

NURSING PAPERS PERSPECTIVES EN NURSING

Comparative Theories of the Expanded Role and Implications for Nursing Practice

Evaluation du confort et de la satisfaction des clients suite à un rogramme d'enseignement préopératoire

Faculty Development of Assessment Skills

Motor Skill Acquisition in Nursing

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Contents — Table des Matières

Comparative Theories of the Expanded Role in	
Nursing and Implications for Nursing Practice:	
A Working Paper, by Moyra Allen	38
Sommaire — Mise en parallèle de théories sur l'amplification	
de la fonction du nursing et leurs répercussions quant	
à la pratique infirmière	44
Evaluation du confort et de la satisfaction des clients	
suite à un programme d'enseignement pré-opératoire,	
	46
Abstract — Evaluation of Clients' Comfort and	
Satisfaction Following Pre-operative Teaching	54
Faculty Development of Assessment Skills, by Nora I. Parker	56
Sommaire — Perfectionnement des professeurs	
en matière d'évaluation de la condition physique du client	67
Motor Skill Acquisition in Nursing, by	
Ramonde Hanson	68
Sommaire — L'acquisition de l'habileté	
motrice en nursing	76

COMPARATIVE THEORIES OF THE EXPANDED ROLE IN NURSING AND IMPLICATIONS FOR NURSING PRACTICE: A WORKING PAPER

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During recent years in the development of health services in Canada and the United States, much emphasis has been placed on the "expanding role" of the nurse. The nature of this expansion seems to take on different characteristics depending upon which health professionals instigate the role innovation and what their views of nursing are.

The Research Unit in Nursing and Health Care at McGill is studying nursing as it is carried out in several settings where different perceptions of an expanded nursing role are being implemented. A basic assumption, developed in the paper that follows, is that this expansion is perceived in one of two ways — as a replacement function or as a complemental function, relative to the knowledge and skills of other health professionals, e.g. the physician. For each approach, characteristic notions of health and nursing practice are described. The research is directed towards demonstrating that differing approaches to nursing yield differing outcomes for individuals/families. This working paper presents the theoretical underpinnings of our ongoing research project.

APPROACHES TO AN EXPANDED NURSING ROLE

Physicians concerned with the diagnosis and treatment of illness and the prevention of disease perceive the development of nursing as an expansion into the field of medicine, that is incorporating a portion of the doctor's knowledge and skills. This role is termed the assistant-to-the-physician function; in outlying areas it approaches a complete replacement function. Building on either diploma or baccalaureate basic preparation, the doctor assumes, at least initially, a major share of the instruction in preparing nurses for this type of expanded role. Nurse practitioner practice in primary care settings most closely approximates this version of the expanded function of nursing.

Nurses, on the other hand, particularly those in university settings where philosophies of nursing are being rationalized, tend to perceive the expansion of nursing in one of two ways.

First, the expansion is within the realm of medical knowledge and associated skills are required for the treatment and care of those who are ill, both acute and chronic. This role shares most of the characteristics of the replacement function, as the expansion is based on increasing the medical knowledge and skills of the nurse so that her understanding of the pathological processes, diagnosis and treatment closely parallel that of the medical person. Although the medical aspects are favored in expanding the role in the direction of replacement, nursing has attempted to attend also to the psychological and social components which prevail in each particular illness situation. This role is played by persons with baccalaureate or master's preparation where the program emphasis has been on specialized preparation in nursing, that is, medical, psychiatric, community health, geriatrics. It can be found in acute care settings as well as in settings outside the hospital, such as solo practice or group practice with physicians.

Second, the expanded role for nursing is being enacted in primary care settings where emphasis is on the development and maintenance of family health. Here nursing is concerned over time with the family unit, with everyday health practices at the levels of both the individual and the family, with healthy ways of dealing, or coping with life situations and problems, with family health given a long term health problem of a family member, and with follow-up when family members are involved with other health professionals. This expansion of the nurse's role is viewed as complemental in that it does not replace that of other health professionals, but adds another dimension to health care service. It is an expansion of nursing into areas of need which are unmet and unfulfilled at this time; it is also an expansion of the core of what nursing basically is. Knowledge for the complemental function is found, in particular, in the study of the humanities and social sciences. Skills to perform this function are derived from the ability to be responsive to the individual/family both in perception and assessment and in planning and practice. Generic programs in nursing at the baccalaureate level which include a science base, both biological and social, can prepare the individual for this type of expanded function. Preparation at the master's level is required if the nurse is to acquire greater expertise.

The following paper describes the theoretical base for each type of expanded function, replacement and complemental, one an expansion into medicine, the other an expansion of the substance of nursing. These variations in perception of nursing were noted in earlier writings of the author (1971, 1977).

VIEWS OF HEALTH AND IMPLICATIONS FOR NURSING PRACTICE

HEALTH AND THE REPLACEMENT FUNCTION

Health is freedom from superimposed or unnatural influences. Health is seen as the pristine state pre-existing disorder or disease, or as the newly achieved state resulting from the eradication of the superimposed disorder. (Blum 1974:78).

This notion of health has provided the basis for developing a medical science and is, therefore, evident in nursing activities serving the *replacement* function. It requires a form of health care in which the goal is to keep people free from disease. The identifying features of a plan to achieve this goal are:

- 1. screening procedures and checkups to rule out disease;
- 2. prophylactic measures, such as immunization to prevent specific illnesses;
- 3. "good" health habits to increase resistance to disease, for example: nutrition, elimination, personal hygiene, rest and exercise, work and recreation; and
 - 4. early diagnosis, treatment and rehabilitation.

The individual who implements a health care regime contingent on Blum's definition of health may be identified by the following behaviours. The person practises "good" health habits and institutes reliable measures to prevent disease. He is concerned with illness and looks for reassurance that he is not ill. He is informed and knowledgeable about disease. If sickness does arise he seeks treatment and follows the regime with care and precision. He is a "heavy" utilizer of health services. He views health professionals as having the knowledge to keep him well and he looks for direction to these sources. He tends to adhere to learned ways - health habits and knowledge and, therefore, experiences difficulty in modifying his behaviour to meet changing health concepts as well as his own needs.

In the assistant-to-the-physician role, the physician has a decisive part in determining the tasks nurses will perform in preventive, curative and rehabilitative care. To date, nurses in this role have functioned by screening patients and performing the initial workup of physical examination and medical history. In some situations, this focus is extended to include the standard medical treatment regime for the specific problem as well as the subsequent follow-up.

The function of nursing expands as it moves from the assistant-to-the-physician role to replacement of a major part of the physician's work — assessment, treatment, prevention, rehabilitation, follow-up. For this reason, the replacement function tends to follow the medical

approach, dealing with common problems about which there is a relatively large body of knowledge and for which there are accepted approaches and solutions. To this end, the nurse accumulates a large body of knowledge; she knows what to look for, what to observe and what information to gather; she is skilled at attaching meaning to evidence; and she arrives, once the data are amassed, at a reasonable assessment. The treatment plan follows logically, and long term evaluation relates to the expected outcomes as indicated by the diagnosis.

HEALTH AND THE COMPLEMENTAL FUNCTION

Health is a continuing property, potentially measurable by the individual's ability to rally from insults, whether chemical, physical, infectious, psychological or social. Rallying is measured by completeness and speed. Any insult may have a 'training function' and recovery will often be to a slightly *higher* level of health. The person or body learns something. (Audy 1971).

An exploratory, responsive approach to health care is adopted by those who see health as a characteristic of a functioning life system, including nurses whose practice is described as *complemental*. Health care in this framework concentrates on assisting the individual/family to develop ways of dealing with everyday situations in a health-promoting fashion. It assumes that developing abilities of this nature builds and augments the potential for health of the individual/family. The family gains some control over the minor and major events in their lives. The individual/family learns a way of being healthy which is responsive to situations over time.

This notion of health is identified with the following behaviours in the individual/family. They discuss and share information on common problems, they seek out relevant sources of information and knowledge, and they work out plans of action. Each individual has some input into the situation if it is relevant to him. The family plan ahead and make long term approaches to situations; there are few crises. They use health professionals judiciously, learning to rely on their own judgment and resources in most situations. They approach the professional with relevant and organized information and with some assessment and plan, which they seek to discuss and work out with the professional. They look for outcomes from the plan as feedback and make use of it in further planning. They wish to be healthy and pursue this goal by fashioning their approach to the needs of the situation, thereby learning more about how to achieve health as they go along.

The expanded role of the nurse in this context derives from a complemental function, a function in addition to that provided by

other professionals. It is an expansion of the core attributes and tasks of nursing into problem areas where health services remain in an inchoate state. A major gap is to be filled in services directed toward family health: assistance in developing individual/family practices which have a positive benefit for health at the levels of both the individual and the family; guidance in the growth and development of children so that they learn constructive health practices; and assistance to families in coping with chronic illness and other long term problems in a healthful fashion. To these ends, nursing practice develops an exploratory and developmental approach. Emphasis is placed on the assessment phase with the individual/family as a primary source of information, on strengthening individual/family potential as the major component of a plan of action, and on gathering evidence of individual/family responses as a basis for further planning and development.

TWO CHARACTERISTIC APPROACHES TO NURSING

The above conceptions of nursing practice underscore a study of the performance of nurses in primary care settings. Initial investigation identified certain aspects of practice as critical to the approach taken by the nurse. These distinctions between *replacement* and *complemental* were particularly marked at seven points:

REPLACEMENT FUNCTION COMPLEMENTAL FUNCTION 1. Problem — What is the focus of the nurse in a particular individual/family situation?

Problem is perceived as *illness* — basically medical conditions involved in the individual or family, that is, any disease, including diagnosed psychiatric illness, and the etiology, pathology, symptomatology, diagnosis, treatment, prevention, etc.

Focus is on the *health* aspect, that is, situations related to the individual/family's coping with either a medical condition of the individual/family or with their accommodation to the events of daily living, including, both customary situations and unusual ones (crises).

2. Size of concern. What is the size of the unit (persons involved) within which the nurse perceives the problem to

Problem is described as a phenomenon of the *individual*; it may be assessed at this level and/or as it affects the family and individuals therein.

Problem is described as a phenomenon of the family; it may be assessed at this level and/or as it affects individuals or groups of individuals therein.

3. Perspective. What is the extent and complexity of the problem as perceived by the nurse?

Problem is viewed as a *closed* system, with a beginning and an end, isolated from other happenings and limited in time, that is, *episodic*.

Problem is viewed as an *open* system, which develops, changes, influences and is influenced by other life events; it is seen over time (long term).

4. Assessment. What sources of information and knowledge does the nurse draw upon to identify the problem of the individual/family?

Nurse uses existing knowledge and experience to define the situation for her; relying on the logical structure of diagnosis to guide her *a priori* notions of what information and evidence to obtain and factors to relate.

Nurse observes and gathers information from the individual/family, seeks other sources for related information (library, other professionals, etc.) and brings her own knowledge and experience to bear on the problem; working in an exploratory fashion, she seeks to rationalize the evidence from these sources within the most probable explanatory framework.

5. Plan of care. Upon which attributes within the individual/family does the nurse establish the plan of care?

Nurse bases her plan on the lacks and failures which underly the person's problem. The nurse recognizes and utilizes strengths and positive forces (potential) in the individual/family situation as a basis for action.

6. Time frame. How are interventions for the individual/family timed?

The nurse "zooms in" with the concrete aspects of the plan in a precise and orderly fashion.

Implementation of the plan is characterized by a "wait" period directed towards achieving the best "fit" of action to the individual/family situation.

7. Evaluation. What is the nurse's approach in identifying outcomes of the plan as feedback for further assessment and planning?

The nurse assesses the extent to which the *objectives* of the plan have been achieved, noting discrepancies between the individual's behaviour and expected outcomes. Further planning to remedy deviations is based upon strengthening the plan and reinforcing its methods.

The nurse notes the individual/family responses to the plan of care and fashions the plan further on these outcomes. Objectives and purpose are achieved as outcomes become visible.

In summary, we have described some dimensions of nursing practice. Preliminary investigation of data garnered from observations and nursing records indicates that nurses implementing the complemental type of expanded function of nursing differ on these dimensions from nurses implementing the replacement type of expanded function. In addition, our present hypothesis suggests that these two approaches to nursing have differential outcomes for individuals and families and require differing sets of team relationships to be viable. This hypothesis is being tested in a comparative study involving three primary care settings each located within a large hospital in one urban setting.

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Mise en parallèle de théories sur l'amplification de la fonction du nursing et leurs répercussions quant à la pratique infirmière

Le nursing, dans son évolution, est considéré soit comme un prolongement dans le domaine de la médecine, c.-à.-d. comme assurant un rôle d'assistant ou de substitut du médecin, ou encore comme un élargissement dans un domaine des services de santé pour faire le pont avec les divers services. Ici il s'agit d'un rôle complémentaire par rapport à celui des autres professionnels de la santé. La première approche demande des connaissances et des compétences médicales supplémentaires, alors que la seconde favorise une amplification de la fonction essentielle du nursing. Ces deux perspectives caractéristiques quant aux nouveaux rôles du nursing se distinguent d'après les dimensions suivantes: type de problème, envergure de la difficulté, perspective, moyens d'évaluation de la situation, base de la planification des soins, délais, et modalité d'évaluation. L'étude considère que la pratique du nursing peut être distinguée selon ces dimensions et l'hypothèse suppose que ces deux approches du nursing provoquent des résultats différents pour les sujets et pour les familles; de plus, chaque approche, pour être viable, requiert des relations d'équipe différentes. L'hypothèse est à l'étude dans le cadre d'une recherche comparative dans trois milieux de soins primaires.

Evaluation du confort et de la satisfaction des clients suite à un programme d'enseignement préopératoire

SUZANNE KEROUAC ET FABIENNE FORTIN*

Résultats d'une étude expérimentale

Au cours de l'année 1974, une étude expérimentale a été effectuée en vue d'évaluer les effets d'une intervention de nursing. Cette intervention consistait en un programme d'enseignement préopératoire offert à des clients de chirurgie élective (PEPCE**), lors de la préadmission. Le programme (PEPCE) a été développé, administré et évalué par des infirmières. L'ensemble de l'étude effectuée en vue d'évaluer le programme d'enseignement PEPCE a été décrit et publié ailleurs (Fortin et Kérouac 1974, 1976, 1977; Kérouac 1974). Afin de favoriser la compréhension de cet article, la variable indépendante, en l'occurrence le programme d'enseignement préopératoire, est expliquée brièvement à partir de ses caractéristiques les plus importantes.

La variable indépendante: le programme d'enseignement préopératoire

Le but du PEPCE est d'aider l'opéré à se rétablir le plus facilement possible après l'intervention chirurgicale, afin de hâter son retour aux activités habituelles. Il s'agit d'un programme d'enseignement structuré présenté à des groupes de clients à des moments prévus. Tel que mentionné plus haut, le PEPCE est offert à des clients de chirurgie élective, lors de leur pré-admission.

La pré-admission a lieu entre deux et trois semaines avant l'intervention chirurgicale. C'est le moment où le client se rend à l'hôpital pour y subir des tests de laboratoire, des examens de radiologie et compléter certaines formules nécessaires à son admission. L'infirmière assignée à l'enseignement s'adresse à des groupes dont le nombre varie entre trois et six clients. La participation des sujets est favorisée par une ambiance informelle. Chaque séance dure environ soixante-dix minutes et comprend:

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^{**} Programme d'enseignement préopératoire dispensé à des patients de chirurgie élective

- 1) des instructions relatives à la préparation opératoire
- la pratique d'exercices respiratoires et musculaires à la suite de démonstrations de l'infirmière
- 3) des indications au sujet des comportements spécifiques à la condition d'opéré
- 4) des suggestions en vue d'augmenter le confort lors de la phase post-opératoire
- 5) des conseils concernant la collaboration des clients aux soins. Une brochure décrivant les techniques des exercices enseignés est remise à chaque participant. Ainsi, celui-ci est invité à l'utiliser pour pratiquer les exercices à domicile, avant l'intervention chirurgicale.

Justification du choix des variables "Confort et Satisfaction des clients"

Afin d'évaluer les effets du programme, certains résultats finals (outcomes) ont été choisis à titre de variables dépendantes. Parmi ces résultats, la capacité physique fonctionnelle des clients à la suite de l'intervention chirurgicale a constitué la variable la plus importante. Toutefois, d'autres effets du programme ont aussi été recherchés (Fortin et Kérouac 1974). Par exemple, les effets de l'interaction entre les clients qui reçoivent les soins et les professionnels qui dispensent ces soins et services ont été d'un grand intérêt pour nous. Les variables confort et satisfaction rapportées ici ont donc été étudiées afin de déterminer la réaction des clients face aux initiatives d'un groupe de professionnels de la santé en vue de répondre à certains besoins humains au cours d'une période de stress.

Etzioni rapporte qu'au sein d'une organisation, les services professionnels régis par une administration sont isolés des pressions directes exercées par le client. Selon cet auteur, l'isolement entre contrôle et consommation repose sur une idéologie partagée par différents secteurs de la société: "ceux qui dirigent le service sont mieux placés que le consommateur pour juger de ce qui lui convient...". Bien que cet isolement entre contrôle et consommation ait jusqu'à un certain niveau sa raison d'être, il demeure souhaitable que se créent certains liens entre les deux. Ainsi, sans laisser au consommateur l'entière responsabilité du contrôle, des communications peuvent être établies en vue de permettre à ce dernier d'influencer celui qui détient le pouvoir de contrôle (1964: 96-98).

Les écrits fournissent des indices qui démontrent bien l'influence de cette philosophie. En ce qui a trait au domaine de la santé, des auteurs se sont penchés sur le caractère des réponses physiologiques et psychologiques des clients par rapport aux soins reçus. Par exemple, Brodt et Anderson (1967) ont développé et validé un instrument de mesure constitué de onze critères en vue d'évaluer le bien-être des clients. Dans une étude effectuée auprès de sujets atteints d'ulcères peptiques, Putt (1970) s'est préoccupée des effets d'un enseignement sur le confort des sujets et la compréhension de certains aspects de leur maladie. Shapiro (1972) discute la signification et l'importance de l'enseignement aux clients par rapport à leur satisfaction. Dans un article décrivant les droits du consommateur dans le système de santé, Quinn et Somers (1974) appuient sur la nécessité de faire participer le consommateur au processus administratif, c'est-à-dire à la prise de décision. Ainsi, il est suggéré que le client donne son opinion quant à la planification et au contrôle des soins.

Ces écrits nous ont suggéré l'importance d'évaluer le point de vue du client en rapport avec l'expérimentation d'un enseignement préopératoire. Tel que mentionné plus tôt, le but poursuivi lors du développement du programme était d'aider l'opéré à se rétablir le plus facilement et le plus rapidement possible après l'intervention chirurgicale, afin de hâter son retour aux activités habituelles. L'influence des auteurs nous a par la suite incitées à poser certaines questions : Favoriser le rétablissement de l'opéré contribue-t-il à augmenter son confort? Ainsi, le client qui a reçu l'enseignement présente-t-il un état physiologique caractérisé par l'absence de malaise, de douleur, d'inquiétude par rapport à la maladie et au traitement? Ce but attendu semble-t-il promouvoir la satisfaction du client? En d'autres mots, les perceptions et opinions de ce dernier, quant à ses connaissances au sujet des soins et aux effets de sa participation aux soins, sont-elles meilleures lorsqu'il a reçu l'enseignement préopératoire? Le client qui a reçu cet enseignement est-il au moins aussi satisfait que celui qui ne l'a pas reçu?

Expérimentation du programme d'enseignement préopératoire

L'étude a été effectue dans un hôpital francophone de Montréal. Soixante-neuf sujets (hommes et femmes) ont fait partie de l'étude. Ils ont été sélectionnés à partir de critères définis, tels que l'âge, le type d'intervention chirurgicale, le genre d'anesthésie, l'état mental. Les clients atteints d'impotence fonctionnelle des membres inférieurs ou d'une maladie grave déclarée (diabète, emphysème pulmonaire, maladie coronarienne) ont été exclus. Les sujets ont été répartis de façon aléatoire, soit dans le groupe expérimental (ont reçu l'enseignement préopératoire) ou soit dans le groupe de contrôle (n'ont pas reçu l'enseignement préopératoire). Trente-sept clients ont constitué le groupe expérimental alors que trente-deux ont formé le groupe de contrôle.

TABLEAU 1 — CONFORT DES CLIENTS (QUESTIONS 2, 3, 4, 5 et 6)

			Groupe expérimental N=36*	sérimental 36*				Groupe de contrôle N=32	contrôle	
	Non	Oui	Indécis ou ne sait pas	Ne s'applique pas	Total	Non	Oui	Indécis ou ne sait pas	Ne s'applique pas	Total
Lors du réveil, après l'interven- tion chirurgicale:										
Inquiétudes perçues en rapport avec: (a) la douleur	32	ы			36	88	4			32
**(b) les nausées	23	1	-	11	36	17	7		000	32
(c) le fait que l'infirmière vérifie souvent la)	}
pression artérielle	32	3	1		36	53	8			32
(d) la plaie opératoire	31	4	-		36	24	∞			32
(e) la vue des tubes	35	1			36	56	3			32
Ont ressenti assez de confort le lendemain de l'intervention chirurgicale pour:							8			
**(f) marcher	12	21	8		36	25	7			32
**(g) faire la toilette	11	52			36	25	7			32
(h) s'habiller	11	25			36	56	9			32
(i) Manifestent de l'inconfort, **la veille ou le jour du départ de l'hôpital.	12	24	**		36	4	82			32

*Une cliente du groupe expérimental a refusé de répondre à ce questionnaire. **La signification statistique est indiquée dans le texte.

En vue d'apprécier certaines caractéristiques du confort et de la satisfaction des sujets, nous avons développé un questionnaire de neuf items. D'une part, cinq items se rapportent au confort défini relativement aux malaises, à la douleur et aux inquiétudes des opérés par rapport aux traitements et à la maladie. D'autre part, quatre items permettent d'observer la satisfaction, c'est-à-dire l'influence que peut avoir l'enseignement sur la perception des opérés envers les soins reçus. Le questionnaire a été administré aux opérés la veille ou le jour de leur sortie de l'hôpital.

Résultats

Les résultats ont été présentés selon deux aspects. D'une part, le tableau 1 illustre les résultats relatifs au confort des sujets. La plupart des questions se rapportant aux perceptions des clients en ce qui a trait au confort ont démontré des différences en faveur du groupe expérimental. Ces résultats sont d'ailleurs consistants avec les données obtenues en rapport avec la capacité physique fonctionnelle. Du point de vue statistique, des différences significatives ont été obtenues au moyen du chi carré pour certaines caractéristiques du confort. Ainsi, les sujets du groupe expérimentale ont présenté moins d'inquiétude que ceux du groupe de contrôle quant aux nausées à la suite de l'intervention chirurgicale (x21=5.390; p=.020). Ils ont manifesté une plus grande facilité pour marcher (x21=11.555; p=.00006), faire la toilette ($x^2_1=15.387$; p=.00008), s'habiller (x²₁=17.551; p=.00002) dès le lendemain de l'intervention chirurgicale. De plus, les sujets du groupe expérimental ont ressenti plus de confort que les sujets du groupe de contrôle la veille ou le jour du départ de l'hôpital (x21=4.086; p=.043). Les résultats obtenus quant aux autres caractéristiques n'ont pas démontré de différence significative entre les deux groupes.

Le tableau 2 indique d'autre part, des résultats se rapportant à la satisfaction. Les sujets du groupe expérimental ont été plus satisfaits en rapport avec certains aspects spécifiques des soins. Ainsi des résultats significatifs au point de vue statistique ont été obtenus au moyen du chi carré concernant les connaissances des clients par rapport à la préparation opératoire (x²₁=25.565;p=.0001); à la possibilité de poser des questions au sujet de l'hospitalisation (x²₁=25.573; p=.0001); à l'intérêt pour un programme d'information advenant une hospitalisation ultérieure (x²₁=9.571;p=.0019). Toutefois il n'y a pas eu de différence significative entre les deux groupes d'opérés concernant leur satisfaction envers les soins reçus au cours de l'hospitalisation et leur degré de rétablissement lors du retour à domicile.

TABLEAU 2 — SATISFACTION DES CLIENTS (QUESTIONS 1, 7, 8 et 9)

				Groupe expérimental	érimental 36*				Groupe de Contrôle N=32	Contrôle 32	
		Non	Oui	Indécis ou ne sait pas	Ne s'applique pas	Total	Non	Oui	Indécis ou ne sait pas	Ne s'applique pas	Total
**(a)	**(a) Connaissances des clients concernant la préparation à l'intervention chirurgicale		35	1		36	14	11	7		32
(q)**	**(b) Possibilités pour les clients de poser des questions au sujet de l'intervention chi- rurgicale		32	4		36	13	11	œ		32
**(c)	**(c) Intérêt pour un programme d'information advenant une hospitalisation ultérieure		35	1		36	10	22			32
(p)	(d) Satisfaction envers les soins reçus durant l'hospitalisa- tion	-	35			36	-	25	9		32
(e)	(e) Clients se sentent en bonne voie de rétablissement et prêts à retourner à domicile.	2	31	3		36	2	21	6		32

*Une cliente du groupe expérimental a refusé de répondre à ce questionnaire.

Discussion

Les résultats démontrent que les clients du groupe expérimental ont éprouvé moins d'inquiétude en ce qui a trait aux nausées après l'intervention chirurgicale. Ces sujets peuvent quand même avoir des nausées mais savent mieux comment les contrôler et conserver leur calme. De plus, les sujets qui ont participé à l'enseignement ont ressenti davantage de confort la veille ou le jour du départ de l'hôpital. Notons que 34% des sujets du groupe expérimental ne ressentaient plus d'inconfort à ce moment alors que seulement 12% des sujets du groupe de contrôle se disaient assez à l'aise pour quitter l'hôpital.

Des différences nettement significatives existent entre les deux groupes quant aux connaissances des opérés au sujet de la préparation à l'intervention chirurgicale. Il en est de même pour leur désir de recevoir de l'information et pour leur possibilité de poser des questions au sujet de l'expérience de la maladie. Ainsi, les clients qui ont reçu l'enseignement préopératoire ont appris comment bouger lorsqu'ils sont alités, comment se tourner, se lever et marcher avec une plaie chirurgicale. Ils ont obtenu des réponses quant à certaines préoccupations vis-à-vis la maladie et les traitements. Non seulement les sujets du groupe expérimental ont-ils augmenté leurs connaissances, mais la plupart d'entre eux se sont occupés d'eux-mêmes plus tôt que les sujets du groupe de contrôle, à la suite de l'intervention chirurgicale. Mentionnons par exemple que 60% des sujets du groupe expérimental ont pu marcher le lendemain de l'intervention chirurgicale comparativement à 22% dans le groupe de contrôle. Le même jour, 70% des sujets du groupe expérimental ont pu faire la toilette comparativement à 22% dans le groupe de contrôle. L'existence d'un lien entre la capacité des opérés à devenir indépendants et leur confort peut être envisagée. L'exécution des mouvements et la marche comportent donc des avantages d'ordre physique et psychologique. Un chirurgien américain. Leithauser (1950), a rapporté que des activités musculaires régulières favorisent l'élimination, prédisposent à la détente, préviennent les complications circulatoires et respiratoires, spécialement l'embolie. Il est suggéré que les exercises physiques répétés et le lever précoce contribuent à diminuer la crainte chez l'opéré et l'encouragent à reprendre ses activités habituelles plus tôt.

Tel que mentionné plus haut, certains résultats ne permettent pas d'établir des différences significatives entre les deux groupes: Il en est ainsi, par exemple, pour le peu de variations en ce qui a trait aux perceptions et opinions des clients envers les soins reçus durant l'hospitalisation. Par des réponses positives, les clients désirent-ils faire

plaisir à l'investigatrice? Hésitent-ils à livrer leur véritable perception des soins avant d'avoir quitté le milieu hospitalier? Les mêmes questions posées à domicile quelques jours plus tard apporteraient-elles les mêmes réponses? Toutefois, certains facteurs peuvent influencer les opinions des clients, tels que par exemple les activités précédant la visite de l'investigatrice, le moment de la journée ou encore l'état de fatigue des clients.

Cependant, des données non quantitatives illustrent bien les réactions positives des clients par rapport au programme d'enseignement préopératoire. Ainsi, lors des entrevues, les sujets du groupe expérimental ont remercié pour l'aide fournie grâce à la pratique des exercices musculaires et respiratoires. Plusieurs opérés ont éprouvé une certaine surprise quant à la facilité avec laquelle ils ont été capables d'exécuter des mouvements et de marcher, dès le lendemain de l'intervention chirurgicale. Des commentaires de ce genre ont été entendus: a) "Nous savons comment nous tourner et nous lever. Ensuite, c'est facile de marcher..." b) "A l'aide des exercices respiratoires, j'ai pu contrôler les nausées et parvenir à me détendre..." c) "Je suis très contente d'avoir cessé de fumer deux semaines avant d'être opérée. Je n'ai pas l'intention de reprendre la cigarette car je respire beaucoup mieux!" d) "Grâce à l'enseignement, j'ai pu contrôler la peur que je ressentais au sujet du séjour à l'hôpital. De plus, le fait d'avoir marché facilement dès le lendemain de l'intervention chirurgicale m'a aidée à reprendre confiance en moi." e) une cliente à qui nous avons administré un questionnaire la veille de son départ, s'est exprimée ainsi: "Cela fait deux jours que je me sens capable de retourner chez-moi".

Conclusion

Les résultats obtenus démontrent l'importance de l'étude du confort et de la satisfaction des clients, en rapport avec les soins. Tel qu'il a été mentionné plus tôt, certains facteurs peuvent influencer les opinions et perceptions des consommateurs. Toutefois, à titre de professionnelles de la santé, ne devons-nous pas promouvoir le droit des clients à s'exprimer? Or, l'expression de leur point de vue représente une forme de participation au processus administratif des soins. Ceci ne rejoint-il pas la pensée d'Etzioni (1964) lorsqu'il suggère l'établissement de communications entre le consommateur et les personnes qui détiennent le pouvoir de contrôle? Cependant, une telle philosophie entraîne de nouvelles responsabilités pour les membres de l'équipe de soins et particulièrement pour l'infirmière, étant donné qu'elle consacre beaucoup de temps auprès du client. Par exemple, il est à souhaiter qu'un lien soit créé entre le client et le professionnel

de la santé en vue d'assurer la collecte de l'information. Ce fait entraînerait un double avantage: d'une part, le client pourrait livrer ses perceptions à des personnes impliquées dans l'organisation des soins. D'autre part, un niveau de communication basé sur des critères serait maintenu entre le client et le professionnel de la santé.

Le questionnaire développé au cours de cette recherche peut être suggéré comme point de départ, non seulement en vue de recueillir les perceptions et opinions des clients au sujet de leur confort et de leur satisfaction, mais aussi comme moyen de systématiser ces données et de les interpréter. L'interprétation de l'information recueillie auprès du client pourrait alors constituer un indice précieux pour les personnes impliquées dans le contrôle des soins.

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Evaluation of clients' comfort and satisfaction following pre-operative teaching

An experimental study with random distribution was conducted to assess the effects of a pre-operative teaching program offered to elective surgery clients at the time of pre-admission. The experimental group was given a structured program while control group was subjected to only the usual pre-admission procedures. Following the surgical intervention, various measures of the clients' state of health were made, including functional physical capacity as well as

clients' comfort and satisfaction. The level of functional physical capacity was much superior in the experimental group members.

In order to determine subjects' comfort and satisfaction, a questionnaire was developed to observe the influence of pre-operative teaching in relation to some physiological dimensions of the clients' condition and their perception of the care received. The levels of comfort and satisfaction reported by the experimental group clients paralleled, in general, a high degree of functional physical capacity. Most of the differences between the experimental and control groups were statistically significant. The implications of the results concerning the role of the client in care planning are offered in conclusion.

FACULTY DEVELOPMENT OF ASSESSMENT SKILLS*

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Over the past decade, interest in the contribution that nursing can make to primary health care has mounted. This development has some marked implications for nursing education made explicit in the recommendation of the Report of the Committee on Nurse Practitioners (1972) that "the basic preparation of nurses, both at diploma and university levels, be suitably modified to reflect this broadened concept of nursing" (p. 14).

This recommendation and other developments in health care have resulted in an examination of curricula by various schools of nursing to determine what modifications, if any, are necessary. At the University of Toronto Faculty of Nursing in 1972-73 a sub-committee of the curriculum committee examined in some detail the question of whether the graduates of the basic baccalaureate programme are prepared to perform the functions listed in the Report of the Committee on Nurse Practitioners and whether the instructional objectives suggested in that Report (pp. 37-40) for consideration in the development of programs for the preparation of nurse-practitioners are presently incorporated in the Basic Baccalaureate programme. At that time, there was general agreement that it would be necessary to build in additional content and learning experiences relating to objectives 1 and 2 (history-taking and physical assessment).

In the 1973-74 academic year an ad hoc committee approached this question from another angle. This committee examined the preparation then given in the nurse-practitioner programme at this University in order to make recommendations as to what additional theory and skills might be necessary for the preparation of the baccalaureate to function in a primary care role. The committee considered that, with the exception of additional physical assessment and history taking skills, the preparation given in the basic baccalaureate programme would enable the graduate to function in that role.

Data obtained from a study (Jones and Parker 1973) of the learning needs of baccalaureate students functioning in primary care settings supported the conclusions of the two committees referred to

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above. This conclusion has been reached by other university schools of nursing (Brown 1974, Graham 1974, Logan 1974).

In order to implement the expressed belief of the Faculty that basic preparation for primary care nursing should be at the baccalaureate level, it was evident that curriculum modification would be necessary to provide opportunities for students to achieve objectives relating to physical assessment and history taking. It was apparent, however, that this decision led to several critical questions, namely, how were the skills to be taught and who would teach them.

EXPERIENCE OF OTHER FACULTIES

A review of the literature shows that, although there are a number of references to the inclusion of assessment skills in baccalaureate curricula and articles on the preparation of the nurse for primary care, there is little to indicate what is being or has been done to prepare faculty members to teach the necessary knowledge and skills, or indeed, whether physcicians rather than nursing faculty will teach such skills. In an early reference, Fagin and Goodwin (1972) indicate that the faculty at Lehman College faced this question and unanimously agreed that the faculty themselves would first learn the skills. Further, there was agreement that the planning and clinical learning for faculty would need to be shared with the faculty of the medical school. The details regarding this preparatory stage are not described, but the authors state that it included an "intensive program" requiring a considerable investment of faculty time and that faculty skills must be maintained and improved through continued practice. McGivern (1974), a faculty member at Lehman College, writes that to learn the assessment skills traditionally part of medicine requires instruction from a physician, but reiterates the faculty's position that this medical input should be provided only to faculty. This stand is based on the belief that "we cannot expect students to learn what faculty members do not know". On the other hand, the view that high quality physician-teachers must be involved in the student's learning experiences is expressed by Januska et al. (1974). Such contrasting views can possibly be attributed to the differing thrust of the programmes, as Januska et al. are reporting on the development and initiation of a family nurse practitioner track in a Master's programme. Their rationale includes factors such as preparing the graduate to work closely with physicians and facilitating the acceptance of the family nurse practitioner concept within the medical community. It would seem that these factors would also merit consideration in preparing the undergraduate student to function in a primary care role.

Hagopian and Kilpack (1974) report on steps taken at the University of Rochester to incorporate selected practitioner skills in their programme beginning with the neurological examination in first year. Directors of the medical and paediatric nurse practitioners course taught faculty the skill six weeks before the students were to be taught the same skill. Some of the faculty had the opportunity to practice with physician supervision. The authors state that faculty achieved a "modicum of skill" before beginning to work with students. Emphasis was on the nursing application of the knowledge as opposed to medical diagnosis. Another approach to faculty preparation is noted in an article in which Hayes et al. (1974) report that faculty assumed responsibility for self-development in assessment skills by working in local family practice units.

Although 'acceptance' and 'credibility' are important concerns which will influence decisions as to who is to teach physical assessment skills, there seems to be a fair degree of consensus that nursing faculty should have major responsibility in assisting students to develop such skills (Brown 1974; Faculty of Nursing, The University of New Brunswick, 1974; Logan 1974). The rationale is clearly stated by Graham (1974) and is related to concern that such skills be an integral part of the nursing process and used to enhance nursing care. Thus, the preparation of faculty in these skills becomes a major concern for university faculties. Efforts to provide opportunities for such preparation may be complicated by another factor, that of faculty anxiety in learning such skills. A number of the reports previously cited (Januska; McGivern) comment on the difficulties experienced by teachers in becoming more secure in the area of physical assessment. In contrast, Hagopian and Kilpack report that students approached the new learning with eagerness, "not hampered by rituals nor bound by the barriers of the traditional roles assigned to the nurse and to the doctor".

This is a report of the initial efforts at this Faculty to prepare teaching staff in the area of physical assessment.

A PROGRAMME TO PREPARE FACULTY

In a report of the progress of the educational programme for nurse practitioners at this university (University of Toronto, Faculty of Medicine and Faculty of Nursing, 1974: 12) it was noted that the Faculty of Nursing had already recorded the belief that basic preparation for primary care nursing should be at the baccalaureate level. The application for grant renewal for 1974-75 had therefore proposed that the next phase of the programme would include the preparation of nurse-instructors who would contribute to the inclusion of defined content in baccalaureate programmes (University of

Toronto, Faculty of Medicine and Faculty of Nursing, 1973: 1). The plan presented was to mount a course during the summer of 1974 with a maximum enrollment of 12 students, consisting of faculty from Canadian university schools of nursing, principally University of Toronto. A further specification regarding the programme was that the length would be determined by the content. This content was to be identified by the curriculum committee of the nursing school in consultation with the curriculum sub-committee of the educational programme. It was further stated that "potential candidates will be a major source of input to the planning and that planning will include arrangements for continuing practice."

In keeping with the above statement in the grant application, faculty members who were to take the course and representatives of the faculty curriculum committee met with the educational coordinators of the nurse practitioner programme and two of the physicians who taught in the programme. Following discussion of the purpose of the course, what faculty hoped to gain from it, its length, and so on, the following objectives were developed for the summer course:

- 1. To learn how to take and record a complete history using a problem-oriented approach.
- 2. To learn to assess a patient by means of inspection, percussion, palpation, and auscultation to differentiate normal from abnormal pathology.
- 3. To increase our knowledge of anatomy, physiology, pathophysiology, and etiology, and to apply it to aid in the recognition of the normal as well as certain common health problems.
- 4. To obtain sufficient practice in skills learned during the intensive study period to acquire a degree of confidence in one's judgment.
- 5. To have the opportunity during the academic year to maintain and further develop the acquired skills.

In addition, faculty identified individual learning needs. On the basis of the general objectives and individual interests, the coordinators drew up a tentative programme schedule. A second meeting was then held to review the overall plan and consider further suggestions. Because of constraints on the time of both the staff from the nurse practitioner programme and the faculty who were to take the course, the length was limited to six weeks. At the same time it was recognized that in terms of the stated objectives, a longer period might be preferable. Following these planning meetings, each course participant was provided with an individual timetable which provided for both classroom sessions with the entire group and clinical learning

Figure 1.

QUESTIONNAIRE ITEMS DISTRIBUTED TO COURSE PARTICIPANTS

Faculty of Nursing Course June - July 1974

1. How successful do you think you were during the six week course in meeting the following objectives developed by the group for the course?

Very Moderately Unsuccessful Successful

- To learn how to take and record a complete history using a problem-oriented approach
- b) To learn to assess a patient by means of inspection, percussion, palpation, and auscultation to differentiate normal from abnormal pathology
- c) To increase our knowledge of anatomy, physiology, pathophysiology and etiology and to apply it to aid in the recognition of the normal as well as certain common health problems
- d) To obtain sufficient practice in skills learned during the intensive study period to acquire a degree of confidence in one's judgement.
- 2. If you indicated moderately successful or unsuccessful in answering question #1, please explain why you feel this way.

Objective (a):

Objective (b):

Objective (c):

Objective (d):

experiences in which the numbers varied. One day a week was, in the main, left open to be devoted to individual learning. All course participants were provided with a large amount of study material.

This course with the same objectives and a very similar format was repeated in 1975. One variation was to schedule an open period at the end of the course as a clinical practice period. A variety of settings was chosen for this final period. Eight faculty were enrolled in the 1974 course and 11 in the 1975 period (4 of the total were from other than University of Toronto).

3.	How would you rate the following aspects of the curriculum and what suggestions do you have for improvement?
	(a) Content: good — fair — poor — Suggestions for improvement:
	(b) Learning experiences: i) Teaching methods: good — fair — poor — Suggestions for improvement:
	ii) Study materials: good — fair — poor — Suggestions for improvement:
	iii) Clinical practice: good — fair — poor — Suggestions for improvement:
	(c) Organization of the course: good — fair — poor — Suggestions for improvement:
4.	The final objective developed by the group for the course was "to have the opportunity during the academic year to maintain and further develop the acquired skills".
	a) Do you feel the course has provided you with sufficient skills to be used as a base during on-going practice?
	yes — to a fair extent — no —
	b) What type(s) of on-going experiences during the academic year do you feel would allow you to maintain and further develop the acquired skills?
	If you have other comments about this course or general suggestions that you feel would be helpful in planning a future course of this nature, please indicate below added in 1975:)
6.	Do you think this course would be more beneficial to you if it were spread out over one year?
E	VALUATION

F

On the assumption that the participants in the course had had considerable experience in self-evaluation and in determining their own learning needs, no plans were made for assessing performance at the termination of the course, rather it was decided to attempt to assess whether the participants judged that they had been successful in meeting the defined objectives, how they would rate the course in terms of content, teaching methods, study materials, clinical practice and organization. In support of this approach, it was noted that even

TABLE 1: PARTICIPANTS' PERCEPTIONS OF SUCCESS IN MEETING FOUR COURSE OBJECTIVES

			Objectives		
	a	ь	c	d	Total
Very Successful	3	2	3	1	9
Moderately Successful	11	11	11	12	45
Unsuccessful	_	1		1	2
Total	14	14	14	14	56

prior to the course, students had identified the need for ongoing practice. It was also hoped that ideas for future planning would be presented. In line with these thoughts a questionnaire (Fig. 1) was developed by the programme coordinators and the chairman of the Faculty Curriculum Committee for use in 1974. The same questionnaire with one additional question was used in 1975.

RESULTS

All of the participants in the 1974 course and 6 of those enrolled in 1975 completed the questionnaire. Although responses have been tabulated the most useful aspect of the evaluation may be found in the comments of participating faculty.

ACHIEVEMENTS OF OBJECTIVES

As evident in Table 1, the majority of the participants felt they had been at least moderately successful in meeting the four objectives. The individual who felt she had been unsuccessful in the objective related to the area of physical assessment indicated that she had "gained considerable skill within this objective but to be skilful is going to take time". The person who perceived herself as unsuccessful in objective d, felt that in 6 weeks she had not had sufficient practice to meet this objective and saw the need for continued verification of physical findings by a physician.

The majority of the comments made in response to the second question were concerned with the need for more practice, either during the course or after its completion. Most indicated, in relation to one objective or the other, that more practice could have been built into the course even though the time was limited. The need for ongoing practice, either to maintain or to further develop the acquired skills, was suggested by 8 participants in relation to history-taking and by 11 in relation to physical assessment.

TABLE 2: RATING OF CURRICULUM COMPONENTS

Curriculum		Rating	g	
Component	Good	Fair	Poor	N.A.
Content	11	2		1
Teaching Methods	9	4		1
Study Materials	11	3	_	_
Clinical Practice	14		_	_
Organization	11	1	-	2

EVALUATION OF COURSE CONTENT, LEARNING EXPERIENCES AND ORGANIZATION

The course participants were asked to rate various components of the course and the organization of these components as 'good' 'fair' or 'poor'. Responses are shown in Table 2.

There was a very positive overall response to the course; in particular, 100% of the respondents rated the clinical practice sessions as good. There was no category of "Excellent' included on the questionnaire and some individuals included this adjective in commenting on practice sessions.

Although 11 of the 14 faculty who completed questionnaires rated the study materials as good, all but three people felt the uses to which they were put could have been improved. These comments are related to teaching methods and the content of some classes, as these were apparently a reiteration of the content contained in the study materials. Most felt that prior study of the materials should have been assumed and the class time devoted to clinical illustrations, questions and exploring content at greater depth. Those who felt the study materials were only 'fair' felt they were superficial. Some of the study materials focused on medical management and participants felt such materials were not helpful as the stated objectives did not include 'medical management'.

Suggestions for improving the content of the course included the following:

- 1. Greater depth.
- 2. Concentration on assessment, history-taking.
- 3. Recognition of previous knowledge so that class time is used wisely.
- 4. Less repetition of content.
- 5. Geriatric content.

In relation to teaching methods, the largest number of suggestions was again in relation to the time spent in class repeating content of the handout materials. There seemed to be a consensus that either the

class time could be reduced with practice time increased, or a different use should be made of class time, for example, use of case studies and clinical illustrations. Some mentioned that 'role playing' sessions had been helpful.

1.	More extensive practive in assessing	— 5
2.	Smaller clinical groups	— 3
3.	Use of other students to practice skills	— 3
4.	Increase time for evaluation and sharing experiences	_ 2
5.	Better orientation prior to clinical	
	practice for both students and teachers	-2

Comments were received as well about the use of certain clinical facilities; these would be useful only in relation to this locality and are therefore not included in this report.

ORGANIZATION OF THE COURSE

In response to the question concerning the organization of the course, 11 of the 14 respondents rated the organization as 'good' and 2 did not check any rating but included comments that related to content rather than organization. One participant rated the organization as 'fair' and commented that "An overall plan was not visible, systems were introduced in random order. Scheduling was adequate". Several who rated the organization as 'good' made suggestions for some strengthening; for example, that the organization provide for more practice on each other at the beginning of the course and more practice with validation of findings at the end.

FURTHER COMMENTS AND SUGGESTIONS

The faculty who responded to the opportunity to include other comments, or suggestions that would be helpful in future planning, offered a number of ideas that would appear very worthwhile. These included the following:

- 1. More emphasis on the normal at the beginning of the course before getting into abnormal. (Several suggested that as a means of implementing this idea, the participants might practice on each other).
- 2. Provide problem solving materials with utilization.

3. Emphasize assessment not management.

4. Have students submit reports of histories and physicals done to be evaluated.

In addition to these suggestions, the need for more practice during and following the course was reiterated.

Some of the participant faculty took this as an opportunity to express their appreciation of the course, and the helpful attitudes of the coordinators and teachers. Similar positive comments were made at some point in responding to the questionnaire by all who completed it. Generally, the course was seen as a very valuable learning experience.

SUMMARY

The final objective developed by the faculty for the course was "to have the opportunity during the academic year to maintain and further develop the acquired skills". There appears to be an assumption inherent in this objective that the skills will not be acquired during the course; however, faculty felt strongly that on-going practice would be necessary to maintain skills acquired. In view of this, the participants were asked whether the course had provided them with a base for on-going practice and what types of experiences they felt would be necessary to maintain and further develop acquired skills.

Of the 14 respondents, 9 felt the course had provided a base for on-going practice, and several added that it had provided an "excellent base for further learning". The remainder responded with "to a fair extent". In 1975, an additional question asked whether the course would be more beneficial if spread over a year. For a variety of reasons, most felt this would be a disadvantage and saw the need for a concentrated course like the summer course provided through the nurse-practitioner project.

With respect to the type of on-going experiences this group saw as necessary, a large majority (11) stated they needed continued practice using history-taking and physical assessment skills, interpreting findings, and having validation by a physician. Of these, some mentioned the setting in which this should take place — family practice and community clinic (5) or hospital (2) — while others felt the setting was not important but stated they would like more practice with the "normal". Where there was mention of time, it was felt that practice would need to be on a regular basis, preferably once a week.

Because of the stated need expressed in the fifth objective of the course and in the responses to this last question, in the 1974-75 academic year arrangements were made by the Faculty to have a physician conduct weekly sessions with the group that took the summer

course as well as some additional faculty members. A similar arrangement was made for the 1975 group with weekly sessions involving practice in the skills. In many of these practice sessions, faculty worked in pairs, examining each other, with the physician validating their findings. This approach evoked considerable anxiety initially which had to be worked through before the sessions could proceed smoothly. Of the original group of faculty who are still on staff, 4 have also made arrangements for continued practice on their own.

In the application for grant renewal, the project was to be considered successful "if there is evidence of progress in introduction of required content into university nursing education; this will include such evidence as extent of planning, teaching included, continuing practice of course graduates, etc." (University of Toronto 1973). In addition to contributing to the teaching of physical assessment skills in the undergraduate programme, faculty who participated in the summer course also developed a plan for the integration of the skills in the programme thus contributing to planned curriculum change. The plan as developed by that group was implemented in the first year of the Basic Baccalaureate Course. This has implications for succeeding years so that on-going revision will result. Thus on the basis of both teaching and curriculum modification, the project has met the criteria for success.

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Perfectionnement des professeurs en matière d'évaluation de la condition physique du client

L'évolution des services de santé a rendu nécessaire un ré-examen des programme des écoles de nursing universitaires: à savoir, quelles sont les modifications qu'il faudrait apporter pour bien préparer les diplômés à exercer dans les milieux de soins primaires. A l'école de nursing de l'université de Toronto, il était manifeste que le programme devait être modifié si l'on voulait que les étudiants puissent atteindre des objectifs comme l'évaluation de l'état physique et l'historique des antécédents. Le présent article fait rapport du travail initial qui a eu lieu à cette faculté en vue de préparer les professeurs à enseigner ces compétences supplémentaires.

Dix-neuf professeurs, dont quatre appartenant à d'autres universités, ont participé à deux brefs cours d'été. L'évaluation a indiqué que ces cours pouvaient être considérés comme une réussite dans le sens où ils constituaient une base. La majorité des participants, toutefois, ont été d'avis que la pratique suivie de ces compétences était essentielle. Les participants ont aussi élaboré un plan pour les intégrer au programme de 1er cycle.

MOTOR SKILL ACQUISITION IN NURSING

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A survey of nursing education has revealed that motor skills in nursing have been taught in one of two ways. In the first approach, each nursing motor skill is taught as an entity with little regard to the underlying principles. The second approach is completely opposite to the first. The learning focus is on the principles involved in each technique. The student must deduce how a technique is to be performed.

Both of these approaches have limitations — shortcomings that nurse educators are quick to point out. In both learning situations, the student is so preoccupied with the mastery of the motor skill that little time or energy is left to develop intellectual nursing skills. This limitation has led nursing educators to re-evaluate how motor skills are learned.

A review of the learning theories shows research has been done on the acquisition of motor skills. This review suggests the cybernetic theory of learning is most adaptable to the teaching of nursing skills.

This paper will examine the cybernetic theory of learning and its application in the nursing setting. First, a motor skill will be defined, the characteristics of a skilled act will be discussed and the stages in the learning of a skill will be examined. Implication for nursing education will follow.

DEFINITION

The word skill has several usages. When the emphasis is on the activity or the achievement, such as driving a car or preparing a dressing, skill is defined as "a particular, more or less complex activity which requires a period of deliberate training and practice to be performed and which often has some recognized useful function" (Borger and Seabourne 1966: 127). This definition stresses the approach that the skill has been achieved through learning.

Another use of the word skill places emphasis on the level of performance of the individual, rather than on the characteristics of the task. In this context, a person is referred to as a skilled individual, such as a skilled operating room nurse or a skilled golfer. However, an operational definition of the word skill is often more useful because it examines the mechanisms involved. Fitts (1964: 244) offers this excellent operational definition of a skill:

... one in which the receptor-effector-feedback processes are highly organized, both spacially and temporally. The central problem for the study of skill is how such organization and patterning takes place or comes about.

This definition stresses the integration of the sequence of action during the performance of a skill and emphasizes the constant use of the information received from the senses. It is obvious that the operational definition of a skill is the most useful in terms of learning theories.

CHARACTERISTICS OF A SKILLED ACT

Four basic elements constitute a skilled performance. A skilled act (1) involves a chain of motor responses, (2) requires the coordination of perceptual input with these motor responses, (3) involves an hierarchy of responses, and (4) depends heavily on feedback. Each of these elements will be discussed briefly.

In a highly developed motor skill, a chain of responses is established where one response serves as a stimulus for the next. This creates a chain of responses. Tying a tie is an example of this situation.

Secondly, in a motor skill, the perceptual input is coordinated with the motor responses. The way an individual perceives a situation will determine the action she initiates. This is readily seen in sports activities such as baseball or hockey.

Thirdly, any complex task can be broken down into a series of subroutines. These subroutines can be taught separately and later reorganized to form the integrated pattern of the complex task, governed by the over-all plan. Subroutines are fixed and run off automatically once the sequence is established. The subroutines will be repeated over and over again unless they are changed by the over-all plan. Fitts and Posner (1967:57) suggest that adults learn new skills by reorganizing or repatterning existing subroutines. Thus it becomes imperative that children be exposed to a wide variety of motor experiences in their early years to insure an adequate level of subroutines.

Temporal patterning reflects the capacity of the respondant to integrate the subroutines into a smooth complex movement. This quality of a complex skill refers to the time that has elapsed between the execution of each subroutine, rather than the total time needed to complete a movement.

Finally, feedback is one of the most important characteristic of a skilled performance. Feedback can be classified as (a) intrinsic and (b) extrinsic.

Intrinsic feedback "refers to the fact that responses produce stimuli which have consequences for subsequent responses" (Ellis 1972:11-12 and 194).

Extrinsic feedback is the information the learner receives about his performance from a second person. The extrinsic feedback can be either quantitative or qualitative. Quantitative feedback indicates the amount of discrepancy that exists between the correct response and the response given. Qualitative feedback indicates whether the performance is correct or not. As a rule, learners appreciate quantitative feedback because it enables them to make precise corrections in their performance.

It can be seen from this approach that feedback has two properties. First, it informs the learner as to the effectiveness of his performance. Second, feedback has reinforcing properties that tend to reward the appropriate performance. Unfortunately, these two properties of feedback are difficult to separate. In cases where humans were required to learn motor skills without feedback, no appreciable evidence of improvement was noted, when compared to an external frame of reference. However, in certain situations man has been observed to perform according to a subjective criteria for performance.

This raises the question of feedback withdrawal. It has been noted that the effect of withdrawing feedback is dependent upon the level of training. The performance will deteriorate with the withdrawal of feedback if the level of training is low or moderate. However, after an extended training session, little or no decrease in performance is noted. Psychologists have suggested that after periods of practice in which external feedback is received, the standard for the correct response is internalized. By this notion, self-reinforcement is a form of internal feedback that has developed over a series of trials with external feedback.

STAGES OF LEARNING A SKILL

Although the learning of a skill is largely a continuous process, three principal phases of learning have been identified. The phases are not rigidly defined and tend to gradually merge together. However, the identification of these phases facilitates the study of skill learning. The classification system described in this paper is the system proposed by Margaret Robb (1972:51-73). Utilizing the work done by Paul Fitts, Robb has suggested three phases of motor skill learning: the plan formation, the practice session, and the execution.

PLAN FORMATION

In this initial phase, the learner must understand what is expected for the mastery of the skill. Fitts (1965:178) identified this first phase of learning as the "cognitive phase". After the learner has grasped the nature of the skill and its objectives, she will establish an executive or over-all plan. In her attempt to establish this executive plan, the learner will first intellectualize the skill by verbalizing the related concepts. She will then identify the sequence of the subroutines necessary to complete the task. This will be done within the capacities and limitations of the receptor and perceptual mechanisms of the learner.

The receptor mechanism in the learner consists of her ability to detect and recognize the appropriate signals. This ability will be influenced, among other things, by the intensity of the stimulus. If a stimulus stands out in contrast with the background, it is more likely to be detected. For example, a beginner in tennis may find it easier to see a red ball against a grey background as compared to a white one.

The sensory capacities of the learner will either enhance or limit her receptor abilities. Limited ability in depth perception, vision and hearing may greatly reduce one's ability to learn a skill. Furthermore, no amount of practice will improve sensory acuity. The problem is illustrated by a student nurse with a certain loss of hearing, who tries to learn to read a sphygmomanometer. No amount of practice will improve her skill.

Man is also limited in his capacity to interpret more than one stimulus coming from different sensory sources. This situation is dealt with in one of two ways: either some material is placed in a holding pattern and dealt with at a later time, or the stimulus is simply ignored as irrelevant information. For example, in a crowded room a person will only hear one person talking, or the music playing.

The perceptual mechanism of man interprets the information received by the senses. It is sometimes difficult to separate man's sensory capacities from his perceptual processes. Man's choice of stimuli in this case is determined by the perceptual process. In learning a new skill, the student may be uncertain as to the focus of her attention. Some will be unable to see a movement pattern. In such a case, a verbal description may be helpful. Others may need to experiment with the pattern themselves to grasp the sequential pattern of the subroutines. Other students have difficulty in the discrimination of relevant and irrelevant information. If too much information is given during the performance of a skill, a selection process takes place. Some information will be processed, the remainder will be filtered

out. It is interesting to note that when a student views the demonstration of a skill which is also being explained, the student may not process all the information available.

In summary, the student must formulate an executive plan after she has understood what she is to do. During this first phase of motor skill learning, the student's receptor and perceptual mechanisms will determine to what extent she will be able to reach her goal, the mastery of a new skill.

THE PRACTICE SESSION

Once the learner has mapped out her executive plan, she must practice to fix the sequential order of responses in her system. Fitts (1965: 183) calls this practice session "the fixation phase". The amount of practice needed to achieve this end will depend on the complexity of the skill and the capacities and past experience of the learner.

During this second phase, the learner must master the delicate balance of timing and the control of each subroutine. She may also need to refine her coordination. At times this may prove difficult. Like the first phase, the learner's receptor and perceptual mechanisms will provide the necessary information to detect and process the appropriate stimuli.

Studies have been undertaken to investigate the length of practice session necessary to provide optimal learning. Kientzle (1946) found that performance is enhanced by mass practice, especially if the skills result in fatigue or boredom. Smith and Smith (1966: 38) demonstrated that a series of short practice sessions is more efficient than the same amount of practice in one continuous session. However, there is no optimal schedule for the learning of all skills. Factors such as the complexity of the task, the learner's capacity, her limitations, and her motivation should be analysed to determine the optimal practice session.

Fleishman, in a series of studies published in 1972, investigated the importance of practice in the acquisition of a skill. The results indicated that as practice continues, changes occur in the particular combination of abilities contributing to the performance. Fleishman found as well that these changes are progressive and systematic, and eventually become stabilized. There appears to be no single schedule for the learning of all skills.

The schedule of practice leads to the topic of whole and part learning. When a complex task is divided into its parts, the practice of each part is a shorter practice unit than the practice of the whole. However Annett and Kay (1956) point out that the decision about what constitutes a part is not normally made in a logical manner. As

Robb (p. 64) has illustrated "many a task is complicated by separating it into its parts". The nature of a skill as well as its temporal patterning should be carefully analyzed to determine the dependency of the various subroutines.

Practice for practice's sake is not sufficient — it must be accompanied by feedback. When a learner has an executive plan, she will know when she has achieved the expected results. However if her performance is not to her liking, the student may not know where in the sequence of subroutines she has erred. For those students who perform poorly, the teacher should offer meaningful feedback. This should include the identification of the error to the student, followed by a suggestion to correct the error. Errors are necessary to learning because they stimulate feedback and are vital for eventual success.

This second stage of mastering a skill consists of meaningful practice with appropriate feedback. This fixation period usually takes a longer period than the first phase, when the executive plan is established.

AUTOMATIC EXECUTION

In the third phase, the learner, now exhibiting a decrease in stress and anxiety, is able to perform the skill with a certain ease. Fitts (1965: 180) labels this phase the "automatic phase". This implies that the learner can execute the over-all plan without effort. The sequence has thus been relegated to a lower level.

The student can only concentrate on some other factor related to the task when the movement pattern has become automatic. Teachers frequently make the premature assumption that this phase has been reached. In the nursing setting, an instructor might exhibit this tendency in the comment: "Your dressing was well done, but you hardly said a word to the patient". Unless the student has reached the third phase in performing a dressing, she will be unable to conduct a therapeutic conversation with her client.

It must be remembered that learning proceeds over a long period of time, and seldom stops. This third phase is rarely completed. The phase is concluded when the learner relegates the acquired skill to a lower level. This indicates mastery of the skill.

The process of learning a skill has been divided into three phases. The first phase consisted of the formation of an executive plan. It also involved the identification of the sequence of subroutines involved in the task. The second concentrated on the practice of the skill in connection with feedback. Finally, the student reached the third phase where the execution of the skill was automatic, and relegated to a lower level.

IMPLICATIONS FOR NURSING EDUCATION

In planning for the acquisition of motor nursing skills, the phases can be applied as follows.

Phase I would emphasize student understanding of the motor skills to be undertaken. The student must understand what she is to do. She is formulating her executive plan, and defining her objectives. The teacher must support the student by offering live demonstrations of the techniques. During the demonstration, the teacher will restrict her comments to the description of the sequences of the skill. Other superfluous information could cause the student to filter out the details of the demonstration as irrelevant information. Other audiovisual aids, such as a film, a film-loop, or a videotape may be used instead of the live demonstration. However, careful selection of these aids should be made to avoid unnecessary and distracting information.

Students should be encouraged to handle unfamiliar equipment to obtain a feel for it. In this way, students can use their auditory, visual and perceptual modes to formulate their executive plan. Before the students begin the practice phase of learning a skill, they should be able to verbalize their executive plan to the teacher. In this way, potential problems caused by omissions or misinterpretation of the subroutines may be identified and remedied. The length of time spent in this phase will vary from a few minutes to over an hour.

Once the student has established her executive plan, she is ready to enter Phase II. The practice session is the time the student will internalize the new skill. A simulator model in the nursing laboratory can provide the students with an almost real situation with a minimum of stress.

Demonstrations, usually in the form of film loops or video-tapes, may be used to provide a comparison of the proper practice, and the student's performance.

The teacher's role during Phase II is to provide external feedback in the form of quantitative information. Thus, the evaluation of the student's performance will state how much discrepancy exists between the student's response and the correct one.

The decision to divide a technique into sections or components should be made in consultation with the students. For example, the technique of catheterization is made up of three separate techniques: gloving, the preparation of a sterile field, and the actual catheterization. Each part can be mastered separately and then practiced as a whole.

Students should be encouraged to practice in several short practice sessions. Studies have shown that these are more productive than one long session. The number of practice sessions will depend on the student's ability and the complexity of the task.

The transition between Phase II and Phase III is a gradual one. The student will have reached this phase when she can exhibit the new skill with ease, in the absence of anxiety and stress. Once the student has reached this stage, she should demonstrate her new skill in an actual situation with a client. The student should go to the clinical laboratory with one objective — to practice that one skill. The number of practice sessions would depend on the need of the student and the experiences available in the clinical setting. Again in this phase the teacher would offer feedback to the student in the form of quantitative information. Gradually, during this stage, external feedback would become unnecessary because the student's knowledge of the correct form of the new skill would serve as internal feedback.

Once all the basic nursing skills have been mastered in this manner, the student would be ready to return to the clinical setting to deliver total client care. She would be in a position to develop her intellectual nursing skills with the mastery of motor skills nearly complete. Simultaneously, the student would be in a good position to assume greater responsibility for the care she delivers.

CONCLUSION

Nursing consists of motor and intellectual skills. Faced with the responsibility of client care, student nurses place a high priority on the mastery of motor skills. This priority exists because the lack of these technical skills is most obvious to everyone — the client, the clinical instructor and the student. This has meant the relegation of intellectual skills to an inferior status.

It is proposed that at the beginning of a nursing program, a certain period of time should be set aside for students to master the basic motor skills. The learning strategy proposed is based on the cybernetic theory. The application of the theory to the nursing setting illustrates how motor skills could be taught efficiently and effectively.

Once they have mastered these basic motor nursing skills, the students will be in a better position to develop the intellectual skills relevant to nursing. Thus, a better delivery of nursing care should result.

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This author says students place a high priority on the mastering of motor skills. What do you think of her approach to teaching these skills? Do you have other ideas? If so, please take time to write a letter to the editor, so we may have as much input as possibile in this area of teaching.—Ed.

L'auteur souligne que les étudiants valorisent beaucoup la maîtrise des habiletés motrices. Que pensez-vous de son approche dans l'enseignement de ces habiletés? Avez-vous d'autres suggestions? Si oui, n'hésitez pas à écrire une lettre à la rédaction afin d'augmenter l'apport dans ce domaine d'enseignement.

L'acquisition de l'habileté motrice en nursing

Cet exposé propose un plan basé sur la cybernétique pour favoriser l'acquisition de l'habileté motrice en nursing.

Quoique l'acquisition d'une habileté motrice soit un processus continu, trois phases distinctes ont été identifiées pour en faciliter l'étude:

1) La formulation d'un plan d'exécution. Dans cette phase initiale, l'élève doit avoir une vue d'ensemble de la technique à maîtriser. Ensuite, il élabore un plan d'exécution qui comprend la verbalisation des concepts pertinents et l'identification des étapes nécessaires pour compléter la technique.

- 2) La session de pratique. Durant la session de pratique, l'élève doit maîtriser les étapes de la technique dans un temps donné. Le nombre de sessions dépend surtout de la complexité de la technique, ainsi que des talents et des expériences de l'élève. A partir de son plan, l'élève peut déterminer s'il maîtrise la technique avec un minimum de stress et d'anxiété. Sinon le professeur peut identifier les lacunes à l'aide du feed-back.
- 3) L'exécution automatique. L'élève a maintenant acquis un niveau d'habileté suffisant pour exécuter la technique presque sans effort. Il peut donc se concentrer sur d'autres aspects reliés à la technique tel que la conversation avec le client. C'est la maîtrise de la technique.

En se servant des trois phases, un plan est proposé pour l'enseignement des techniques en nursing.

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