UNCERTAINTY AND ANXIETY OF HYSTERECTOMY PATIENTS DURING HOSPITALIZATION

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Uncertainty and anxiety are common responses among patients undergoing surgery (Auerbach & Kilmann, 1977; Drellich & Bieber, 1958; Spielberger, 1972; Webb & Wilson-Barnett, 1983). Each response is associated with the type of procedure being faced as well as with the meaning that the removed organ has for that individual. For example, hysterectomy patients experience uncertainty and anxiety about what the operation entails and the effect of the removal of the uterus on sexual functioning (Drellich & Bieber, 1958). Even though uncertainty and anxiety are common, it is unclear how these responses change over the course of hospitalization or how these responses are related. Therefore, the purpose of this study was twofold: first, to investigate the course of uncertainty and anxiety over the hospital stay and secondly, to examine the relationship between uncertainty and anxiety at different points during hospitalization. We elected to answer these questions with the responses from hysterectomy patients.

Uncertainty

The study of uncertainty has been closely linked to ambiguity. For example, uncertainty has been equated to or used to operationalize situational ambiguity (Norton, 1975). Folkman, Schaefer and Lazarus (1979) differentiate between ambiguity and uncertainty and then describe the relationship between them. Ambiguity refers to lack of clarity of meaning in the environmental display. Uncertainty is confusion about what the environmental display means. Folkman et al. (1979) conceptualized uncertainty as arising from ambiguous factors within the situation and from factors within the individual, such as a person's own distinctive agenda, beliefs, and abilities. They further delineate four types of uncertainty: event, temporal, outcome, and control uncertainty. Event uncertainty occurs when the time of the event is known but the possibility of its occurrence varies, whereas temporal uncertainty occurs when the time of the event is

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Nursing Papers/Perspectives en nursing 1987, 19(1), 59-73

unknown. Outcome uncertainty occurs when the individual does not know what will happen and control uncertainty occurs when the individual is not certain if the event can be controlled. Three of these four types of uncertainty have been experimentally studied in the laboratory setting: control (Pervin, 1963), event (Monat, Averill & Lazarus, 1972), and temporal (Monat, 1976) uncertainty.

To date, the only investigator to examine uncertainty in hospitalized patients is Mishel (1981, 1984). Mishel's (1981) conceptualization of uncertainty is based on perceptual, judgmental, and cognitive factors. Mishel contends that perceived uncertainty is a judgment about an event or a situation that cannot be adequately structured or categorized. Three possible situations result in uncertainty: the event is not recognized; the event is recognized but not categorized; and the event is recognized, but categorized incorrectly (Mishel, 1981). The Uncertainty in Illness Scale, based on this conceptualization, was used to study whether there was an association between uncertainty and stress in patients hospitalized for a medical condition (Mishel, 1984). As expected, respondents with higher levels of uncertainty reported higher levels of stress. A second purpose of the study was to test the strength of relationships in an a priori model, developed by Mishel, in which uncertainty acts as a mediator between the variables, age, recency of prior hospitalization, seriousness of illness, education, and stress. Uncertainty was found to act as a mediator between seriousness of illness and stress, and not for the remaining three variables.

The study of uncertainty in hysterectomy patients has been limited to the Mishel, Hostetter, King and Graham (1984) descriptive-correlational study. The sample included 54 patients newly diagnosed with gynaecological cancer. Women with high uncertainty levels reported more problems adjusting psychosocially to the diagnosis.

Uncertainty has not been examined in patients undergoing hysterectomy for benign disease. There is reason to believe that it may change over the course of hospitalization, however. Mishel's studies have examined uncertainty only at one point in time. Although uncertainty and anxiety have been linked theoretically, their relationship has not been studied systematically.

Anxiety

As one of the most frequently written about phenomena in the psychological literature, the definitions of anxiety, both theoretical and operational, are many. As a result, there is lack of agreement regarding the nature of anxiety, and the conditions and current or past experiences that initiate it. Freud (1936) saw anxiety as a signal indicating that the individual

was in the presence of a dangerous situation. He differentiated between objective anxiety and neurotic anxiety on the basis of the source of the danger; that is, whether or not it originated in the external world or in internal impulses. Existential theory views anxiety as an apprehension, initiated by a threat to a value that is held as essential to the individual's existence (May, 1950). Interpersonal theory characterizes anxiety as tension that arises from experiencing disapproval in interpersonal relations (Sullivan, 1953). Francis and Mungas (1968) described anxiety as an inobservable energy, its presence being inferred through the effect it has on attention, behaviour, learning and perception.

More recently anxiety has been divided into two aspects. Spielberger, Gorsuch and Lushene (1970) define two types of anxiety: state anxiety and trait anxiety. State anxiety is a transitory emotional state that is characterized by consciously perceived feelings of tension and apprehension, and is accompanied by heightened autonomic nervous system activity. It may vary in intensity and fluctuate over time. In contrast, trait anxiety refers to differences in the tendency to respond to threatening situations. It represents a proneness to elevations in state anxiety intensity.

Spielberger (1972) predicts that transitory or state anxiety levels would be higher in circumstances that are perceived as threatening, and lower in situations in which there is little or no perceived danger. Besides the threat of surgical intervention, there are other factors which may affect anxiety levels in hysterectomy patients. These include the loss of child-bearing ability (Drellich & Bieber, 1958), the fear of being altered sexually (Dennerstein, Wood & Burrows, 1977), and the fear that the operation will make them unattractive, fat and old (Webb & Wilson-Barnett, 1983).

At least two studies have investigated anxiety over the normal course of a surgical experience (Auerbach, 1973; Johnston, 1980). State anxiety was significantly higher on Day 1 preoperation than on Day 6 postoperation and the difference between anxiety levels on Day 1 pre-op and Day 2 post-op approached statistical significance in surgical patients (Auerbach, 1973). Johnston (1980) undertook a series of studies, two of which involved gynaecological patients. The highest level of anxiety was reported two days before surgery and, following admission, there was no significant change from Day 1 pre-op to Day 2 post-op or Day 4 post-op. However, respondents experienced significantly lower levels of anxiety on Day 6 post-op compared to Day 1 pre-op.

Purpose of the Study

Lazarus and Averill (1972) identify a possible theoretical link between uncertainty and anxiety. Uncertainty is viewed as giving rise to anxiety.

Anxiety is an emotion based on the appraisal of threat. Of the three elements embodied in this appraisal (symbolic, anticipatory and uncertain elements), the uncertain element is the one seen to be the hallmark of anxiety. Uncertainty arises because the initial threat is symbolic, not concrete, and thus its nature cannot be easily identified. As a result, no rational action can be taken to dispel it. Consequently, anxiety results from uncertainty about what will happen, whether it will happen, when it will happen and what can be done about it.

To date, there are no studies that relate uncertainty and anxiety over the period of hospitalization. This study addresses the following two research questions.

1. Do levels of uncertainty and anxiety change over a short-term hospital stay?
2. What is the relationship between uncertainty and anxiety during the hospital stay?

The following hypotheses were tested:

1. Patients will have higher levels of uncertainty before surgery than after surgery.
2. Patients will have higher levels of anxiety before surgery than after surgery.
3. Patients with higher levels of uncertainty will have higher levels of anxiety.

Method

The sample

Twenty women, admitted to two university teaching hospitals for total abdominal hysterectomies for benign reasons, constituted the study population. Because the groups did not differ statistically on any background characteristics, the data were pooled for all subsequent analyses. Table 1 summarizes the major background characteristics.

The majority of the women were middle-class Caucasians whose ages ranged from 28 to 59 (M: 43.1). Although four women (20%) had not completed high school, over half the women had some high school education; the remaining women had some college or university education. Almost all of the women reported being satisfied with their support network and with the number of children they had.

Table 1

Distribution of Background Characteristics of Subjects

Variable	Mean	S.D.	Median	Range
Age	43.1	8.0	43.0	28 - 59
# Previous Hospitalizations	2.6	1.3	2.5	0 - 5
			n	%
Level of Education				
Less than High School			4	20
High School			6	30
High School plus			5	25
University Graduate			0	0
Post-graduate studies			5	25
Diagnosis				
Leiomyoma (fibroid)			8	40
Adenomyosis			4	20
Endometriosis			1	5
Hyperplasia with or without atypia			3	15
Pelvic inflammatory disease			2	10
Fibroid and endometriosis			2	10
Type of Operation				
Total Abdominal Hysterectomy (TAH) and TAH with Right or Left Salpingo-oophorectomy			11	55
TAH, Bilateral Salpingo-oophorectomy			9	45
Support				
Very supportive			5	25
Supportive			14	70
Not supportive			1	5
Satisfaction with Number of Children				
Satisfied			18	90
Not satisfied			1	5
Not interested in having children			1	5

Instruments

Mishel Uncertainty in Illness Scale (MUIS). The MUIS consists of 34 items, divided among the following four factors derived through factor analysis (Mishel, 1984): (a) Ambiguity (17 items) – refers to the patient's perception of the state of illness as being vague or unclear; e.g. "I have a lot of questions without answers." (b) Complexity (7 items) – refers to the many cues the patient perceives about the treatment and system of care; e.g. "The explanations they give about my condition seem hazy to me." (c) Deficient Information (4 items) – refers to the lack of information about the diagnosis; e.g. "I don't know what is wrong with me." (d) Unpredictability (6 items) – refers to perceived unpredictability about the course and outcome of the illness; e.g. "When I have pain, I know what this means about my condition." Subjects were asked to rate themselves on each of these 34 items along with a five-point Likert scale ranging from "strongly agree" (e) to "strongly disagree" (0).

The scale is reported to have high internal consistency for the total scale (Cronbach alpha = .91) and for each factor (range of alpha .70 – .91) (Mishel, 1983). Furthermore, construct validation of the MUIS has been established through a constant group design. As predicted, patients in the prediagnostic phase had higher uncertainty scores than diagnosed patients (Mishel, 1981).

Spielberger State-Trait Inventory (STAI) (Y-Form). The STAI is a self-administered 40-item questionnaire evenly divided into two forms, one measuring state anxiety and the other, trait anxiety. State anxiety (A-state; Form Y-1) measures anxiety in response to a specific situation: e.g. (at the moment) "I feel calm", whereas Trait Anxiety (A-trait: Form Y-2) measures anxiety as a personality trait; e.g. (in general) "I wish I could be as happy as others seem to be." Subjects were asked to rate their degree of agreement or disagreement with each statement on a four-point Likert scale ranging from "not at all" (1) to "very much so" (4). The STAI is a widely used scale and is reported to have good test-retest reliability and good concurrent validity (Spielberger, 1983).

Procedure

Potential respondents were approached the day prior to surgery and given a verbal explanation about the study. If the woman agreed to participate, she signed a consent form. Of the 28 women approached, 20 women agreed to participate.

Respondents were asked to complete both the A-state and the A-trait forms of the STAI as well as the MUIS on Day 1 pre-op (day of admission). Except for the A-trait forms, these forms were again administered on Day 3 post-op and Day 6 post-op. These periods were selected in light of Johnston's (1980)

findings that anxiety was highest on the day before surgery, decreasing marginally immediately postoperatively. By Day 6, anxiety levels had significantly decreased from their preoperative levels. To minimize a carry-over effect the STAI questionnaires were administered first, followed by the MUIS.

Results

The hypotheses were tested using the Repeated Measures Analysis of Variance (ANOVA). Significant main and interactional effects were tested using the Newman-Keuls post-hoc test.

Hypothesis 1: Patients will have higher levels of uncertainty before surgery than after surgery.

Uncertainty was composed of four elements: ambiguity, complexity, deficient information and unpredictability. To determine whether or not the four types of uncertainty were related, cross-correlations were computed for each type at each testing time. Cross-correlations for ambiguity, complexity, and deficient information were high at the three testing times: Day 1 pre-op, $r(18)$s = .83 - .56, ps < .001 - .01; Day 3 post-op, $r(18)$s = .86 - .74, ps < .001; and Day 6 post-op, $r(18)$s = .89 - .87, ps < .001. However, the coefficients among unpredictability and ambiguity, complexity, and deficient information were low and not significant at Day 1 pre-op ($r(18)$s = .31 - .04; ps > .05) and were moderate for Day 3 post-op ($r(18)$s = .41 - .38, ps < .05) and Day 6 post-op ($r(18)$s = .68 - .60, ps < .001 - .01).

Because of the significant positive correlations among ambiguity, complexity and deficient information, these factors were summed (range 28 to 140) to yield a type of uncertainty called multi-attributed ambiguity. Unpredictability (range 6 to 30) did not correlate highly with the other uncertainty types on Day 1 pre-op, and was treated as a separate variable. Because unpredictability (6 items) and multi-attributed ambiguity (28 items), as separate parts of the uncertainty scale, were composed of different numbers of items, the two types were weighted to generate comparable scores. The score for unpredictability was divided by 6 (range 1 to 5) and the score for multi-attributed ambiguity was divided by 28 (range 1 to 5), the number of items composing each of the two types. Subsequent analyses were performed on the equalized data.

The data were subjected to a 3 x 2 repeated measures ANOVA with Time (Day 1 pre-op, Day 3 post-op, Day 6 post-op) and Uncertainty Type (unpredictability and multi-attributed ambiguity) as within-subjects factors. The analysis yielded significant main effects of Time, $F(2,38) = 5.89$, $p < .01$, and Uncertainty Type $F(1,19) = 25.0$, $p < .001$, as well as a significant

Time x Uncertainty Type interaction, $F(2,38) = 5.38$, $p < .01$. The women experienced more uncertainty on Day 1 pre-op than on Day 3 post-op (M: 2.4 and 2.1, Newman-Keuls (NK): $p < .05$), and more unpredictability than multi-attributed ambiguity (M: 2.5 vs 1.9). However, the main effects of Time and Uncertainty Type were qualified by a significant Time x Uncertainty Type interaction. Post-hoc tests revealed that for unpredictability, scores decreased significantly from Day 1 pre-op to Day 3 post-op (NK: $p < .01$) and from Day 1 pre-op to Day 6 post-op (NK: $p < .01$ (Table 2). Women experienced less unpredictability on Day 3 post-op and Day 6 post-op than they experienced on Day 1 pre-op. For multi-attributed ambiguity, however, scores showed no significant change from Day 1 pre-op to Day 3 post-op or from Day 1 pre-op to Day 6 post-op.

Table 2

Mean Unpredictability and Multi-attributed Ambiguity Scores at Time 1, Time 2, and Time 3

Variable	Range	Pre-op Day 1	Post-op Day 3	Post-op Day 6
Unpredictability	1 - 5	2.83	2.32	2.32
Multi-attributed Ambiguity	1 - 5	2.03	1.87	1.84

Unpredictability: Day 1 pre-op vs Day 3 post-op: **; Day 3 post-op vs Day 6 post-op: N.S.; Day 1 pre-op vs Day 6 post-op: **

Day 1 pre-op vs Day 3 post-op: *; Day 1 pre-op vs Day 6 post-op: *

Multi-attributed Ambiguity: Day 1 pre-op vs Day 3 post-op: N.S.; Day 3 post-op vs Day 6 post-op: N.S.; Day 1 pre-op vs Day 6 post-op: N.S.

Newman-Keuls: **$p < .01$, two-tailed.
N.S. = Nonsignificant.

To determine whether or not the relationship between unpredictability and multi-attributed ambiguity was affected by the stage of hospitalization, comparisons were made between levels of unpredictability and multi-attributed ambiguity at each time using the same Newman-Keuls test (Table 2).

Mean scores for unpredictability were significantly higher than those for multi-attributed ambiguity at Day 1 pre-op (NK: $p < .01$), at Day 3 post-op (NK: $p < .01$) and Day 6 post-op NK: $p < .01$). Women experienced more unpredictability than multi-attributed ambiguity at each of the three time periods.

Hypothesis 2: Patients will have higher levels of anxiety before surgery than after surgery.

The state anxiety data were subjected to a repeated measures ANOVA with Time (Day 1 pre-op, Day 3 post-op, Day 6 post-op) as within-subjects factor. The analysis yielded a significant main effect for Time, $F(2,38) = 6.28$, $p < .01$. The women exhibited higher levels of state anxiety on Day 1 pre-op than either on Day 3 (M: 39.9 vs 32.0, NK: $p < .01$) or on Day 6 (M: 39.9 vs 30.6, NK: $p < .01$) post-op.

Thus, hypotheses 1 and 2 were supported. The women experienced more uncertainty (unpredictability and multi-attributed ambiguity combined) on Day 1 pre-op than on Day 3 post-op, but experienced no change in uncertainty levels from Day 3 post-op to Day 6 post-op. However, the decrease in uncertainty was mainly due to a change in levels of unpredictability rather than in levels of multi-attributed ambiguity. The women also experienced significantly higher unpredictability than multi-attributed ambiguity at each stage of their hospitalization. State anxiety levels were similar to those for unpredictability.

Hypothesis 3: Patients who have higher levels of uncertainty will have higher levels of anxiety.

Uncertainty scores obtained at each of the three time periods were summed to yield a global uncertainty score (range 102 to 510). To test the hypothesis, the women were classified into high- and low-uncertainty groups. Women who scored above the median for uncertainty were designated as the high-uncertainty group, and those who scored below the median were said to be in the low-uncertainty group. (Women in both the high- and the low-uncertainty group came from both settings). The state anxiety data were then subjected to a repeated measures ANOVA with Uncertainty Group (high and low) as a between-subject factor and Time (Day 1 pre-op, Day 3 post-op, Day 6 post-op) as a within-subjects factor. The analysis yielded significant main effects for Time, $F(2,36) = 6.52$, $p < .01$, and Uncertainty Group, $F(1,18) = 5.55$, $p < .05$. Women experienced more state anxiety on Day 1 pre-op than either on Day 3 post-op (M: 39.9 vs 32.0, NK: $p < .01$) or on Day 6 post-op (M: 39.9 vs 30.6, NK: $p < .01$). Moreover, high-uncertainty subjects had higher overall state anxiety scores than low-uncertainty subjects (M: 38.2 vs 30.1).

Post-hoc tests on the state anxiety data revealed that, for the low-uncertainty group, anxiety scores decreased significantly from Day 1 pre-op to Day 3 post-op (NK: $p < .05$), and from Day 1 pre-op to Day 6 post-op (NK: $p < .01$) (Table 3). Low uncertainty women experienced less state anxiety on Day 3 post-op and Day 6 post-op than they experienced on Day 1 pre-op. In contrast, high-uncertainty women experienced no change in state anxiety over the period of hospitalization. Using the same Newman-Keuls test, comparisons were made between state anxiety scores for high- and low-uncertainty groups at each time (Table 3). High- and low-uncertainty groups did not differ significantly on state anxiety level on Day 1 pre-op or on Day 3 post-op. However, at Day 6 post-op, high-uncertainty women reported higher state anxiety scores than low-uncertainty women (NK:$p < .01$).

Table 3

Comparison of Mean State Anxiety Scores for High- and Low-uncertainty Groups at Time 1, Time 2, and Time 3

Groups	Pre-op Day 1	Post-op Day 3	Post-op Day 6
High-uncertainty	42.1	35.0	37.6
	N.S.	N.S.	
		N.S.	
	N.S.	N.S.	* *
Low-uncertainty	37.7	29.0	23.5
	*	N.S.	
		**	

Newman-Keuls: *$p < .05$, two-tailed.
**$p < .01$, two-tailed.
N.S. = Nonsignificant.

Uncertainty and trait anxiety. To investigate whether or not uncertainty levels were related to trait anxiety, as opposed to state anxiety, the uncertainty data were again classified into high- and low-uncertainty groups.

Because trait anxiety was measured only on Day 1 pre-op, a one-way ANOVA on trait anxiety was calculated with uncertainty (high and low) as the independent variable. No significant difference in trait anxiety levels was found between high- and low-uncertainty groups (M: 35.6 vs 30.3, p >.05). It should also be noted that the background characteristics of age, education, and number of previous hospitalizations were not related to levels of uncertainty or anxiety.

In summary, high- and low-uncertainty women did not differ on trait anxiety. When high- and low-uncertainty groups were compared at each time period, the groups did not differ in their level of state anxiety at Day 1 pre-op; anxiety levels were at their highest during this time period for both groups. At Day 3 post-op, however, the level of state anxiety for the high-uncertainty group was higher (marginally significant) than for the low-uncertainty group, and, by Day 6 post-op, high-uncertainty women's anxiety levels remained significantly higher than the anxiety levels of low-uncertainty women.

Discussion

Uncertainty is an important construct in nursing, yet, only recently have its properties and its variability been systematically described for patients hospitalized for different conditions (Mishel, 1981, 1983). This study further extends our knowledge about the construct by examining how uncertainty changes over the course of hospitalization that involves surgical intervention, and by exploring its relationship with the interrelated anxiety construct.

The trajectory of uncertainty

The higher levels of uncertainty found before surgery may be related to the larger number of uncertainty issues patients face preoperatively. This finding is consistent with those in Drellich and Bieber's (1958) descriptive study, which found that, preoperatively, hysterectomy patients showed a wide range of uncertainties related to imminent surgery as well as uncertainties associated with outcomes.

The significant decrease in levels of unpredictability over the period of hospitalization, accompanied by significantly lower but unchanging levels of multi-attributed ambiguity, may indicate that uncertainty of a multi-ambiguous nature is more easily resolved than uncertainty of an unpredictable nature. Mishel's (1983) definitions of unpredictability and multi-attributed ambiguity reveal that an important difference in the nature of the concerns that are reflected in the two types of uncertainty lies in the individual's ability or inability to do something about them. For example, in terms of multi-attributed ambiguity, if an individual gets what she perceives to be conflicting information about certain aspects of the treatment, she can clarify

the discrepancy by verbalizing her confusion. Levels of unpredictability, however, are dependent upon areas that are not easily verbalized – what *my* pain is going to be like, how long it will take *me* to recover, or how *I* will cope with unexpected bad days. In other words, the majority of questions are not really answerable until the events have been experienced. Thus, it is possible that the significant decrease in unpredictability may occur because the patient has already experienced the outcomes of some of the events that gave rise to the feelings of unpredictability. The unchanging and lower level of multi-attributed ambiguity, however, may be an indication that patients were able to resolve, on an on-going basis throughout hospitalization, the issues giving rise to this type of uncertainty. Future investigations should help clarify the reasons for this difference.

The trajectory of state anxiety

Patients experienced a higher level of anxiety before the operation than after the operation. The significant decrease in anxiety level between Day 1 pre-op and Day 3 post-op was unexpected, in light of other research (Auerbach, 1973; Johnston, 1980). In Johnston's (1980) series of studies, hysterectomy patients showed no significant change between anxiety levels at Day 1 pre-op and Day 2 post-op or Day 4 post-op, however, a significant decrease in anxiety level was found between Day 1 pre-op and Day 6 post-op. One possible explanation for the discrepancy between the findings of this study and those of Johnston's study may be the different forms used to measure anxiety. Although both studies used the Spielberger State-Trait Anxiety Inventory, Johnston used a form that measured both anxiety and depression, while this study used the Spielberger form that measured only anxiety. An alternative possibility may lie in differences in study population between studies. Johnston's respondents may have included patients undergoing either malignant or benign surgery, while, in this study, only women undergoing a hysterectomy for benign disease were included. If this were the case, it is conceivable that anxiety levels would be higher in oncology patients; this might account for Johnston's higher anxiety scores.

Because levels of anxiety were higher before surgery than afterwards, the reduction of preoperative anxiety may be an important goal for nurses. Intervening to reduce mild anxiety is usually unnecessary. However, moderate anxiety may take on characteristics of severe anxiety and necessitate some form of nursing intervention (Francis & Mungas, 1968). The choice of intervention would depend upon the initial nursing assessment of the patient's anxiety level, and on an assessment of the type of uncertainty with which it is associated. Differentiation among unpredictability issues and multi-attributed ambiguity issues associated with the anxiety may be necessary so that nursing interventions can be directed to the appropriate issue.

The relationship between uncertainty and state anxiety

The finding that high-uncertainty women also had higher levels of anxiety throughout the hospitalization course, as compared to low-uncertainty women's levels of anxiety, may have important implications for nursing practice. It may be that low-uncertainty women are able to deal more effectively with the situation than high-uncertainty women, thereby requiring less nursing intervention. If this is the case, nurses may want to direct their efforts toward identifying women who are experiencing high levels of uncertainty and toward planning appropriate interventions to enable them to cope with the situation.

Women who are low in uncertainty may provide invaluable cues as to how best to help women suffering from high levels of uncertainty. A first step toward this end may be to learn more about the factors, be they dispositional or situational, that affect uncertainty levels. This information may provide direction for intervening with high-uncertainty women.

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The authors wish to thank Dr. Nancy Frasure-Smith for her valuable suggestions.

RÉSUMÉ

Incertitude et angoisse des femmes hospitalisées pour subir une hystérectomie

Cette étude visait un double but: (a) analyser le cheminement de l'incertitude et de l'angoisse des femmes au cours de l'hospitalisation et (b) examiner la corrélation entre l'incertitude et l'angoisse. L'échantillon se composait de 20 femmes devant subir une hystérectomie pour cause de tumeur non cancéreuse. On leur a administré la Mishel Uncertainty in Illness Scale (MUIS) et le Spielberger State-Trait Anxiety Inventory (STAI) à trois reprises: le premier jour avant l'opération, le troisième jour après l'opération et le sixième jour après l'opération. Les conclusions sont les suivantes: (a) l'incertitude se compose de deux éléments, à savoir son caractère imprévisible et son ambiguité à causes multiples; (b) le niveau d'incertitude a régressé entre le premier jour avant l'opération et le troisième jour après l'opération, pour se stabiliser ensuite; (c) la régression du niveau d'incertitude s'explique par le changement du caractère imprévisible plutôt que par l'ambiguité à causes multiples; (d) les patientes à niveau d'incertitude élevé et les patientes à bas niveau d'incertitude présentent des niveaux d'angoisse analogues le premier jour avant l'opération et le troisième jour après l'opération, mais il n'en demeure pas moins que les patientes à haut niveau d'incertitude ont un niveau d'angoisse plus élevé le sixième jour après l'opération par rapport à leurs homologues à faible niveau d'incertitude.