adequate opportunity for personal interactions between the patient and the health care provider.

TABLE 1

SUMMARY OF STUDIES OF PATIENT EDUCATION USING VIDEO/TELEVISION

from Nielson and Sheppard (1988)

AUTHORS	DATE OF PUBLIC ATION	ISSUE	SITE	SAMPLE SIZE	RANDOM SELECTION	SURVEY INSTRUMENTS	INTERVENTIONS	RESULTS
(20) Alkhateeb W Lukeroth CJ Riggs M	1975	Venereal Disease	Clinic	450	Yes	Pre-post questionnaires to assess level of knowledge, attitudes and previous behaviour	(1) programmed learning guide (2) video presentation (3) person-to-person control - no information	Knowledge increased in all 3 experimental groups as compared to the control group but there was no significant differences among the three experimental groups
(11) Haggerty JA Bernard RR Young LW	1978	Digoxin	Hospital	40	Yes	Pre-post knowledge, attitudes survey	(1) video presentation on digitalis with pharmacist (2) video presentation on Digitalis without pharmacist (3) video presentation on Digoxin with pharmacist (4) video presentation on Digoxin without pharmacist	No statistically significant difference among all 4 groups on knowledge or attitudes
(31) Marshall WR Rothenberger MA Bunnell SL	1984	Contraceptives	Clinic and physician's office	100 females	Yes	Pre-post knowledge survey	(1) pamphlet (2) video presentation with unfamiliar narrator (3) video presentation with patient's physician as narrator (4) one-on-one (5) video plus pamphlet plus one-on-one	Knowledge gains by the three groups that included the media presentation was significantly greater than the other two groups.

AUTHORS	DATE OF PUBLICATION	ISSUE	SITE	SAMPLE SIZE	RANDOM SELECTION	SURVEY INSTRUMENTS	INTERVENTIONS	RESULTS
(21) Melamed BG Siegel LJ	1975	Pre-operative Modelling	Hospital	60, 4-12 year-olds	Yes	Pre-post: (1) anxiety scale (2) mother's rating scale (3) sweat index (4) observed behaviour (5) Hospital Fears Rating Scale	(1) peer modelling film (2) unrelated control film	Reported reduced behavioural problems for experimental group. Sweat index showed significant difference between groups - experimental better. Experimental group - significantly better on Hospital Fears Rating Scale. Mother's of experimental group reported significant improvement.
(28) McCulloch DK Mitchell RD Ambler J Tattersall RB	1983	Diabetes Diet	Hospital outpatient	40	Yes	(1) pre-post knowledge questionnaire (2) compliance of diet (3) haemoglobin measurements	(1) conventional diet sheet (2) lunch time demonstration (3) video presentation	In groups 2 and 3 both knowledge and compliance improved, haemoglobin levels were related to diet compliance.
(13) Minton PH	1983	Bladder/Bowel Control				Pre-post knowledge questionnaire	(1) video (2) lecture	There was significant knowledge gain in both groups, but no between group differences
(22) May MR	1975	Parenting	University	77 mothers	Yes	Pre-post: (1) knowledge questionnaire about "Time-out" procedure (2) skill in carrying out procedure	(1) pamphlet (2) lecture (3) presentation of behavioural techniques with role-playing (4) video of behavioural techniques (5) control - no information	There was significant knowledge gain by all 4 experimental conditions as compared to the control group. The presentation with role-playing was the best for skill development.
(29) Osguthorpe M Roper J Saunders J	1983	Psychiatry	VA Hospital	202 males	Yes	Pre-post knowledge survey about drugs	(1) drug information pamphlet (2) pamphlet plus video (3) video (4) control - no information	There were no significant knowledge differences among all four groups (including controls).
(14) Pace PW Henske JC Whitfill BJ Andrews SM Russell ML Probetfield JL Inaull W	1983	Coronary - eating breakfast	Hospital	68 males	Yes	(1) pre-post attitude survey: importance of eating breakfast, lunch, dinner (2) 7-day food records	(1) video presentation (2) video with discussion by dietician (3) control - no information	The two experimental groups changed their eating habits in the short-term. There were no attitudinal differences among the three groups.

AUTHORS	DATE OF PUBLICATION	ISSUE	SITE	SAMPLE SIZE	RANDOM SELECTION	SURVEY INSTRUMENTS	INTERVENTIONS	RESULTS
(25) Padilla GV Grant MM Rains BL Nansen BC Bergstrom M Wong HL Nanson R Kubo W	1981	Gastric Ulcer	Hospital	50	Yes	Pre-post: pain, discomfort, anxiety	(1) video presentation of nasogastric intubation procedure (2) procedure plus common distressful sensations (3) procedure plus coping behaviours (4) procedure plus coping behaviours to relieve common distressful sensations	Discomfort decreased. Pain reported decreased in all groups.
(27) Uzark K Kloe D Davis W Rosenthal A	1982	Cardiac Catheterization	Hospital	53, 3-12 year-olds	Yes	Pre-post knowledge, anxiety instrument	(1) video presentation (2) unrelated video	Experimental groups displayed significantly greater knowledge of events and sensations than the controls. Children in the experimental group tended to be less anxious as shown by them sleeping more during procedure.
(26) Webster-Stratton C	1981	Parenting	Clinic	35 mothers and children	Yes	Pre-post observations	(1) video of modeling behaviour (2) control	Mothers who viewed the video showed a significant increase in positive effect behaviours.

Framework for the Evaluation of CCTV

Systematic evaluation is a necessary component of any education activity. Depending on the theoretical model used, it is a diverse process involving many stages and steps. Evaluation is the process of marshalling information and arguments which enable interested individuals and groups to participate in the critical debate about a specific programme (Kemmis and Stake, 1988). It has two broad purposes: an aims-achievement evaluation, to reflect on whether a programme is achieving what it set out to achieve (formative) and a rational, decision-making evaluation to summarise achievements and set out claims for effectiveness (summative). Scriven (1967) was the first to support this distinction between formative and summative evaluation -- the former used for the improvement and development of ongoing programmes, and the latter used for accountability, or the decision to continue with a programme.

Identification of these themes emphasises that the learner is only one component of the evaluation process. Other questions for possible inclusion in these themes and ideas are:

- what information is needed?
- where will the information be found?
- when will the information be collected?
- how can the information be collected?
- from whom will information be collected?
- how will this information be analysed?
- who will act on the analysis?

Tools and techniques must be selected by examining costs (of the method), time involved and acceptability. The above questions could be answered by interviewing the patients, by observing their learned behaviours, or by answering a questionnaire. Interviews can be time-limited and therefore relatively inexpensive and may also yield unexpected feelings and reactions thus uncovering the "why" of the questions. Observation is time-consuming and open to inconsistencies in approach and among observers, which may lead to unreliable results. Questionnaires, on the other hand, measure well the degree of satisfaction, can be used easily with a large number of people, and can access knowledge and understanding. They allow all participants to be represented and invite their collaboration in the evaluation process. Questions to be asked via a questionnaire may include the following:

- are the resources (human, equipment, financial) available in the right quantity and quality, and at the right time to meet the needs of the participants?
- which educational strategies are most favourably received by the mothers?
- are the educational goals of the women met within the expected time frame?
- were there barriers to learning present? If so, what were they?
- was the educational environment supportive and encouraging?
- was there flexibility in scheduling, care-givers' attitudes, etc.?
- were the mothers satisfied with the outcomes of the educational activities?

Effectiveness (or whether the learning experience meets its predetermined objectives) is a major component of the adult learning experience. Questions that are key to this type of evaluation usually include:

- were the providers (nurses) satisfied with the effects of the educational activities?
- are the patients functioning better in their new role as mother because of their exposure to the CCTV learning experience?
- were there unintended or unexpected effects?
- what was the performance of the CCTV group as compared to a control group exposed to traditional teaching methods?
- could the observed effects be ascribed to the presence of other variables, i.e., education levels?

These questions are not limited by the current climate in patient education, but their interpretation is affected by three major trends: escalating costs, rising consumer expectations and a trend towards accountability. Hospitals must compete for scarce resources and lobby for specific types of services offered. They are under pressure to be fiscally responsible and accountable, to deliver quality care and service, to meet accreditation standards, to prove value for money invested in new programmes and to respond to critically-approved studies in health care (Podborski, 1987: Spasoff, 1987).

The needs assessment and pilot phase of The Mississauga Hospital CCTV system made major contributions to specifying teaching plans and identifying appropriate audiovisual programmes. Evaluation of the instructional interventions used was envisaged as measure of the effectiveness of the system. Patient satisfaction and cooperation are two of the most common criteria used in judging the effectiveness of the patient - caregiver relationship. Furthermore, the evaluation should take note of how the patient changes behaviours, to evolve an effective partnership with the nurse in acquiring new skills. The author posed the question of which strategy would yield the most exchange of information and whether or not there exists a market for this type (CCTV) of learning.

Hypotheses

The following hypotheses were proposed:

1. CCTV combined with nurse dialogue will be more effective than conventional post-partum teaching alone in fostering the acquisition of certain basic skills, such as baby bathing.
2. There will be no significant differences among multiparas in level of satisfaction with these different approaches to post-partum education.

Chapter Four

Methodology

Research Setting

The study was conducted on the Obstetrical Unit of The Mississauga Hospital, a 610-bed regional hospital offering Level I and Level II Perinatal care. In 1992, there were 3030 births and 56% of the women who delivered at the hospital were multiparas. On average, patients were discharged from the unit on the third day following a vaginal delivery, or the fifth day post Caesarean section. A philosophy of family-centered maternity care is encouraged and inpatient education is an integral part of this care. The standards of practice for the obstetrical nurses include a requirement to assess the learning needs of patients and establish a plan to meet the identified needs. The plan is updated as the functional status of the post-partum women change. In order to individualise teaching, ongoing documentation of learning is facilitated by use of a flow sheet. The nurse is required to indicate whether the mother has verbalised or demonstrated the concept or skill being taught and whether or not reinforcement is required. Most teaching is one-on-one, so that specific needs can be addressed. Generally, the nurses on the unit use discussion, demonstration and role-modelling as basic teaching methods.

Each patient bed has a television that receives the hospital patient education channels, one of which is devoted exclusively to post-partum topics. A colour videotape of infant bathing is shown five times a day at pre-determined times. Mothers are provided with a printed schedule, in order to determine the most convenient time for them to watch selected topics or review a programme a second time. Follow-up, one-to-one teaching is also provided by the nurse caring for the mother-baby dyad. The focus of discussion is often the woman's feelings and concerns around her ability to manage a task such as infant care. Psycho-cultural assumptions governing the woman's role expectations and coping strategies are also explored by the nurses, along with their effects on meaning perspectives. D'Zurilla's (1986) problem-solving intervention, with integration of Mezirow's (1978) theory of adult learning, is postulated as being an appropriate guide for the exploration of these areas of patient teaching.

In addition to closed circuit television, live infant care classes are presented by a Registered Nurse every other morning in the Newborn Nursery. All mothers and fathers are invited to attend. The nurses follow general guidelines regarding information to include in the classes. Within these guidelines, each nurse decides what information to include and how the information is to be presented. The class lasts from 20 - 50 minutes, depending on the instructor and the number of mothers taking part. Audience participation is encouraged and mothers and fathers often ask questions or volunteer comments. However, usually little group interaction or discussion of feelings and attitudes takes place. Follow-up and reinforcement of

the information presented is provided later in one-on-one teaching sessions, similar to the process with CCTV instruction.

For the purposes of this study to ensure the standardization of information shared, the general guidelines for infant bathing were distilled into a specific format, to be followed by whichever nurse was teaching the class (Appendix G). This was done to eliminate, as far as possible, the individual variations of style and content between the nurses conducting the classes. This resulted in an average class length of 30-35 minutes. Once the control group had completed the content and attitude questionnaires, they were given the printed guidelines to take home. The intent was to reinforce the teaching which had taken place and to provide a ready reference for successful problem solving. The approach to learning more closely paralleled what Mezirow (1981) defines as instrumental or "how to" learning, that is, it builds on what individuals already know and takes place within a structure of acquired frames of reference. The meaning perspective is taken for granted and generally does not change.

Subjects

The study population included post-partum patients who had experienced both vaginal and Caesarean section birth and who met the following criteria (see also Appendix A):

1. The parent was the natural mother of the infant.
2. The parent was capable of understanding spoken English and was capable of communicating responses to the questionnaires.

3. A minimum of 8 hours and a maximum of 36 hours, for vaginal births, and a minimum of 48 hours and a maximum of 72 hours for Cesarean section births, had elapsed since delivery of the infant.
4. Mothers and babies were rooming-in; this criterion excluded mothers of sick or premature infants. Mothers who had decided on, or who were considering relinquishing their infants for adoption were likewise excluded.

Patients' health care records available on the Obstetric Unit were reviewed within 12 hours of delivery to determine eligibility. Those who met the criteria were approached by the researcher for purposes of providing information and a written explanation about the project (Appendix B) and determining demographic factors (Appendix D). A convenience sample of women who met the criteria was invited to participate in the study, and written consent was obtained from those who agreed to take part (Appendix C).

During the study period, approximately 100 women who met the population criteria and who were 8-36 hours post vaginal delivery or 48-72 hours post Cesarean delivery were asked to participate in the study. Thirty percent of these women chose not to participate in the study. Their major reasons for not participating were not needing the information on infant bathing (26.5%) or preferring to see the videotape class (CCTV) and not willing to be randomly assigned (27.5%). Of the women who did participate (N = 72), 84.62% had vaginal deliveries and 15.38 %, had Cesarean deliveries. The majority were multiparas (62.50% of enrollment). The length of stay in hospital was two days or less for 30.76% of the subjects. The

women were fairly well educated with 45.71 % having at least one year of education after high school. No statistically significant differences ($p < 0.05$) on any of these demographic variables between patients who agreed to participate and those who did not agree to participate was identified.

Study Design and Procedures

A two-group cohort design was used to evaluate the effectiveness of the two approaches to postpartum education.

Group assignment was made randomly, with 34 subjects assigned to the live class group and 36 assigned to the CCTV group returning completed questionnaires. The live class group was smaller since two subjects in this group dropped out of the study because they did not follow the assigned programme. These subjects either forgot to attend the class (1) or scheduling or other difficulties interfered with their participation. (1).

Subjects who agreed to participate were assigned to a group and given information about how and when to see the video or attend the assigned class. Each subject was given a sealed envelope containing a content quiz and an attitude questionnaire, and was asked not to open the envelope until after viewing the video or attending the class. Subjects were asked to open the envelope and answer the questions immediately afterwards. This was to prevent contamination of the results by other learning opportunities available in the hospital. The completed questionnaires were collected by the investigator later the same day or the following day, giving the subjects an opportunity to ask questions and review any content

questions that were answered incorrectly.

Nurses presenting the live class during the study period were given specific guidelines on what information to include and how the information was to be presented. They were also given the content quiz (which is based on the video) and asked to incorporate the correct answers into their classes. This was to ensure homogeneity of information given to both groups. The focus of discussion for these groups was the woman's feelings and concerns, her ability to manage her new responsibilities and tasks and her coping strategies. D'Zurilla's (1986) problem solving intervention with integration of Mezirow's (1978) theory of adult learning was used as a guide for exploration of these areas and patient teaching.

Instruments

The instruments comprised three measures of learning: one five-point, Likert scale item anchored by the phrases "I learned a great deal" and "I learned nothing new", and four other Likert-scale questions measuring attitudes by assessing interest, convenience, ease of understanding and the degree of relaxation the subject felt about infant bathing (Appendix E). Another question asked was whether a videotaped programme or a live class was the better way to teach new mothers about newborn care. There was also a request to list items the subject had learned from the instruction that she did not already know.

Although it was hypothesised that there would be a difference between study groups on the attitude questionnaire, this outcome measure could also be expected to vary among individual participants.

The content quiz component, also in questionnaire form, was based on information presented in the CCTV videotape. Both these instruments were developed by Ms. Ellen Leff for her 1988 study conducted at the Medical Center of Vermont. Written permission to use them for this study was obtained from the author, and they are reproduced in full in Appendices E and F. The baseline sociodemographic inventory (Appendix D) was administered in hospital to all subjects. This data was used to describe the characteristics and representativeness of consenting subjects, and to assess the comparability of the two study groups.

Chapter Five

Results

Representativeness:

Seventy subjects completed the study, 36 in the CCTV group and 34 in the live class group. Demographic and obstetric data were obtained from all the subjects who participated. Chi-squared tests were used to test differences in the frequency of categorical variables so that comparability and representativeness between the two groups could be established. The frequency of distributions for categorical data (educational level, employment and marital status and cultural group) are summarised in Table 2. Both the live class and CCTV groups were comparable on all variables except for a numerical difference in employment status - this was not statistically significant. The level of significance for all statistical tests was set at $p = 0.05$.

Table 2. Comparison of the Demographic Characteristics of CCTV and Live Group Participants

Characteristic	CCTV (n = 36)		Live Class (n = 34)		X	df	p
	N	%	N	%			
<u>Highest Level Ed.</u>							
High School	13	36.1	10	30.3	.26	1	NS
Post High School	23	63.9	23	69.7			
			*1 missing observation				
<u>Employment Status</u>							
Employed	26	72.2	29	85.3	1.77	1	NS
Unemployed	10	27.8	5	14.7			
<u>Marital Status</u>							
Single	4	11.1	0	--	5.46	3	NS
Common-law	3	8.3	5	14.7			
Married	29	80.6	28	82.4			
Separated	0	---	1	2.9			
<u>Cultural Group</u>							
White	23	65.7	18	56.3	.65	2	NS
Black	4	11.4	5	15.6			
Other	8	22.9	9	28.1			

Note: Some categories were collapsed to allow for ease of comparison.

The mean age of respondents was 28.6, with a range of 18-40 years. Caesarian Section was the method of delivery for 10 babies (14.3%) while the remaining 60 (85.7%) were vaginal births. Pearson product-moment correlation was used to establish relationships between these and other variables and overall satisfaction scores. Correlation procedures were also used to determine if there was a stronger relationship between either educational approach and satisfaction outcomes.

Quantitative Analysis of the data:

The data was analysed to obtain the frequency count of responses and the averages of each variable; means and standard deviations were then calculated. Unpaired t-tests were used to establish differences in subscores between the two groups. To test the second hypothesis (pg. 31) t-tests were used to determine if there were mean differences in scores on the Likert scales and responses to the satisfaction questionnaire between the study groups.

The content quiz score for each subject was the number of correct answers on the nine-item skill-testing questionnaire. Total scores for both study groups were calculated, yielding a mean of 6.74 (S.D. = 1.54) for the live group class and 6.28 (S.D. = 1.39) for the videotape group. The t-test for equality of means indicated no statistically significant difference in the distribution of scores between the two groups (Table 3).

<u>Table 3.</u> Content Quiz Scores for all subjects (N = 70)			
<u>GROUP</u>	<u>N</u>	<u>MEAN SCORE</u>	<u>S.D.</u>
Live	34	6.7353	1.54
Videtape	36	6.2778	1.39
Mean difference = .4575			
T-test for equality of means			
Variances	T-Value	2-tail Sig.	95% C.I for diff.
Equal	1.31	.196	(-.241, 1.157)
Unequal	1.30	.197	(-.244, 1.159)

No difference between the groups was observed on the basis of educational level, occupation or age. There was a definite correlation ($p = .000$) with ethnicity, with the mean number of correct answers given in the white group being $M = 7.0$, vs all other ethnic groups, $M = 5.7$. However, when the same comparison was used to evaluate white/other groups vs educational levels, there was no significant difference ($P > 0.8$). Scores on the quiz may have reflected previous learning or patients' learning from other sources such as their roommates, nurses or physicians. Therefore, a self-report measure of the amount learned was also included (see Table 4, item 2).

Table 4 Attitude Questionnaire items		
Five point Likert Scale Item	Live Group Mean	Videotape Group Mean
1. Boring/Interesting	4.50	4.19
2. Learned a great deal/nothing new	1.91	3.06
3. Convenient/inconvenient	1.67	2.44
4. Easy/difficult to understand	1.47	2.29
5. Felt more nervous/relaxed about infant care	4.44	4.31
Number of items learned	3.86	3.43
The 2-tailed test of significance was used to test for statistically significant differences in the distributions for all items reported.		

The mean amount of learning for the CCTV group was 3.06, compared with only 1.91 ($p = .000$) for the live class group, with lower scores (score = 1) indicating a higher level of learning and higher scores (score = 5) indicating learning nothing new.

This number may be negatively skewed by the higher preponderance (at a significance level of $p = .0007$) of multiparas in the study as a whole (61%) who may have been exposed to prior learning, although subjects were randomised without regard to parity.

Note: The author's review of the delivery records of the time-frame during which the study was conducted indicates a preponderance of multiparous births.

The third measure of subjects' learning asked each subject to list items learned from the class that she did not already know. Sixty-seven (N = 42) percent of the subjects listed one or more items they had learned (Table 7). Here again, no statistically significant difference between the number of items listed by the two groups was identified. The mean number of items listed was 3.86 for the live group class (N = 26) and 3.43 for the videotape group (N = 21).

In summary, three different measures indicated only one significant difference in learning for the two groups. Also, for subgroups of multiparas (61% of completed surveys) and primiparas (39% of completed surveys), group assignment was not significantly related to content quiz scores. However, multiparas self-report of amount learned was higher than primiparas in the CCTV group.

Two of the remaining 4 items on the attitude questionnaire showed a significant difference between live class and CCTV. Group means for live class and videotape groups respectively for the boring/interesting item were 4.50 and 4.19; for the convenient/inconvenient item were 1.67 and 2.44 (p.019); for the easy/difficult to understand item were 1.47 and 2.29 (p.017) and for the nervous/relaxed (about newborn care) item were 4.44 and 4.31. Given that a value of 1 represents a high level of satisfaction, it can be demonstrated that the live class group found this learning modality significantly more convenient and easier to understand.

Factors contributing to client satisfaction levels are discussed in detail in the qualitative analysis section. However, when total satisfaction scores are compiled and subjected to t-test for equality

of means, the live class group was significantly more satisfied with the learning experience, 21.9 vs 18.2 ($p = .000$). First-time mothers were more satisfied overall than multiparas, 21.0 vs 18.4 ($p = .010$). There was no difference by educational level or ethnicity (white vs other) and no correlation with age.

Qualitative data analysis

In this study, qualitative data were used to help confirm the analysis of the quantitative findings. The qualitative dimension consisted of open-ended questions evaluating the learning experience. Specifically, women were asked the following:

1. What do you think is the better way to teach new mothers about baby care?
2. What did you learn that you didn't already know? (Appendix E)

In addition, multiparous women commented spontaneously about differences in their knowledge gained from previous experience.

The responses were transcribed verbatim and analysed in order to develop coding categories and to identify themes among the responses. The comments were grouped under the categories listed in the Tables 5 through 7. The investigator analysed the data herself but shared the preliminary results of the analysis with another clinical nurse specialist who concurred with the thematic analysis.

Findings

Women made positive and negative comments about both CCTV and live group class as a learning modality. Ninety percent ($N = 63$) evaluated their experiences primarily as positive. Most described only positive

experiences whereas 6 also described one disappointment or unfavourable aspect of the experience. Only two (of 36) described CCTV as a negative encounter. One of these who was experiencing her fourth birth described the programme as "boring and repetitive". (There is a real possibility that prior learning influenced her appraisal). The other cited frequent interruptions from staff and visitors, and stated that she was "too exhausted and pre-occupied to absorb the information."

When asked which is the better method for teaching new mothers about infant care, the majority (of both groups combined) stated that live group classes were better - 90% of the live class group, 34.4% of the CCTV group and 61.9% overall. This is significant at a level of $p = .000$. Since subjects were not asked to sample both live class and CCTV instruction, their preferences and the reasons for these preferences were assumed to be based on previous experiences with videotape and live group teaching. Six subjects stated that both CCTV and live classes were good teaching methods, even though five stated a preference for one method over the other. Four subjects who had preferences also stated that different teaching methods are better suited for different people, i.e., primipara versus multipara. They indicated that primipara have a greater knowledge deficit and therefore, a greater need to ask questions and receive immediate answers. This reason was also cited by 24 subjects in the live group class and 3 in the CCTV group.

Positive comments the women made about their experience were compared and grouped in terms of recurring themes (Table 5).

Table 5 Favourable Comments

Positive Categories - CCTV	N *	% +
1. Convenience	12	33
2. Repeated at intervals/can watch several times	7	19
3. Easy to understand	8	22
4. Good refresher/support to live classes	10	28
5. More relaxing/can rest and watch in own room	6	17
Positive Categories - Live Class	N *	% +
1. Allows for direct questions/immediate feedback	24	71
2. Exchange ideas with other parents	8	24
3. "Hands on" practical approach	8	24
4. Greater detail of information	9	26
5. More personal/interactive	10	29
* The 63 women made more than one positive comment.		
+ The total is more than 100% because women responded in more than 1 category.		

Despite overall high levels of satisfaction, six women also identified problematic areas. These fall into the categories listed in Table 6.

Table 6 Unfavourable Comments

Negative categories - CCTV	N *
1. Programmes interrupted much-needed rest	1
2. Non-interactive - can't ask questions	1
3. Require careful, focussed attention/concentration	2
4. Not as detailed as classes	1
Negative categories - live class	N *
1. Takes more time than the video	1
2. Too busy to attend class at fixed time	1
3. Too many people in the group	1
4. Too "frightened" to ask questions in a group setting	1
* The 6 women made more than 1 negative comment.	

With respect to the specifics of new information gained, a number of themes emerged. These categories were often recorded by more than one respondent (Table 7). In addition, there were global statements ranging from "[I learned] almost everything, I don't know much" through "I learned a lot, even though I already had a baby ten years ago" to "[I learned] not much, it's a lot like riding a bicycle".

Table 7 Specific Knowledge Gained by Participants

Specific topics identified - CCTV	N = 21
1. Order of washing, i.e., eyes/face first	2
2. Care of scalp with brush	5
3. Care of male genitals/circumcision	2
4. Care of female genitals	2
5. Cord cleaning/care	2
6. Use of mat in bath to prevent slipping	3
7. Everything!	8
Specific topics identified - Group classes	N = 26
1. How often to bath the baby	2
2. Cord cleaning/care	4
3. Dressing and wrapping the baby	3
4. How to hold/support the baby in the bath	2
5. Order of washing, i.e., eyes/face first	5
6. Care of female genitals	2
7. Everything!	9

A comparison of the two groups shows that there is some commonality of topics. This is valuable information for the planning of educational interventions, whichever modality is used. Care must be taken to incorporate those topics which women view as essential information and which may not have been available to them through other media. The common knowledge deficits identified were:

1. order of bathing, i.e., eyes/face first
2. importance of support/positioning in bath

3. genital cleansing, both sexes
4. cord cleaning/care

In addition, a total of 17 respondents identified a gross lack of knowledge about all aspects of bathing a baby. Surprisingly, these were not all "first time" mothers, but included several who had forgotten the skills learned from a previous birth.

Due to the large number of nursing staff involved in teaching the classes, no attempt was made to examine scores for subgroups of subjects taught by individual nurses. The power of statistical tests would be low due to small sample sizes. To enhance the reproducibility of the data, it might be useful to identify expert teachers beforehand to see whether learning is greater for subjects taught by experienced teachers.

Chapter Six

Discussion

Conclusions

Women who participated in this study were representative of all women who deliver at The Mississauga Hospital. External validity was thus demonstrated. However in considering the generalisability of the findings to other settings, it is important to note the diverse cultural origins of these women. From the demographic data it is observed that 38.8% of those surveyed would be expected to have English as a second language. Subjects in the CCTV and live class groups were comparable on sociodemographic and obstetric variables, except that there was a statistically significant difference ($p.0007$) in the enrollment of multiparas versus primiparas.

The results of this study lend support to the use of closed circuit television for in-hospital post-partum education. Two measures of learning (content quiz and the list of [new] things learned) were not significantly different for the videotape and live class groups. At third measure (self report of the amount learned) was significant at $p = .000$. CCTV can be used to address the basic and repetitive aspects of patient education and it appears to be effective for short-term knowledge gain. Scores of 8 or more (of 9) correct answers on the content questionnaire were obtained by 26% (N

= 18 out of 70) of respondents, and 75.7% scored > 5 correct answers. As a delivery system within a hospital setting, CCTV can facilitate repeat viewing and therefore potentially enhance retention of knowledge. Using video instruction in the process of skill building has also been proved to be effective in that it can begin the process of knowledge acquisition by demonstration. This leads in turn to skill development and mastery.

Statistically significant differences were identified between the groups in the attitude measures of convenience and ease of understanding and there was, contrary to hypothesis 2, a difference among multiparas in level of satisfaction with these different approaches to post partum education. However, the results of this study suggest that combining an interactive, problem-solving approach to post partum education, with CCTV, is no more effective than conventional classes in achieving knowledge acquisition for new mothers. The results are consistent enough to provide a starting point for future patient education programme development and implementation.

After hearing the results of this study, the staff of The Mississauga Hospital post partum unit elected to continue to offer live group classes 2-3 times a week, in addition to the CCTV. This approach allows patients to select the learning modality they prefer, within the constraints of length of stay. The hospital CCTV system continues to show the baby bath tape (and other post partum teaching videotapes) several times daily (Appendix H). A schedule of the specific programming is included in the post partum patient handbook

and is also placed on meal trays as a periodic reminder of what is available for viewing.

At the conclusion of each programme, patients are instructed by on-screen and audio message to contact their nurse for a personal follow-up session. Documentation tools have been designed to specify the material that should have been covered, as a reminder of what the nurses are to explore, and the nursing station houses a learning resources catalogue that lists all the appropriate CCTV programmes that are available.

Limitations:

The failure of the findings to support the first research hypothesis may have occurred for one of two reasons:

- (i) there is no relationship between the approach to post partum teaching and learning outcomes, or
- (ii) a true relationship exists between these variables but the data failed to reveal it. Because the theoretical framework was logically developed and sound (Sword, 1990), the absence of significant differences in outcomes likely reflects methodological limitations.

The sample size may also have precluded confirmation of the first hypothesis, as small differences in outcome were expected, related to the educational manoeuvres.

There were other threats to internal validity in effect. Concurrent with this research, an increase in demand for beds on the obstetric unit (resulting from bed closures) was necessitating a

shorter length of stay for women and in particular, multiparas. Some of the women who agreed to take part in the study may have had their perceptions altered by pressure to conform to an artificial learning time-frame. Their responses to the learning questionnaire (content quiz) may also have been negatively influenced by this event.

Study results may also have been confounded by lack of control over co-intervention. For instance, 61% of respondents were multiparas and no attempt was made to measure knowledge levels beforehand. For most of the subjects then, some of the infant care skill content was already familiar, and the new content probably more easily learned. Contacts with other health care professionals, i.e., family physicians, paediatricians, etc., hospital roommates and/or a variety of written materials may have led to informal information-sharing and resulted in unequal learning between the groups.

In an attempt to overcome the limitations related to the population and setting, three different measures of learning were used. The self-report measures indicate that learning did occur as a result of attending the class (the mean was near the middle of a scale from "a great deal" to "nothing new") with primiparas feeling they learned more than multiparas, although their quiz scores were lower.

Twenty-five different nurse teachers took turns presenting the live class during the study period. Although the content was consistent with each presentation (Appendix G), their teaching styles varied widely.

The finding that multiparas in the CCTV group reported greater learning than those in the live class group is difficult to explain. Perhaps the videotape was in some way more appropriate for more knowledgeable learners. These patients may have felt more comfortable watching the programme in their own rooms, with no need to publicly admit their lack of knowledge by attending a group class.

Instead of open-ended, written questions, interviews might have been conducted with a representative sample for the purpose of gathering qualitative data. Quasi-statistics could then have been used to strengthen the confidence in the validity of the questionnaire to identify the appropriate themes. One of the disadvantages of the conceptual approach to content analysis is the risk of subjectivity. Preconceived notions of what learning ought to have taken place could hinder optimal exploration of the individual learning experience.

Implications For Future Research

The finding that overall subjects learned as much from the CCTV as from the live group class suggests that videotapes can be effectively used for post-partum patient education. However, subjects' strong preference for the live class as a teaching method suggests caution if CCTV is to be substituted for live classes. Since being able to ask questions was cited as the major advantage of the live class, nurses may want to suggest that patients who watch the CCTV programme write down their questions and discuss them with a nurse as soon as possible after the viewing. Another approach would be to have groups of patients view the CCTV programme at their bedside

with a nurse leading a short question and discussion group after the viewing.

Prior to initiating either intervention, it would be useful to assess the specific learning needs of the individual woman, regardless of whether she is a primipara or a multipara. Only then could the appropriate strategy be planned and implemented. It remains unknown which educational approach is most effective when a learning need is identified. Different approaches may be warranted in different situations. The approach must be congruent with the content and goals of the teaching/learning interaction. In some instances, learning through perspective transformation might be most appropriate, whereas a "how to" learning might be more relevant in other contexts. Both CCTV and group class lend themselves to the fulfillment of these criteria, based on the individual's expressed need.

Some patients in this study clearly stated that they were less threatened viewing a programme at their bedside than in a group teaching session. This points to one of the most important aspects of learning, getting the audience to view the material in the first place. Using technology with which the patient is familiar, and in the privacy of their own rooms, basic questions, concerns, fears and routines can be addressed and explained, thus helping to alleviate parent stress. Often a mother cannot immediately absorb all the information about the situation, and needs to hear certain things several times. Having to ask a nurse or doctor may be embarrassing, perhaps she may forget some of her questions, or some questions may even be difficult to articulate. Watching the CCTV programme

ameliorates the situation and reduces the time needed for basic instruction.

From a care-giver's point of view, having to answer the same questions or repeat the same information or instructions many times can be tedious, time-consuming and frustrating. However, directing a parent to accessible information and then answering questions arising from a base of knowledge, allows for personalized patient care and is more rewarding for both the mother and care-giver.

The CCTV network also helps ensure that information/instructions are not inadvertently overlooked, and serves to present standardized information or, if appropriate, several different points of view (such as from a medical expert, from a grassroots support group, from a 'real person').

In supporting care-givers and parents, there is less strain on the resources of the health-care system and more time available for meaningful personal instruction and interaction. This adds up to a cost-effective program that ensures savings to the system by reducing expensive nursing hours and allowing those valuable resources to be redirected. With more reductions in personnel likely, the advantages of CCTV-based instruction become even more apparent, as fewer staff hours need to be spent in relaying basic facts and information. Contact time for patient teaching thus can be saved and used for the highly individual reinforcing interactions that enhance the educational experience.

Further research with different settings and patient populations is needed to explore the limitations of CCTV instruction and determine how this medium can most effectively be utilised. Research should be directed towards both understanding the learning needs of the new mother and identifying the most effective approach to post partum teaching. The objectives of any educational method/medium should reflect the needs of the targeted population. The method should make maximum use of the teaching opportunities available in the hospital. Only then can a variety of dimensions of learning be comprehensively addressed, and the appropriate method of education of post partum women be optimally promoted.

Recommendations

The Health Care System in Canada is undergoing perhaps the most critical appraisal in its history from health professionals, clients and government agencies. Demands and resources represent an equation that simply will not balance. Yet it is in times of crisis when systems are most open to change. The promise of increased client satisfaction and resulting saving of resources means that CCTV is slowly gaining ground as a "mainstream" medium in health education.

The experience gained in the design, implementation and evaluation of the Mississauga Hospital CCTV project has led the author to make the following recommendations about the use of bedside televised patient education programmes:

(1) Planning for the use of videotape must be done in conjunction with other key personnel.

The implementation of a CCTV system requires the cooperation of a number of departments, some of which may not have worked together before. All of those involved -- the medical staff, nursing, allied health departments, public relations, education, engineering and administration -- play essential parts that contribute to the whole.

Although nursing and education speak the same language, it may be different from the language of engineering. Therefore, learning to understand each other's objectives and working together effectively must be a continuing process. Also, relevance to current hospital teaching practice(s) is imperative.

(2) Individualised teaching care plans and documentation records should incorporate CCTV programmes as a standard teaching aid.

Clinical staff need to know that viewing videotapes is an acceptable patient learning activity and one way of demonstrating this is to include specific videotapes in the post partum care plans and education records. Esdale and Harris (1985) observed:

"CCTV is more effectively utilized in conjunction with programme efforts for a defined target population, with accountable patient teachers..... the teacher sees the system as a valuable resource and 'time saver'. Furthermore, the teacher uses a protocol that includes referral to watch the film and follow-up to assess understanding" (pg. 209).

Esdale and Harris (1985) found that the key factor resulting in maximum use of CCTV is its integration into all patient education activities. This involves the development of teaching care plans including the viewing of specific CCTV programmes, and documentation records including knowledge gained by same. A review of the steps of post partum education incorporating the use of this medium will increase staff confidence in this process.

(3) Clinical staff need to be aware of the content of the CCTV programmes and the steps they can take to assess learning needs.

It is unrealistic to expect staff to promote and reinforce CCTV programmes without knowledge of the clinical content. Some effective promotional techniques used by the author comprised:

- a) including clinical staff in the selection (or production) of videos
- b) having staff preview a new video prior to putting it into the CCTV programming
- c) ensuring that a comprehensive knowledge of the relevant programmes is built into the unit-specific orientation for new staff
- d) providing regular in-service training (with the clinical educator) for nursing unit personnel. A CCTV Post-Partum Patient Education Resource Guide is also being published.

(4) Scheduling must take into account the unit routines and the importance of repeated viewing opportunities.

Developing a schedule to highlight peak potential viewing is a combination of trial and error and common sense. Post partum programming needs to be scheduled around infant feeding times and reaches its largest audience in the evening and possibly early

morning. Any program considered a "must watch" rather than a "nice-to-know" should be scheduled daily and at different time slots (Appendix H).

(5) Some flexibility needs to be built into the schedule to accommodate individual needs.

Flexibility is often compromised in favour of more time-saving schedules. The ability to order a specific programme via a computer terminal or via a telephone request to the Audio-Visual Department is a preferred option. One of the benefits of this system is that it makes possible the development of a library of materials that meet a wide range of patient learning needs. Television is not the ideal teaching medium for every patient, however. Therefore some screening criteria need to be developed to identify those patients who should preferably receive one-on-one instruction from the nurse.

Based on the preceding recommendations, CCTV technology has the potential for enhancing patient education. The most suitable educational applications for post partum patients include:

- providing direct demonstration of the performance of complex psychomotor skills
- presenting active illustrative material (not otherwise readily available) to facilitate concept formation
- presenting role models of particular behaviours, attitudes and values.

As an adjunct to one-on-one post partum patient education and a method of presenting base-line information, CCTV is one approach that capitalises on a familiar medium and reduces the time spent in one-on-one presentations. In an era of shorter hospital stays, fewer staff members and tighter cost constraints, it has even greater potential as a tool for post partum education. Based on the findings of this study, and supported by previous research, CCTV is certainly an option worthy of further exploration.

Appendix A

Sample Criteria

All consenting mothers of infants in the specified community hospitals within the stated time frame will be included in the study given that:

1. The parent is the natural mother of the infant.
2. The parent is capable of understanding spoken English and is capable of communicating responses to the questionnaires.
3. A minimum of 8 hours and a maximum of 36 hours, for vaginal births, and a minimum of 48 hours and a maximum of 72 hours for Caesarian section births, has elapsed since delivery of the infant.
4. Mothers and babies are rooming-in; this criterion excludes mothers of sick or premature infants. Mothers who have decided on, or who are considering relinquishing their infants for adoption will likewise be excluded.

Appendix B

Explanation of Study to Prospective Subjects
by Investigator

Hello. My name is Elizabeth Torr, and I am a graduate student under the supervision of Dr. J. Richardson, Professor, McMaster University.

The purpose of this study is to obtain your perceptions of attending a live group class, versus viewing an instructional videotape to learn how to care for your baby. Each mother who consents to take part will be asked to complete two short questionnaires. In addition, participants will be asked a few questions about themselves, such as their age.

If you agree to participate in the study, I, as the investigator, would like to arrange a time which is convenient for you so that I may ask you some questions. The interview will take approximately 10 minutes of your time. In addition, you will receive the two follow-up questionnaires. These should take no more than 15 minutes of your time.

When the analysis of the study's data is complete, all identifying information about you and the other participants will be destroyed. If you agree initially to participate in this study, you are free to withdraw from participation at any time and free to refuse to respond to any specific questions. Your name will not appear anywhere in the report. If you decide not to participate in this study, this decision will in no way influence the current care that you or your infant will receive.

It is important for you to know that no individual responses will be shared with any hospital's staff. I would be pleased to provide you with a summary of the findings on completion of the study, should you be interested. If you have any questions regarding the study or your participation in it, please do not hesitate to contact me.

Your interest in this study is greatly appreciated.

Sincerely,

Elizabeth Torr, B.Sc.N.,R.N.
Tel. (905) 848-7100

Appendix C

Subject Consent Form

Research Project:

Comparison of the Effectiveness of Videotape (CCTV) versus Live Group Infant Classes.

Investigator: Elizabeth Torr (905) 848-7100
under the supervision of
Dr. J. Richardson (905) 525-9140

I _____ have been asked to participate in a study being conducted by Elizabeth Torr. The study is part of the requirement of the Master of Science program and is under the supervision of Dr. J.S. Richardson, Professor, McMaster University.

I understand that the purpose of the study is to obtain my perceptions of learning to care for my baby via a live group class, or by watching an instructional videotape, and that I will be randomly assigned to one or the other method. I understand that my initial participation will involve responding to interview questions about myself, and that in addition, I will be asked to complete two short questionnaires. I understand that all information obtained by the study will be kept confidential and that my name will not be identified during the study, in the results or any other time. I understand that I may refuse to answer any questions.

I understand that the results of this study may be of no direct benefit to me or my baby(ies), however the information gained from this study may assist nurses in their provision of learning opportunities to the families of infants. I understand that if I decide not to participate, I may withdraw from the study at any time with no change in the care of myself of my infant(s).

I hereby consent to participate in this study.

Print Name

Signature

Date

Appendix D
Data Collection Sheet
Background and Personal Factors

Study Number _____ Date and Time _____

1. What was the date of your baby's (ies') birth? _____

2. What was the time of your baby's(ies') birth? _____

3. Was your baby born by Caesarian Section?

Yes _____ No _____

4. Are you considering adoption for your baby?

Yes _____ No _____

5. Do you have any other children? _____ If yes, how many? _____

6. What is your age (in years)? _____

7. What is your marital status?

(1) Single _____	(4) Married _____
(2) Common-Law _____	(5) Separated _____
(3) Divorced _____	(6) Widowed _____

8. What cultural group do you most identify with?

(1) Black _____	(5) Native American _____
(2) White _____	(6) Middle East _____
(3) South East Asia _____	(7) Other (please specify)
(4) Oriental _____	_____

9. What is your occupation? _____

10. Could you tell me the approximate amount of your combined family income last year? _____

APPENDIX E

Date: _____

STUDY # _____

Class seen: CCTV _____ or live _____

THE MISSISSAUGA HOSPITAL

ATTITUDE QUESTIONNAIREPLEASE CIRCLE THE NUMBER THAT BEST INDICATES HOW YOU FEEL ABOUT THE
BABY CARE CLASS/VIDEO.

very boring	1	2	3	4	5	very interesting
I learned a great deal	1	2	3	4	5	I learned nothing new
very convenient	1	2	3	4	5	very inconvenient
very easy to understand	1	2	3	4	5	very difficult to understand
made me feel more nervous about baby care	1	2	3	4	5	made me feel more relaxed about baby care

Which do you think is the better way to teach new mothers about baby care? (check one):

TV program _____ live group class _____

Why?

Please list below things about baby care that you learned from the baby care class/video and didn't already know:

Please circle the number indicating the highest year of education you have completed:

Elementary/middle school: 6 - 7 - 8

High School: 9 - 10 - 11 - 12 GED

After high school: 1 - 2 - 3 - 4 - 5 - 6 or more

APPENDIX F

Date: _____

Class seen: CCTV _____

live _____

STUDY # _____

**THE MISSISSAUGA HOSPITAL
CONTENT QUESTIONNAIRE**

PLEASE CIRCLE THE BEST ANSWER FOR EACH QUESTION:

1. The best time to bathe your baby is:
 - a. before feeding
 - b. just after a feeding
 - c. in the morning
 - d. doesn't matter
2. What part of the baby should you wash first?
 - a. hair
 - b. eyes
 - c. diaper area
 - d. doesn't matter
3. Clean around the baby's umbilical cord (navel) with:
 - a. alcohol
 - b. Bacitracin ointment
 - c. soap and water only
 - d. do not clean the area until the cord has fallen off and the area is healed
4. Which is the safest method of checking a baby's temperature?
 - a. oral (thermometer in mouth)
 - b. rectal
 - c. axillary (under the arm)
 - d. doesn't matter
5. Newborns usually cry loudly when being bathed.
 - a. true
 - b. false
6. For a baby boy (not circumcised) avoid pulling back the foreskin.
 - a. true
 - b. false
7. Newborn girls may normally have swollen labia.
 - a. true
 - b. false
8. You should notify the doctor if your baby girl has a small amount of blood tinged mucous from the vagina.
 - a. true
 - b. false
9. It is important to give your baby a bath every day.
 - a. true
 - b. false

APPENDIX G**GUIDELINES FOR BATH DEMONSTRATION INFORMATION FOR NURSES**

Each mother randomised to this intervention will observe a demonstration of a sponge bath and bath her infant under the supervision of the nurse.

It is recommended that demonstration and return demonstration be combined while the information is still fresh in the mother's mind.'

If the father/significant other is present, he should be encouraged to participate.

DEPARTMENT OF OBSTETRICS



GUIDELINES FOR BATH DEMONSTRATION

BATHING YOUR BABY

BATH DEMONSTRATION INFORMATION FOR MOTHERS/PARENTS

1. APPROPRIATE BATH TIME

Your baby can be bathed at any time which is convenient to you providing it is not immediately after a feeding, as he is likely to bring up (regurgitate). You might like to bath him in the morning when you have some free time or you may rather wait until Dad comes home so all of you can enjoy this time or maybe just before bedtime to provide comfort and induce sleep.

If possible, the time you choose should be when you are least likely to be interrupted.

2. IMPORTANCE OF BATH

Bathing serves a number of purposes:

- removes bacteria, bodily wastes and environmental contaminants from your baby's skin;
- it allows you to observe your baby's entire body;
- it gives your baby a chance to exercise his arms and legs;
- it provides comfort for your baby;
- as your baby grows, bath time can become a happy time for both you and your baby. Bathing your baby is not just a job to be done, it is one of the mothering times when you and your baby get to know each other better;

- fathers like to bath babies too. As long as he follows the same safety rules you do, there is no reason why he should not.

3. BATH ENVIRONMENT

Wherever you bath the baby the environment should be free of drafts and warm enough - 22° to 24° C.

The bath should not be interrupted and must not be done too close to a door or window.

4. BATH SUPPLIES

- wash your hands well with soap and water and remove jewelry before gathering equipment and supplies and handling your baby;
- you need to use a basin, small tub or sink for water;
- a flat washable surface of convenient height with a protective padded cover or towel to place baby on;
- a clean soft wash cloth;
- mild, non-perfumed soap;
- a towel to dry baby;
- a receiving blanket to cover baby and keep him warm during his bath;
- a diaper;
- clean clothes;
- alcohol and Q tips for cord care;
- vaseline;
- cotton balls;
- tearless shampoo;

- hair brush with soft bristles;
- safety pins - if used should be closed and out of the reach of the baby;
- receptacles for soiled clothing, cotton balls, etc.

5. PREPARING FOR THE BATH

- fill the basin with comfortably warm water, about 98° to 100° F (37° to 38°C);
- test the temperature with the inside of your wrist or elbow;
- arrange all supplies on a stable surface, within easy reach;
- place a folded blanket or towel as a protective padding under the baby to give him a feeling of security and to help him from rolling off the surface.

6. UNDRESSING THE BABY

- place the baby on his back on the work surface;
- you may undress him completely and wrap him in the receiving blanket or towel to keep him warm;
- or you may rather wash his top half first;
- whatever you do, make sure to keep him warm by exposing only the areas to be washed at any one time.

7. CARE OF THE EYES

- moisten a cotton ball and gently wipe from the inner corner of one eye over the eyelid to the outer, to remove any accumulated discharge and prevent irritation to his eyes;
- repeat with a clean cotton ball on his other eye;
- any redness, swelling or discharge should be reported to your doctor.

8. CARE OF YOUR BABY'S FACE

1. ● wet the washcloth, wring it out, and gently wash his face; move from the forehead to chin and work carefully around his nose and mouth to remove any collected material;
- be careful not to drag the unused end of the washcloth over his face because this may irritate him;
- gently pat his face dry with the towel, again taking care not to drag it across his face.

2. NOSE:

- only wipe off particles at the entrance of his nostrils. Do not use cotton-tipped applicators; if they are put into the nostrils, they may push mucous or other particles further up his nose. Your baby sneezes to clear his nasal passages. It is not the sign of a cold.

3. EARS:

- clean the outer ear only. Do not use cotton-tipped applicators to clean his inner ear. It may cause damage by pushing wax further into the ear canal and damage his ear drum;
- nature has provided for wax in his ear to work out by itself.

9. WASHING YOUR BABY'S HAIR

- hair washing is needed usually about twice a week in order to keep the scalp clean and free of cradle cap;

- do not put any kind of oil on your baby's hair as this may cause "cradle cap";
- with your baby wrapped in a towel or receiving blanket, tuck his legs under your arm supporting his head in your hand and his back along your forearm, his legs may be either side of your upper arm or both tucked under your arm (the football hold);
- using a mild soap or baby shampoo, gently but firmly wash your baby's scalp from front to back in a circular motion;
- don't be afraid to go over the soft spots (fontanelles); they aren't that soft;
- hold your baby's head over the water and thoroughly rinse his scalp. Be sure to rinse all the soap off, which can cause irritation;
- pat dry his hair and scalp thoroughly. Be sure to dry behind the ears when drying his hair.

10. BATHING THE REST OF THE BABY

- until baby's cord falls off and/or his circumcision heals he will need to be sponged bathed, but later you can get him wet all over - that's the time for tub bathing;
- rinse washcloth, lightly soap it, uncover the upper portion of his body;
- wash the neck, paying special attention to creases around his neck;
- wash his chest, shoulders, armpits, hands and fingers working quickly to avoid chilling;

- rinse washcloth and wipe over washed areas repeatedly to remove all soap, which can cause irritation on drying;
- pat dry with towel. Ensure creases of neck and armpit are completely dry;
- turn baby over on his tummy and wash his back. Pat dry with towel;
- expose the lower portion of baby's body; cover the upper half with a towel;
- remove diaper. If baby has had a bowel movement, wipe off as much feces as possible with an unsoiled portion of the diaper;
- lightly soap the washcloth. Wipe over the abdomen and around the umbilical cord; work down each leg, back of knees to the foot and between toes. Carefully wash between the skin folds;
- when washing under the arms, knees and in the groin, straighten baby's limb by holding the limb in your hand and exerting gentle pressure on his elbow or knee with your forefinger - if you try to straighten the limb by just pulling, you may injure your baby. Rinse areas well. Each area should be rinsed well and dried;
- most newborns' skin is often dry and peeling within a few days after birth - dry cracks may appear in the wrist and ankle areas. The flakiness and cracks will disappear in a few days and oils and lotions may make it worse by causing a rash.

11. CARE OF THE GENITALS

FEMALE:

- separate the folds of the labia and cleanse it by washing with a downward stroke from front to back, changing area of washcloth with each fold in order to prevent infection;
- cleanse anal area in the same manner, by wiping front to back. Clean crease above rectum well, pat dry with towel. Apply vaseline to the buttocks, groins and labia;
- your daughter may have a small bit of bleeding. Don't be alarmed - this is normal in some girls. It is a false period called psemomenses and is caused by the change in her hormone levels - it will only last a short time.

UNCIRCUMCISED MALE:

- cleanse the folds and wrinkles of the penis well;
- the foreskin is an extended fold of skin which is firmly attached to the head of the penis and normally cannot be pushed back. Therefore the foreskin protects the penis from infection and irritation;
- natural loosening of the foreskin from the glans begins at birth and is not fully retractable until about 2 years of age;
- do not try to pull the foreskin back, forcing it back at this time may harm your baby's penis causing pain, bleeding and possible scarring and infection;
- you will notice a whitish secretion under the foreskin - this is called smegma;

- don't be concerned - this is a normal body secretion;
- the penis is easily irritated by urine, stool and diapers, so frequent washing of the genital area is important;
- wash, rinse, and dry your baby's penis along with the rest of his bottom at every diaper change and during daily bath;

IT IS IMPORTANT TO REPORT TO YOUR DOCTOR AT ONCE IF:

- there is ballooning of the foreskin when your baby passes urine;
- if he is dribbling when he passes urine;
- if there is blood in the urine;
- if there is any discharge from his penis.

CIRCUMCISED MALE:

- if your son has been circumcised, you will need to be careful not to irritate the circumcised area;
- carefully clean any feces from the circumcised area. Cleanse the rest of the genitalia, rinse twice and pat dry;
- wash over the perineum front to back, and then wipe the anus, and between the fold of the buttocks. Pat dry with the towel;
- apply a liberal amount of vaseline around the head of the penis for 2-3 days to prevent it from sticking to his diaper.

IF THE CIRCUMCISED AREA STICKS TO THE DIAPER, DO NOT PULL THE DIAPER OFF. SOAK IT OFF.

YOU WILL NOTICE A WHITISH, YELLOW AREA AROUND THE HEAD OF THE PENIS, THIS IS NORMAL AND NOT AN INFECTION:

- this will be present for about 2-3 days, and should not be removed;
- the diaper should be loosely fastened for 2-3 days because the glands remain tender for this length of time;
- it will take 5-10 days to heal;

12. CORD CARE

- your baby's cord will fall off in about 10 days;
- until that time, it should be cleansed at least once daily with rubbing alcohol; you can buy a small bottle at the drug store;
- the purpose of cord care is to keep the umbilical stump clean, dry and free from infection;
- if the cord is moist it should be cleaned every time you change your baby;
- to clean the cord, lift the stump gently and with an alcohol soaked Q tip, go around the base of the cord. Do not squeeze alcohol on the base;
- continue cleaning the stump as long as it is moist;
- a small amount of pink or brown discharge is normal up until the cord falls off and for a short time afterwards;
- if the stump appears reddened or irritated, continues to bleed or there is a foul discharge or odour, contact your doctor;

- fold baby's diaper so it is not over cord until it is healed and dry.

13. DIAPERING YOUR BABY

- there are two kinds of diapers and they offer you three choices; disposable diapers that are made of cellulose material with a plastic outer layer; cloth diapers that you launder yourself, and diaper service diapers;
- whichever you use, change baby as often as he is wet or dirty - don't try to save diapers - your baby's skin is very delicate and he will end up with a sore bottom;
- if you choose disposable diapers, you have to be more vigilant about whether your baby is wet or not;
- these diapers with the protective plastic outer lining and their absorbent middle lining make wetness harder to spot;
- clean baby's buttocks and genitals gently as indicated during baby's bath and apply a small amount of vaseline to prevent diaper rash.

14. DIAPER RASH

- diaper rash often begins as a mild redness left untreated, without adequate cleansing and care, it becomes inflamed and infected, often resulting in extreme damage with pustules, sores, and skin breakdown;
- if your baby is wet only, wash the genital area with lukewarm water and pat dry thoroughly. If he has had a bowel movement, wash him with soap and lukewarm water and pat dry.

Apply a zinc oxide based ointment which will form a protective water repellent barrier on the skin;

- exposure to air is one of the best treatments for diaper rash, so leave his diaper off as much as possible;
- if diaper rash persists, consult your doctor.

15. DRESSING YOUR BABY

- your baby needs very little clothing;
- warm weather or excessive clothing may cause your baby to develop prickly heat on his face, neck, or wherever his skin surface touches;
- when you first take your baby outside, judge how to dress the baby by how you feel yourself. Although baby's skin is more sensitive than yours, he responds to temperature about the same way you do. If you feel comfortable in a sweater, don't wrap your baby in three blankets;
- when dressing your baby, take time and be gentle, see that his limbs are not strained getting into a sleeve or legging. It is helpful when putting on a shirt or gown to reach through the sleeve with your fingers and pull baby's hand through;
- make sure your baby's clothes have enough room so he can move his hands and legs freely;
- always support your baby's head and back with your arm when dressing him, as he can't do it himself.

16. NAIL CARE

- you may cut your baby's nails by using a pair of baby scissors or nail clippers. This is best done when he is asleep;
- cut his nails straight across and not too close to the skin to prevent cutting his skin;
- if baby is scratching himself, you may cover his hands with a pair of baby socks, mitts or his gown or sleeper.

17. WRAPPING YOUR BABY

- most newborn babies feel more secure if they are well wrapped. As your baby gets older you will find he would probably prefer more room to kick and move his arms around.

18. HANDLING YOUR BABY

- although small, babies are not as fragile as they sometimes seem. They should be handled gently of course, but firm, smooth handling will help them feel secure;
- there are no right ways of turning, lifting or holding your baby, but several points should be kept in mind:
 1. His head and buttocks need to be supported;
 2. Babies are wiggly and can push themselves out of your grasp;
 3. It is easier to pick up a baby from the supine position than from the side-lying or prone position;

4. A suggested way to lift your baby is to place one hand under his neck to support his head and shoulders and the other hand under his buttocks to grasp the opposite thigh. You can then lift the baby to a holding position or move him from one place to another.

- a useful position for holding or carrying your baby is the football hold.

19. TAKING YOUR BABY'S TEMPERATURE

- many occasions will arise when you will want to take your baby's temperature
- take baby's temperature if he is fretful, warm or shows any sign of illness;
- take baby's temperature rectally with a rectal thermometer;
- for easy insertion lubricate the thermometer with petroleum jelly;
- if your baby's temperature is over 100.1° F (37.8° C) call your doctor.

APPENDIX H**M.H.T.V.****THE OBSTETRICS PATIENT EDUCATION CHANNEL****Ch. 35**

Program guide effective July 25, 1994

0600, 1000, 1400, 1800, 2200	Breastfeeding with Pleasure
0630, 1030, 1430, 1830, 2230	Infant Feeding
0642, 1042, 1442, 1842, 2242	New Baby Care
0700, 1100, 1500, 1900, 2300	Bath Time
0718, 1118, 1518, 1918, 2318	New Mother Care
0743, 1143, 1543, 1943, 2343	A World Beyond Your Arms Pt. 1
0800, 1200, 1600, 2000, 0000	Infant Crying: The first six months
0830, 1230, 1630, 2030, 0030	Growing into Parenthood
0900, 1300, 1700, 2100, 0100	Infant Safety
0907, 1307, 1707, 2107, 0107	The Circumcision Question
0923, 1323, 1723, 2123, 0123	A Picture of Health: A Guide to Post Partum Fitness

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