

The Development of Clinical Nursing Situations on Videotape for Use Via Closed-Circuit TV in the Teaching of Nursing

F. Moyra Allen

We elected originally in this research project to develop videotapes depicting clinical situations in nursing and to assess their effectiveness in the teaching of nursing. To accomplish these ends we chose to film on videotape the everyday, real-life situations that persons and their families experience in various parts of our health delivery system. We focused on the recipient — professionals and others were incidental and were taped as they entered and participated within the situation we were taping. We taped persons and their families in hospital, clinic, and home; at critical points and throughout their illnesses; of differing ages — the infant to the aged; and, in addition, persons in contact with various professionals.

We have discovered within our videotapes a means to revolutionize the system of nursing education. Before, nurses in the teaching situation have rarely had the opportunity to examine a nursing situation as it occurs and develops; to study the whole situation of a patient and his family through the various phases of his health problem within the short time period of a videotape; to re-experience and re-examine a situation over and over again, to pick up cues and observations which one becomes aware of through recurrent experiences with the same situation. One does not have the opportunity in real life to view a situation a second time, to validate one's impressions or to reject them. In fact, our videotapes provide the same opportunity as the "replays" in televised hockey, a greatly enhanced and expanded opportunity for learning; but in the case of nursing, of highly complex situations. Students must learn *how to learn* from real-life situations on videotape. It has been our experience that in viewing videotapes, nurses tend to place value on actions based on the standards of a "textbook picture" of either the nurse or the patient and, therefore, fail to see or to respond to the situation as it exists.

Originally published in *Nursing Papers*, 1972, Vol. 4, No. 2, 23-33. (National Health Grant Project No. 604-7-667.)

Research Report

Rationale. Schools of nursing encounter difficulties in obtaining the amount and type of clinical experience which they require to prepare nurses. If we are able to provide effective clinical experiences on videotape, we shall have greater command over the number of nurses who can be educated. Furthermore, the known content of taped situations permits the educator greater control over what is learned and ultimately over the quality of nursing education.

Taping. Emphasis shifted from taping the nursing of patients to taping the patients themselves, their families, and whatever professional personnel entered into the situation during the taping process. This modification enabled us to utilize the tapes for the original purposes: observation and assessment of the patient situation by the individual student or group of students. It was discovered in the first year of the research proper, in tapes focusing on the nurse, that an audience evaluated the nurse in a type of *a priori* fashion without much consideration of the patient. Such an approach tends to parallel the textbook presentation of nursing and therefore is already available to us. By focusing on the patient, we were able to direct the audience's observation to the patient situation — to observe, analyze, and discuss the nature and requirements of it. The patient over time in many settings and under many conditions with varying professionals is not available in any medium — not even from the patient himself. One is not with him for such long periods nor can experiences with patients be restudied, reassessed and, in a sense, rediscovered.

Validation. Validation sessions were held to gain a consensus on the content of the tapes by experts in various aspects of nursing from across Canada. Validators were asked to view a tape and to answer specific questions which were subsequently analyzed for nursing content.

The major finding from the validation sessions was that experts from across the country view nursing differently. *The nature of observations, the needs of patients, the characteristics of effective nursing and of the successful delivery of health services varied a good deal from one person to another.* Validity could only be established at a general level of content. Therefore, it is premature to consider any final validation of the content of the tapes at this time. Rather, we must assist nurses (and others) to study the tapes to add to their pool of experiential data — material which, heretofore, has been lacking. If the potential of these tapes can be exploited, nurses can be made aware of a new realm of reality in the situations with which they deal. Undoubtedly, a similar phenomenon exists when we consider

the evaluation of health care, for our findings suggest that professionals within one field vary in their observations and assessments and in the criteria they utilize for evaluating care and services.

Experiment to Evaluate the Effectiveness of Videotapes in the Teaching of Nursing

An experiment was designed to evaluate the effectiveness of videotapes in the teaching of nursing. Senior students in two hospital schools of nursing were used as the test groups and the experiment focused on the nursing of aged persons.

Introduction

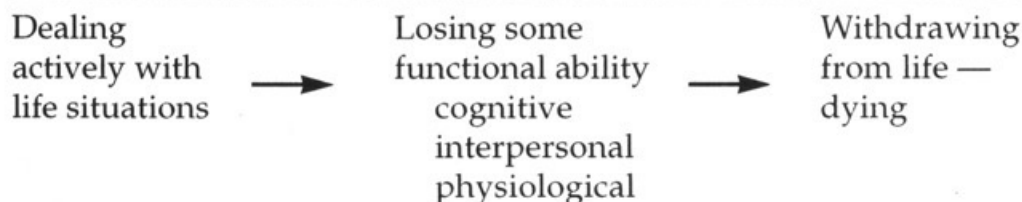
Students have experiences in nursing aged persons throughout their educational program, such as the relevant aspects of a number of courses; nursing elderly patients; individual and group discussions with instructors, nursing staff, students, and other health professionals; plus a variety of extracurricular experiences. The nursing of aged persons is, in particular, an emphasis of some senior experiences in medical-surgical nursing, when the student is expected to respond to the varying forces and influences of a patient situation by making a nursing judgment and plan of care. At the same time students may be given the opportunity to act as team leader with a group of staff to provide care for a larger number of patients, many of whom are older persons.

The experiment in teaching was directed towards answering the following question:

To what extent does the introduction of videotapes portraying the response of elderly persons to illness, hospitalization, and treatment, and the response of nurses in caring for these patients, augment the student's potential to nurse aged persons?

Theory*

A Continuum — Process of Aging



*A point of view based on the analysis of a number of videotapes along with study of the rapidly increasing bibliography on the subject.

Throughout life individuals develop notions of their personal freedom and independence in activities of living. In old age, persons continue to maintain these notions while coping with the phases of the aging process. Elderly persons who become ill are placed in a position of dependency and their reaction to this state varies in view of their past experience and stage of aging. Thus a person still dealing actively with life may exhibit a high degree of dependency in so doing; while another person may demonstrate much autonomy of self in approaching death. In other words, aging is reflected in the varying stages of disengagement of the individual from life, and to some extent, independently of this disengagement, individuals perceive their ability to control what happens to them, the decisions they make, and the choices or alternatives that are available to them.

In addition to the perceptions and status of the individual person, the nurse has a method for making decisions about a person's needs, areas of autonomy, the types and number of choices, etc. Her approach to this problem may be established *a priori* for the varying phases of aging and disengagement or, on the other hand, she may respond to the individual and assist him to make his perceptions and ideas of living operative for him within the hospital or other community setting. Thus we have differential responses of nursing to aging persons and to their lifestyle.

Design

Experimental designs were developed to fit in with the actual teaching programs in process in the latter half of the third year of the two hospital schools; in other words, an experimental design in natural laboratory settings. The following plan outlines the experimental designs followed for schools A and B, in which 0 stands for *pre* or *post test* and X for *experimental variable*.

School A			
	Pre test	Experimental Variable	Post test
Group 1			0 ₂
Group 2	0 ₁		0 ₂
Group 3	0 ₁	X ₁ X ₂	0 ₂

The post test for Group 1 assesses the student's potential to nurse aged persons towards the end of the last instructional experience in the school of nursing and, therefore, provides information on the effectiveness of the usual teaching methods. The pre and post tests in Group 2 identify the difference in potential at the beginning of the instructional

experience and at the end of the usual instruction which students receive. The pre and post tests in Group 3 identify the effectiveness of the videotape in augmenting the potential of students to nurse aged persons. It was hypothesized that:

1. The difference between pre and post test scores in Group 3 is greater than the difference in Group 2.
2. The post test scores in Group 3 are higher than those in Groups 1 and 2.

Validity and Reliability

The three groups were tested in subsequent months. The groups were relatively separate during the three months because of the experiences planned; however, some opportunity existed for Group 2 to gain knowledge from Group 1, and Group 3 from both Groups 1 and 2; hence the rationale for introducing the experimental variable in Group 3, the last group chronologically. The decision to introduce the experimental variable in Group 3 protects the experimental variable in that the problem of contamination from the experimental to the control groups is eliminated. However, the decision theoretically favours the hypotheses in that any information which is passed on from Groups 1 and 2 to Group 3 may lead to a greater initial potential for nursing aged patients in Group 3. Pre test scores for Groups 2 and 3 should help to assess this problem: Are pre test scores for Group 3 higher than those in Group 2?

It is unfortunate that there were not four natural groups so that an experimental group without pre testing might have been assessed. It is expected that the pre test exercise alerts respondents so that post test scores will be somewhat higher given no instruction at all. However, the extent of the problem can be assessed from the scores of Groups 1 and 2. The decision to pre test the experimental group was made to provide information on the problem described in the previous paragraph as well as to assess the equivalence of the experimental group with at least one other group.

School B

	Pre test	Experimental Variable	Post test
Group 1	0_1		0_2
Group 2			0_2
Group 3	0_1	$X_1 \quad X_2$	0_2
Group 4		$X_1 \quad X_2$	0_2

In addition to the control and experimental groups in School A, School B in Group 4 provides information on the effectiveness of the experimental variable (the post test) minus the interaction of effects due to pre testing. As will be noted later, this is a critical condition for this particular experiment. It was hypothesized that:

1. The difference between pre and post test scores in Group 3 is greater than the difference in Group 1.
2. The post test scores in Groups 3 and 4 are higher than those in Groups 1 and 2.

The situation in School B allowed for four natural groups so that an experimental group without pre testing could be assessed.

The Experimental Variable

Selections from videotapes made during 1971 of nurses caring for elderly people (real-life situations) were made on the basis of variation in sex, age, type of illness, degree and type of disengagement, and degree of independence or autonomy on the part of the patient, and variation in the nurses' responses to these patients. Disengagement and independence in the patient and type of response in the nurse had been validated to some extent by a small number of judges who were able to view and study the tapes over time.

At a convenient time during the second-third weeks of the instructional program for Group 3 of School A and in February for Groups 3 and 4 of School B, two sessions were held a few days apart in which the videotapes were shown to the groups of students. Post-viewing discussions were held with the whole group focusing on their observations of the aged person and the nurse's response. Instructions to the group were as follows:

The videotape you will see shows the response of a number of aged persons to (Session 1) and one person through the stages of (Session 2) illness, hospitalization, and treatment as well as the nursing of these persons. After the tape there will be an opportunity to discuss your observations with others in the class and to consider their meaning to you in nursing aged persons.

The discussion session was led by the project director. She introduced the discussion by asking for their observations and continued throughout by clarifying and summarizing the group's response periodically. At no time did the discussion leader introduce content on aging or nursing the aged nor did she introduce her observations of the tape. Each discussion lasted for 20–45 minutes.

The Test Procedure

It was expected that the videotapes depicting the nursing of aged persons in hospital would sensitize the viewers to variation in needs and responses of older people and to the approaches which nurses use and the problems they experience in caring for the aged. Given this expectation it was assumed that the viewers of the videotapes, i.e. the experimental group, should have greater potential for nursing elderly persons. Nursing potential is described as a combination of variation and specificity, terms which are defined in the following section. To determine whether the expectation was justified, data were collected from students by asking them to respond in a test situation. The construction of the test and the analysis of the responses were based on the theoretical approach to aging described earlier, i.e. disengagement and the patient's and nurse's responses.

Test Questions (Pre and Post Tests)

A content analysis of the respondent's answers was carried out to determine the number, variation, and specificity of ideas relating to the elderly patient and to the nurse.

- Quantity — Number of ideas relating to elderly patient and to nurse, per response.
- Specificity — Description of particular, discrete, or specific needs as contrasted with general or global statements: a characteristic of each idea.
- Variation — Differences in types of needs and aspects of needs and differences in kinds of response to illness, indicating awareness of a variety of psychological, physiological, and sociological factors.

Theoretically the Potential for Nursing Aged Persons was determined in the following manner:

$$\begin{array}{ccc} \text{Quantitative Index} & \times & \text{Qualitative Index} \\ \text{(No. of ideas)} & & \text{(Variation } \times \text{ Specificity)} \\ \text{Nursing Potential} & = & \text{N(VS)} \end{array}$$

Analysis of Findings

The mean test scores for each group in Schools A and B follow:

Mean¹ — Assumes the four test scores to be of interval variables.

Mean² — Assumes the scores of Questions 2 and 4 to be of interval variables.

Pre test		Experimental Variable		Post test
School A				
Group 1				O_2 (Jan. 27) ($N = 28$) $M^1 = 12.9$ $M^2 = 9.0$
Group 2	O_1 (Feb. 4) ($N = 33$) $M^1 = 11.9$ $M^2 = 8.4$			O_2 (Feb. 25) ($N = 24$) $M^1 = 10.2$ $M^2 = 7.4$
Group 3	O_1 (Mar. 2) ($N = 33$) $M^1 = 11.93$ $M^2 = 8.1$	X_1 (Mar. 13)	X_2 (Mar. 20)	O_2 (Mar. 24) ($N = 12$) $M^1 = 11.8$ $M^2 = 8.6$
School B				
Group 1	O_1 (Jan. 25) ($N = 12$) $M^1 = 11.3$ $M^2 = 7.6$			O_2 (Feb. 7) ($N = 12$) $M^1 = 11.5$ $M^2 = 7.2$
Group 2				O_2 (Feb. 7) ($N = 6$) $M^1 = 11.3$ $M^2 = 7.7$
Group 3	O_1 (Feb. 7) ($N = 9$) $M^1 = 11.9$ $M^2 = 7.7$	X_1 (Feb. 11)	X_2 (Feb. 15)	O_2 (Feb. 18) ($N = 7$) $M^1 = 11.6$ $M^2 = 6.9$
Group 4		X_1 (Feb. 11)	X_2 (Feb. 15)	O_2 (Feb. 18) ($N = 9$) $M^1 = 12.3$ $M^2 = 8.4$

We note that the first hypothesis has not been upheld. Post test scores are higher than pre test scores in only two instances: a difference of 0.5 points for Mean², Group 3, of School A and 0.2 points for Mean¹, Group 1, of School B (differences insignificant). In fact, post test scores are lower than pre test scores in both control and experimental groups. The second hypothesis has not been upheld. Post test scores are not higher for the experimental groups than for the control groups, with the exception of Group 4 of School B (difference insignificant).

How can one account for the failure to uphold the hypotheses? Many factors came to light during the process of the experiment; one notes immediately the mortality between the pre and post test groups, particularly in School A where the numbers are larger. The mortality in Group 3 of School A was almost 66.6%.

Problems with Experiment

Choice of Groups

The senior classes in two hospital schools of nursing were selected as the test groups. According to the schedule of each school, the class was divided into groupings for the purposes of learning to nurse in different clinical experiences and to participate in the accompanying instruction. These natural groupings could readily be divided into control and experimental groups for purposes of the experiment. The situation seemed ideal. These two groups were among a number of last classes to graduate from hospital schools in Quebec and, as the CEGEP system of nursing education was new, it did not seem reasonable to inflict experimentation upon them at such an early date.

It became clear as the experiment proceeded that these students had learned to nurse and, at the point of graduation, did not feel the need to learn more about nursing. The method of handling the experimental variable, i.e. the introduction of videotapes, would have to have been approached quite differently if the experiment were to have had a reasonable opportunity of success.

Videotapes of Reality Situations

Students had learned ways of responding to older people and they found it difficult to focus on a situation of an older person and expect that they would find anything different. Comments such as the following were made by the respondents:

"We know about older people, we know how to nurse them."

"We are sick of older people, we've had too many to care for."

"We know about meeting the needs of the older person and treating the person as an individual."

Having used these same videotapes with the validators and also with students in the baccalaureate and master's program in the university, it has become increasingly clear that students (as well as teachers) have to learn *how to learn* from these real-life situations. They are being

asked to observe and assess on the basis of the data or information provided from the situation and not to bring to the situation an *a priori* or preplanned statement of what the patient needs and what should be done for him.

As the nursing profession wishes at this time to move from prescriptive nursing to observation and the gathering of information as the basis for assessment, the value of the reality situation on videotapes has increased tremendously.

Effects of Pre Testing

With the exception of Group 1 in School B, pre testing was associated with lower post test scores. The same test was used in both pre and post test situations. Students felt that they would answer the second time as the first, so frequently in the post test students referred the reader to their first answer or made only a brief response.

A post test containing different questions from the pre test had been considered earlier, but rejected on the basis of problems of validity and reliability. The other possibility of a multiple choice type test was not feasible given the time span of the experiment. To attempt to validate items and standardize a test when no criterial base existed for selecting the best answer would have been sheer expediency and at best have demonstrated the truth of the self-fulfilling hypothesis.

The high mortality rate, particularly in the experimental group in School A, coupled with the slight differences in pre and post test scores, leads us to regard the results of the experiment as inconclusive and certainly provides no firm evidence for either the acceptance or rejection of the hypotheses. However, a number of interesting bits of information may be gleaned from the results.

It is fortunate that one experimental group was carried out without pre testing (Group 4, School B). It may be noted that this group has the highest post test score of all the groups in School B, leading us to wonder whether the experimental variable (videotapes) had been instrumental in augmenting student learning. It is unfortunate that in the whole experiment only one of the three experimental groups was not pre tested.

The factor of time seems to have had a different result in School A as compared with School B. In School A the scores seemed to decline from one group to the next, that is, from the end of January to the end of March, whereas in School B the scores tend to increase from one

group to the next. In School B, one might infer a maturation or learning factor to account for the increase; however, contamination of the successive groups is an acceptable alternative to explain this situation. In fact, the latter alternative may help to explain this phenomenon in School A, in that contamination of successive groups may have resulted in loss of interest and rejection of the experiment.

Conclusions and Recommendations

Owing to the inconclusive results of the experiment, it is suggested that a second experimental situation be devised to evaluate the effectiveness of videotapes in the teaching of nursing. To enhance the probability of this experiment being successful and the hypothesis being upheld, the following changes would be required.

- (a) Introduce the experimental variable (videotape) near the beginning of a nursing program before students have learned a *way of learning* about nursing and before they have actually learned to nurse. It became clear in reflecting on the original plan and on how people learn that there is more opportunity to influence learning when students are changing and learning a great deal (the beginning of a nursing program) as compared with the end when the rate of learning has decelerated and students feel they know how to nurse.
- (b) Maintain the experimental variable in contact with the group over a sufficient period of time for it to be effective. We learned that videotapes, which present reality, demand a new approach to the teaching of nursing, resulting in the learning of different content, i.e. way of nursing. For this reason, it would be necessary to introduce the experimental variable, videotapes, for a whole course, i.e. a semester course.
- (c) If (a) and (b) were acted upon, then students would learn a good deal in the course and would feel themselves that their response to the post test would differ considerably from that of the pre test. In the experiment just completed, students expressed frustration in responding to the post test as they felt their response would be the same as to the pre test.