

# A Critical Review of Literature: Mid-Range Nursing Theory of Uncertainty in Illness\*

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## I. Introduction

It has long been an area of interest to social scientists to investigate uncertainty in illness and to study tolerance of uncertainty in patients living with illness. Since the early 1980's, the nursing discipline has focused on uncertainty as a main theme of research as well as an area needing assessment in clinical practice because the concept of uncertainty can be applied across diagnostic categories and may be worthwhile in explaining responses to illness (Jessup & Stein, 1985). With the development of instruments for measuring uncertainty in illness and the introduction of the mid-range nursing theory of uncertainty in illness by Mishel (1988), numerous nursing research studies on uncertainty not only in various clinical populations but also in family members of patients and in caregivers have been conducted.

## II. Purpose of the Literature Review

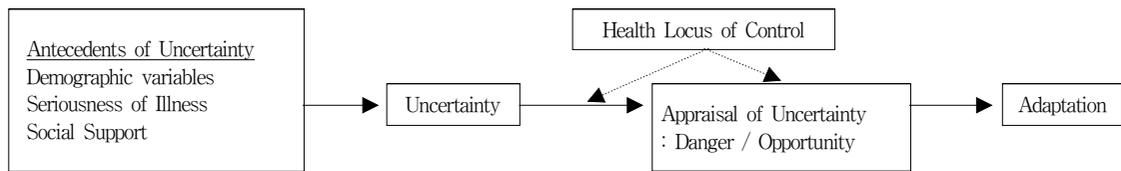
The purposes of this review were to reveal the characteristics and findings of previous research studies that examined the uncertainty model either in a whole or in a part and to discuss their strengths and weaknesses prior to conducting further research studies based on Mishel's Uncertainty in Illness model. Research studies should be performed on the basis of theoretical framework, and throughout those studies the theory was empirically examined. Thus, in turn, those studies' findings are expected to reinforce theory itself by supporting its propositions or expected to revise the model by providing empirical data confuting propositions of theory. Therefore, the critical review of previous research studies plays a pivotal role in guiding further studies by identifying the knowledge gap between what we have known and what we have not known.

## III. Method

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<Figure 1> Mishel's model of uncertainty in illness

The uncertainty in illness model explains how patients cognitively process illness-related events as stimuli and structure the meaning of those events (Mishel, 1988). Since there are extremely few studies that test the whole model of uncertainty in illness, this review included the research studies that examined the relationships between or among the concepts in the model of uncertainty in illness. In addition, this review was preceded by examining each relationship between concepts represented by each arrow in the model<Figure 1>.

#### IV. Results

##### 1. Antecedents of Uncertainty in Illness

According to Mishel's theory (1988), uncertainty in illness occurs in four classes of events: 1) discomfort, incapacitation, and other symptoms of illness; 2) management of special treatment procedures and their side effects; 3) dealing with technical environments including relating with medical and other health-care providers; and 4) assessment of the future and reassessing independence. On the basis of her model, many antecedents of uncertainty have been studied. These have included seriousness of illness, specificity of diagnosis, social support, health care provider, and demographic variables.

Among diverse demographic variables, age, education, and socioeconomic status have been most often studied with uncertainty. Since those variables are associated with the degree of cognitive capacities for categorizing events, it is

assumed that older, more highly educated persons or persons in a higher socioeconomic status perceive less uncertainty (Mishel, 1997). Education plays a primary role in providing a person's knowledge base, better interpretation of symptoms, and a larger repertoire of references so that event familiarity is enhanced (Mishel & Braden, 1988). However, research findings do not support the association of age or socioeconomic status with uncertainty (Andersson-Segersten, 1991; Christman, et al., 1988; Mishel, 1984; Mishel, Hostetter, King, & Graham, 1984; Stetz, 1989; Webster & Christman, 1988; White & Frasure-Smith, 1995; Wong & Bramweel, 1992). According to the literature, education has an inconsistent pattern of effects in relation to uncertainty. Education has been shown as both negatively related and unrelated to uncertainty. An inverse relationship between education and uncertainty, such that the more educated person perceives less uncertainty than the less educated one, was demonstrated in large sample (N=227) in research studies by Hilton (1994) in breast cancer patients and in longitudinal study by Christman and her associates (1988) in myocardial infarction patients. In contrast, the results from works by Mishel (1984) in medical patients, Mishel and her colleagues (1984) in newly diagnosed gynecological cancer patients, Andersson-Segersten (1991) in intensive care unit patients, Wong and Bramwell (1992) in breast cancer patients after mastectomy, and Bailey and Nielsen (1993) in women with rheumatoid arthritis revealed no significant

relationship between education and uncertainty. The inconsistent results of studies on the relationship between education and uncertainty and may be due to small sample sizes (Andersson-Segersten, 1991; Wong & Bramwell, 1992; Bailey & Nielsen, 1993), and translation of the scale into another language (Andersson-Segersten, 1991).

#### 1) Seriousness of Illness & Uncertainty in Illness

With the use of different measurement methods of illness severity, different relationships between seriousness of illness and uncertainty have been found. Seriousness of illness has been positively related to uncertainty with an objective measurement (Mishel, 1984; Hilton, 1994; Andersson-Segesten, 1991) as well as the subjective measurement of illness severity (Hawthorne & Hixon, 1994; Braden, 1990a, 1990b). Mishel (1984) found a significant relationship between uncertainty and severity of illness measured by the Seriousness of Illness Rating Scale (Wyler, Masuda, & Holmes, 1968) among different diagnoses. More uncertainty occurs in patients with varied severe or life-threatening diseases. In the works of Braden (1990a, 1990b) in the large sample sizes of 288 and 386 of rheumatoid disease, the positive relationship between uncertainty and perceived severity of illness was shown.

In contrast, other studies failed to support the significant relationship between uncertainty and seriousness of illness (Mishel, Hostetter, King, & Graham, 1984; Christman et al., 1988; Webster & Christman, 1988). Studies reporting no relationship between seriousness of illness and uncertainty were conducted in relatively small sample sizes as compared to those supporting the significant relationship.

Another possible explanation for inconsistent results from these studies is diverse ways of

operationalization of seriousness of illness' such that it was operationalized as objectively measured severity of varied illnesses (Mishel, 1984); objectively measured severity of same illness (Christman et al., 1988); recurrence of disease (Hilton, 1994); repeat hospitalization (Andersson-Segesten, 1991); perceived severity of illness (Braden, 1990a, 1990b; Mishel, Hostetter, King, & Graham, 1984; Webster & Christman, 1988); and functional status (Hawthorne & Hixon, 1994). Therefore, the findings from previous studies cannot be considered to be conclusive.

#### 2) Social Support & Uncertainty in Illness

Social support may reduce uncertainty by modifying ambiguity concerning the state of illness, the complexity perceived in treatment, and the unpredictability of the outcome and future (Mishel, 1988; White & Frasure-Smith, 1995). Social support offers feedback about the meaning of events, and the discussion with significant others may facilitate a person's ability to clarify uncertain events (Mishel & Braden, 1987). Social support, as one of the structure providers in Mishel's model, has been empirically examined in relation to uncertainty in illness in several research studies. Scoloveno and her associates (1989) found a negative relationship between perceived social support and uncertainty among 49 adolescents who were receiving treatment for idiopathic scoliosis in an outpatient clinic. The same results were demonstrated in adults with diverse illnesses. For example, uncertainty and social support were negatively correlated in a study of women with gynecological cancer (Mishel & Braden, 1987). Bennett (1993) found that social support had a significant, negative direct effect on uncertainty in postmyocardial infarction patients. Social support reduced the level of uncertainty in patients receiving coronary

angioplasty and coronary bypass surgery (White & Frasure-Smith, 1995). While these empirical studies used each different valid and reliable instrument for measuring social support and the same uncertainty scale, they showed the same effect of social support on uncertainty in diverse clinical populations. Those findings are consistent with theoretical propositions (Lazarus, & Folkman, 1984; Mishel, & Braden, 1987; Mishel, 1988). Thus, the strong relationship between social support and uncertainty has been confirmed.

## 2. Appraisal of Uncertainty in Illness

The event or situation is judged as stressful or benign by the cognitive process of appraisal. In leading to either negative or positive consequence, uncertainty is perceived and evaluated through a person's thought process. This process is considered as appraisal of uncertainty. Appraisal is categorized as either danger appraisal or opportunity appraisal of uncertainty (Mishel, 1988). Appraisal of uncertainty as a danger means that uncertainty is perceived as a threat to well being based on previous personal experiences, and appraisal of uncertainty as an opportunity is explained as construction of a positive meaning for an event or situation based on beliefs or purposeful misinterpretation (Mishel, 1990).

There are several research studies that examine the relationship between uncertainty and appraisal of uncertainty in different populations using the same instruments for uncertainty and appraisal. Mishel and Sorenson (1991) examined the Mishel's model of uncertainty in a sample of 131 women receiving treatment for gynecologic cancer. They found that the women who perceived more uncertainty appraised the uncertainty as a danger; whereas, women who perceived less uncertainty appraised

it as an opportunity. In their findings, both danger and opportunity appraisal of uncertainty regressed on uncertainty, and respectively 25% and 14% of variance in danger and opportunity appraisal of uncertainty were explained by uncertainty when taking into account of the number of variables. The same results were shown in other studies (Bailey & Nielsen, 1993; Mishel, Padilla, Grant, & Sorenson, 1991).

Furthermore, it has been revealed that consequences of uncertainty are influenced by the appraisal of uncertainty as a danger or an opportunity. A strong relationship between emotional distress and appraisal of uncertainty as a danger was found: less distress was reported in patients who appraised uncertainty as an opportunity, and patients with opportunity appraisal of uncertainty emphasized the positive aspect of their situation (Mishel & Sorenson, 1991). While the appraisal of uncertainty as a danger presupposes an expectation of a harmful outcome, the appraisal of uncertainty as an opportunity leads to probabilistic thinking, which allows new alternatives in adjusting to the changing nature of the illness (Mishel, 1990). Additionally, although the majority of studies about uncertainty and adaptation were conducted using Mishel's model of uncertainty in illness as a theoretical framework, they directly linked uncertainty to either negative or positive outcome measures disregarding the process of appraisal of uncertainty. The underlying assumption of these studies was that uncertainty is always negative, and the potential dual role of uncertainty was ignored in these studies.

## 3. Health Locus of Control & Appraisal of Uncertainty in Illness

The concept of locus of control was originally

derived from Rotter's social learning theory (Rotter, 1966). Locus of control is defined as a person's expectation that a certain behavior will result in a certain reinforcement (Rotter, 1966). There are two categories of locus of control: 1) internal locus of control and 2) external locus of control. Internal locus of control refers to one's belief that an event happening to one is contingent upon one's own behaviors or attributes; whereas external locus of control refers to one's belief that an event happening to one results from forces outside oneself, such as luck, chance, fate or the control of powerful others (Rotter, 1966).

The concept of locus of control has been the subject of numerous studies. A few studies have looked at locus of control as a potential moderator of the negative effects of stress on emotional well being. In general, findings from those studies indicate that an individual with an external locus of control is more likely to express psychological dysfunction and emotional distress in a stressful situation than one with an internal locus of control (Mertlich, 1996). Many other studies have examined the effects of the locus of control on health-related behaviors: seeking information (Wallston, Wallston, Kaplan & Maides, 1976); taking medications (Lewis, Morisky, & Flynn, 1978); and keeping clinic appointments (Chan, 1984). Scales of locus of control (Rotter's I-E scale & Levenson's scale) aim to measure generalized locus of control beliefs so that they do not include items specific to expectations about health (Wallston, Wallston, Kaplan, & Maides, 1976). With the need for examining the relationship between specific health behavior expectancies and health outcomes, the concept of health locus of control was introduced, and instruments for measuring it were developed (Wallston, Wallston, Kaplan, & Maides, 1976). Health locus of control refers to individuals' beliefs that their behaviors

determine their health or other forces external to them determine their health rather than their behaviors (Wallston, Wallston, Kaplan & Maides, 1976). Individuals holding an internal locus of control for health are called as 'health-internals,' and persons with an external locus of control for health are labeled as 'health-externals'.

Two plausible interpretations exist for the role of health locus of control in the Mishel's model. First, health locus of control is particularly relevant as a moderator in the relationship between uncertainty and its appraisal (Mishel, 1988). The other interpretation is the direct effect of health locus of control on the appraisal of uncertainty. Since the locus of control has a greater effect on behaviors in ambiguous situations, compared to situations where cues are apparent, it may exert a stronger effect on appraisal of uncertain situations than other personality dispositions (e.g. a sense of mastery or learned resourcefulness) (Mishel, 1988). Unfortunately, none of the studies have examined the impact of health locus of control on the appraisal of uncertainty. Thus, it has not been determined whether the distinct role of health locus of control is a moderator in the relationship between uncertainty and its appraisal or a directly effecting factor on the appraisal of uncertainty.

#### 4. Adaptation

Adaptation is an ultimate goal to achieve in uncertain situations in Mishel's (1988) mid-range theory of uncertainty in illness. Adaptation is defined as biopsychosocial adjustment within the person's individually defined range of usual behavior (Mishel, 1988). The construct of adaptation within the model of uncertainty in illness has been operationalized

in diverse ways. It has been measured in previous studies as emotional distress (Christman, et al., 1988; Hawthorne & Hixon, 1994; Mishel & Sorenson, 1991); psychosocial adjustment (Mishel & Braden, 1987; Mishel, Hostetter, King, & Graham, 1984; Hilton, 1994); quality of life (Braden, 1990a; Hawthorne & Hixon, 1994); and perceived health (Stetz, 1989). Among the operationalizations of adaptation, emotional distress and psychosocial adjustment have been used most often. These have focused on only the psychosocial aspects, disregarding physical aspects. On the other hand, quality of life and perceived health are composed of multidomains such as physical, psychosocial, and spiritual. Therefore, based on the definition of adaptation in the theory of uncertainty in illness, a concept with diverse dimensions will be more appropriate for measuring the construct of adaptation.

## V. Conclusion & Suggestion

Throughout this review, the current status of knowledge on uncertainty in illness model and what needed to be investigated were identified in order to confirm the validity and usefulness of theory. Based on the findings from this review, the recommendations for future research studies are suggested as follows:

1) Examine the association of education with uncertainty; 2) Examine the relationship between seriousness of illness and uncertainty with the similar ways of operationalization of the variable 'seriousness of illness'; 3) Empirically examine the role of health locus of control in the model whether it functions as a moderator in the relationship between uncertainty and the appraisal of uncertainty or directly has an effect on the appraisal of uncertainty; 4) Include the portion of 'appraisal of uncertainty' of the model as examining the

relationship of uncertainty on its consequences; 5) Select a concept with diverse dimensions for measuring the construct of adaptation including physical aspects.

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- 국문초록 -

### 중간범위 간호이론인 Mishel의 질병에서의 불확실감에 관한 문헌고찰

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연구목적: 본 연구는 대표적인 중간범위 간호이론인 Mishel의 Uncertainty in Illness 모델에 관한 연구문헌 고찰이다. 기존의 간호이론에 근거해서 새로운 간호연구가 시행되고 있으며, 이러한 연구들의 결과는 또한, 근거이론을 지지 및 수정보완을 통해서 간호이론의 타당성과 유용성을 강화해왔다. Mishel의 모델에 근거한 불확실감에 관한 연구의 수행에 앞서, 근거이론에 관한 현 지식의 상태와 부족한 영역을 탐구하여, 이에 기여할 수 있는 연구계획을 수립하는데 문헌고찰의 주요한 목적이 있다.

연구방법: 본 문헌고찰은 중간범위 간호이론인 Mishel's Uncertainty in Illness에서의 주요 개념간의 관계에 대해서 선행연구 결과를 토대로 분석하였다.

연구결과: 불확실감의 선행요소들(antecedents)과 불확실감, 불확실감의 평가(appraisal of uncertainty), 불확실감 모델내에서 건강 통제위(health locus of control)의 역할, 및 불확실감의 결과, 적응(adaptation)에 관하여 고찰하였다.

결론: 문헌고찰 결과로서, 불확실감 이론에 관한 현 지식의 상태를 확인하였고 이 이론의 타당성과 유용성을 확인하기 위한 추후연구에 대한 방향도 제안되었다.

주요용어 : 불확실감, 간호이론, 문헌고찰

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