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EFFECTS OF ENVIRONMENTAL FACTORS AND INDIVIDUAL TRAITS ON WORK STRESS AND ETHICAL DECISION MAKING

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Nurses' ethical decision making is a critical dimension of practice. Yet, the patient care environment is a major source of psychosocial stress and strain for many nurses. Nurses daily encounter fundamental ethical dilemmas that arise as a consequence of the complexity of their roles and their positions in the organizational hierarchy (Ketefian, 1987, p.14; Swider, McElmurry & Yarling, 1985) and may feel guilt, frustration and resentment when they cannot meet the demands of their patients (Dolan, 1987).

Various authors have attempted to address stress-related phenomena and ethical decisions nurses make in ethical dilemmas (e.g. Hinshaw, Smeltzer & Atwood, 1987; Crisham, 1981; Ketefian, 1981a, 1981b, 1985; Swider, McElmurry & Yarling, 1985). It is contended that a better understanding as to what affects nurses' ethical decision making and stress is needed for both conceptual clarification and practical implications.

Recognizing this void, this study was aimed at examining the causal relationships among work autonomy, standardization, individual traits (locus of control, age, experience, moral reasoning, nursing

role conception), work stress and ethical decision making in practice by constructing and testing a theoretical framework. It is expected that this study will contribute substantive explanation concerning the relationships between nurses' ethical decision making and its antecedent variables.

Theoretical Framework

This study employed a theoretically based research paradigm that included different levels of variables simultaneously. The rationale to move toward a more rigorous approach lies in the notion that an individual's perceived stress and ethical decision making must be an outcome of both individual and contextual forces. The knowledge and ability of the nurses, environmental circumstances, and the needs of the patient all influence the relationships; their nature and form change as people and circumstances change (Curtin, 1988).

Given this notion, Katz and Kahn's (1966) open systems theory of organizations served as a conceptual basis in linking structural characteristics

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(standardization and autonomy of work) to individual human behavior (ethical decision making) in building the conceptual framework. Lack of autonomy may have a considerable effect on nurses' stress and ethical decision making. Professional nurses who are educated to make professional judgments need the freedom and flexibility to establish therapeutic relationships with patients (Curtin, 1988). However, nurses may not be free to fulfill their moral obligation to patients, since institutional structures systematically create formidable obstacles to responsible action (Yarling & McElmurry, 1986). Indeed, the difficulties that nurses are faced with in clinical settings might affect the quality of their decisions and the resulting nursing care. Several organizational studies (e.g., Colarelli, Dean & Konstans, 1987; Brown, 1986; Jackson, 1983; Parasuraman & Alutto, 1984) have suggested that autonomy is a key job dimension enhancing work

motivation and performance. Empirical research to investigate the direct relationships between autonomy, stress, and nurses' ethical decision making has been rare so far.

In addition, Kahn, Wolfe, Quinn, and Snoek's (1964) theory of stress, along with Kohlberg's (1978) theory of moral development provided basic foundations in developing the conceptual model of this study. The contribution of these theories is to clarify how individuals process information in the form of stimuli present in their environment and what responses they produce to these stimuli. Specifically, Kahn et al. (1964) proposed that individual characteristics are intervening variables between stressors and strain. Research to date on problems of stress at work supports the importance of personality, and the role of individual attributes and interpersonal context as modifying the relationship between specific stressors and strains and their

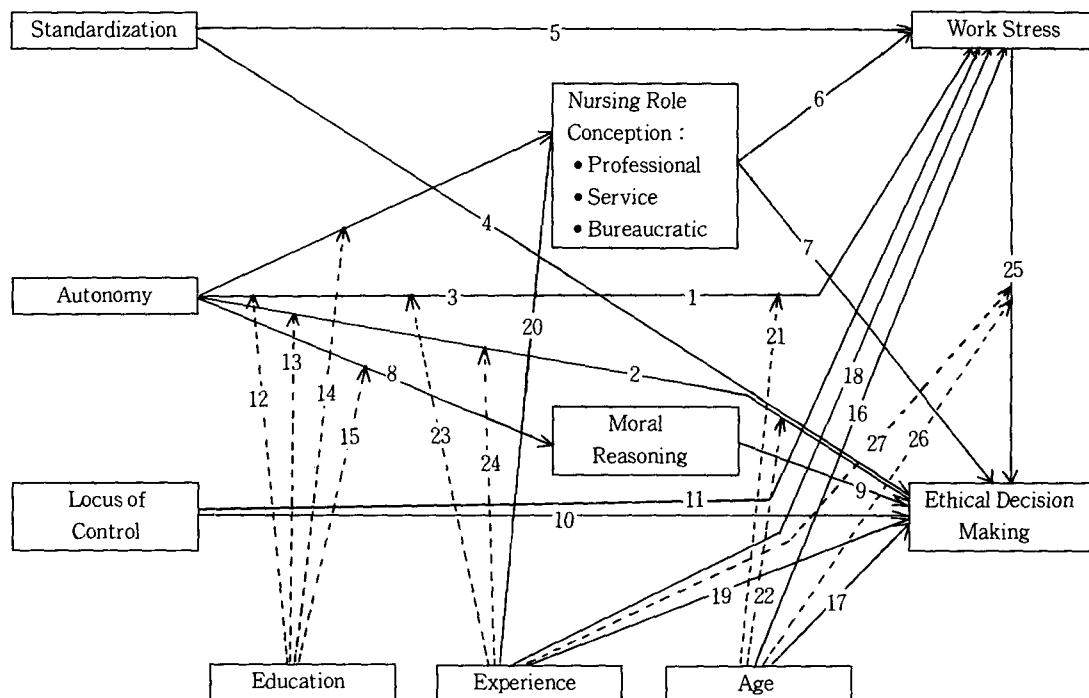


Figure 1. A Conceptual Model for Nurses' Work Stress and Ethical Decision Making

consequences (Katz & Kahn, 1978). In this study, the ethical decision making in nursing was considered to be a consequence of work stress, since the work stress might interfere with the nurses' thoughtful approach to decision making.

Drawing from the foregoing, a series of hypotheses were developed as depicted in Figure 1. Stated briefly, the model in Figure 1 predicts that lack of autonomy, standardization, and locus of control are primary antecedents to nurses' work stress and ethical decision making. The effects of autonomy on work stress and ethical decision making are hypothesized to be direct. The effects of autonomy on work stress and ethical decision making are also hypothesized to be indirect—the indirect effect of autonomy on work stress is mediated by the extent to which autonomy leads to professional and service role conceptions; the indirect effect of autonomy on ethical decision making is mediated by the extent to which autonomy leads to moral reasoning. Nursing role conception is predicted to affect both work stress and ethical decision making. Moral reasoning is assumed to affect only ethical decision making. Work stress is hypothesized to lessen sound ethical decision making. Finally, education, age, and experience are expected to have moderating effects on the relationships between autonomy and moral reasoning, autonomy and work stress, autonomy and ethical decision making, and work stress and ethical decision making.

The model portrayed in Figure 1 is presented to examine the causal relationships among the variables. However, since the proposed model includes relations that have never been tested before and is the first attempt to be empirically tested, the investigators' objective is basically "exploratory".

Method

Design

The data used in this study are based on a cross-sectional survey design. The original data

were collected for the study titled "professional and bureaucratic role concepts and moral behavior of nurses," conducted by Ketefian (1985).

Sample

A variety of health care facilities in the Mid-Atlantic region were selected to participate; these included hospitals, long-term care, community health, industry, and HMO facilities. The total sample of 224 registered nurses represents a response rate of 73.1 percent. Approval to carry out the project was secured from the Human Subjects' committee of the original investigator's home institution. Participation was voluntary and all respondents were assured of anonymity. Verbal and written explanation was provided before each subject signed a consent form. Instrument packets were given to the volunteers and they were allowed to take the packets home and were requested to return in preaddressed, stamped envelopes (Ketefian, 1985, p.249).

A majority of the nurses (n=139, 64%) were employed in acute care settings. These nurses were relatively young (58% younger than 35 years); 56% (n=121) had practiced nursing less than 10 years. Whites composed 80% (n=168) of the subjects, female nurses were 96% (n=200), and 57% (n=119) were Catholic. Also 51% (n=109) of the respondents had completed a four-year college degree program, or had a higher level of education.

Measures

Although some modifications were made for some variables, most variables were used as they were originally measured. Most of the concepts were assessed by indexes of several questionnaire items which were summed together.

Autonomy and standardization. Autonomy was measured by the instrument "Perceived Job Characteristics" (PJC), developed for the original study (Ketefian, 1986). The PJC involves respondents' perception about: (1) participation in decision making, (2) self-direction, (3) latitude, and

(4) standardization. In this study, a global measure of autonomy involved only the three subscales (participation in decision making, self-direction, latitude), separating standardization. The rationale for this was that standardization and other three overall subconcepts would be differently related to outcome variables, although they are frequently treated as if they are a single dimension.

Cronbach's alpha for each original scale was : participation in decision making (.78), self-direction (.57), and latitude (.61). The present study, on the basis of previous research, assessed nurses' autonomy in terms of the above three dimensions. However, two items of latitude (the administration is willing to by-pass regulation to help nurses ; the administration is willing to by-pass regulations to help patients) were eliminated since those were considered not to account for nurses' autonomy conceptually. The Cronbach's alpha for the latitude scale in this sample was .59. Alpha for total autonomy was .83. Internal consistency reliability for standardization was .72.

Work stress. Work stress was defined as the misfit between the individual and his/her work demands. Included in the PJC, work stress was assessed on the basis of four items. Cronbach's alpha for this scale was .73.

Moral reasoning. Defined as organized and systematic thought processes which depend to a great extent on a cognitive level of development and the logical stage the person has attained (Ketefian, 1981a, p.100), moral reasoning was measured by the Defining Issues Test (DIT) (Rest, 1976 ; 1979) (for details, see Ketefian 1981b, p.172).

Nursing role conceptions. Nursing role conceptions (NRC) reflect nurses value orientations, which represent their internalized role expectations. NRC were measured by a modified Nursing Role Conception Scale (Pieta, 1976), which was originally developed by Corwin (1960). The questionnaire involves a Likert-type scale which measures the respondent's loyalty to three role components : nursing profession (professional role conception-PRC), ser-

vice to the patient (service role conception-SRC), and hospital bureaucracy (bureaucratic role conception-BRC). Each item on the scale includes two statements for each situation : the statement of what should be the case and the statement of what is actually the case. The sum of the "should be" items yields a normative score ; the sum of the "actually do" items yields a categorical (realistic) score. For the purpose of this study, the categorical scores were used. The rationale for this was that categorical role conceptions would be more dominant for nurses in organizational settings in conjunction with their behavioral outcomes such as making ethical decisions.

Cronbach's alpha for the categorical scores in this study were : PRC=.68, SRC=.78, BRC=.56.

Ethical decision making. Ethical decision making was defined as the respondent's assessment of the extent to which nursing actions in simulated ethical dilemmas that are in accord with the tenets of the nursing profession's ethical code are likely to be implemented in practice (Ketefian, 1985, p.249). The Judgments About Nursing Decisions (JAND) instrument designed by Ketefian (1981b), was used to measure this variable. There are 39 statements under six stories (for details, see Ketefian, 1985, p. 249-250). The subjects check "yes" or "no" twice for each statement. For column A, whether they think the nurse experiencing the dilemma in the story should or should not engage in that action : for column B, whether they think the nurse experiencing the dilemma is likely to engage in the nursing action. Only column B scores were used in measuring this construct. The reliability on column A had been consistently low due to the low variance in scores. The Cronbach's alpha for the JAND column B was .75 in this sample.

Locus of control. Locus of control reflects respondent's inclination to assign importance to luck, chance, and fate rather than to ability and hard work as influence over outcomes. Locus of control was measured using the Internal-External locus of control (I-E) scale developed by Rotter (1966).

The score is the total number of external choices. Reliability estimates for the instrument were relatively stable ranging from .65 to .79 (Rotter, 1966) (.70 for this study).

Analysis of Data

The linear structural relations (LISREL VI) computer program was used to test developed hypotheses and the fit of the proposed conceptual model to the data. The input data was a correlation matrix based on pairwise deletion of missing data. Using the correlation matrix as an input to the LISREL program, standardized estimates were presented.

In addition, correlational analyses were executed to check for the moderating effects of the demographic variables (i.e., age, experience, and education) on the particular relationships between pairs of variables. Each moderating variable was divided into two groups (high vs. low); the particular coefficients between the variables were then compared for the two groups.

Results

Multivariate Modeling

In order to allow estimation of the model, several parameters were constrained (Figure 2). First, for those constructs with only a single measure (indicator), it was necessary to fix them prior to analyses of parameter estimates. These parameters are noted with parentheses. The coefficient alpha reliabilities were used to select the values at which the factor loadings and error variances were set. For the constructs of age and experience, it was assumed that there were no measurement errors; thus they were fixed to 1.0.

Second, one coefficient for each endogenous variable that was measured by multiple items was constrained to 1.0. This way can establish the scales of latent variables (factors). The indeterminacy caused by the lack of scale for the common factor makes it impossible to distinguish between the case in which a factor has a large variance and the loadings on it are small, and the case in which the

variance is small and the loadings on it are large (Long, 1983, p.49).

Model A (Figure 2) presents the causal path coefficients of theoretical interest shown in Figure 1. Five of them—standardization, autonomy, locus of control, age, and experience—are exogenous variables; and other six are endogenous variables—BRC, PRC, SRC, moral reasoning, work stress and ethical decision making. There were 21 initial measured variables relevant to the 11 latent constructs. To arrive at a more improved model, A2 (Figure 3) was developed by releasing the parameters with the values of modification indexes more than 5, and by trimming the parameters with less than .05 values.

Assessment of overall model fit. Reported in Table 1 are five measures of the overall adequacy of each of the models. In general, these measures represent the difference between the correlation matrix predicted by the model and one actually observed in the data. As indicated in Table 1, each model turned out to have a modest fit.

The probability levels ($p=.000$) for the chi-square values indicated that models A and A2 might not adequately reproduce the observed matrix S . But χ^2/df values for the two models were 2.05 and 1.43 respectively, which could be suggested as relatively good on the ground that a χ^2 less than two or three times the degrees of freedom is acceptable (Carmines & McIver, 1981). Meanwhile, it needs to be recognized here that χ^2 as well as χ^2/df should not be regarded as conclusive in the sense that they are sensitive to sample size. In addition, the other four measures of the goodness of fit index (.88), adjusted goodness of fit index (.82), and root mean square residual (.07), and CN (129) all showed only a fair fit for model A. The modification model A2 yielded better fit indexes (GFI=.91; AGFI=.87; CN=185) than the original model. Although the improvement of the fit was not dramatic, the explained variance for endogenous variables, especially ethical decision making, was substantially improved from 60% to 85% (see Figures 2 & 3).

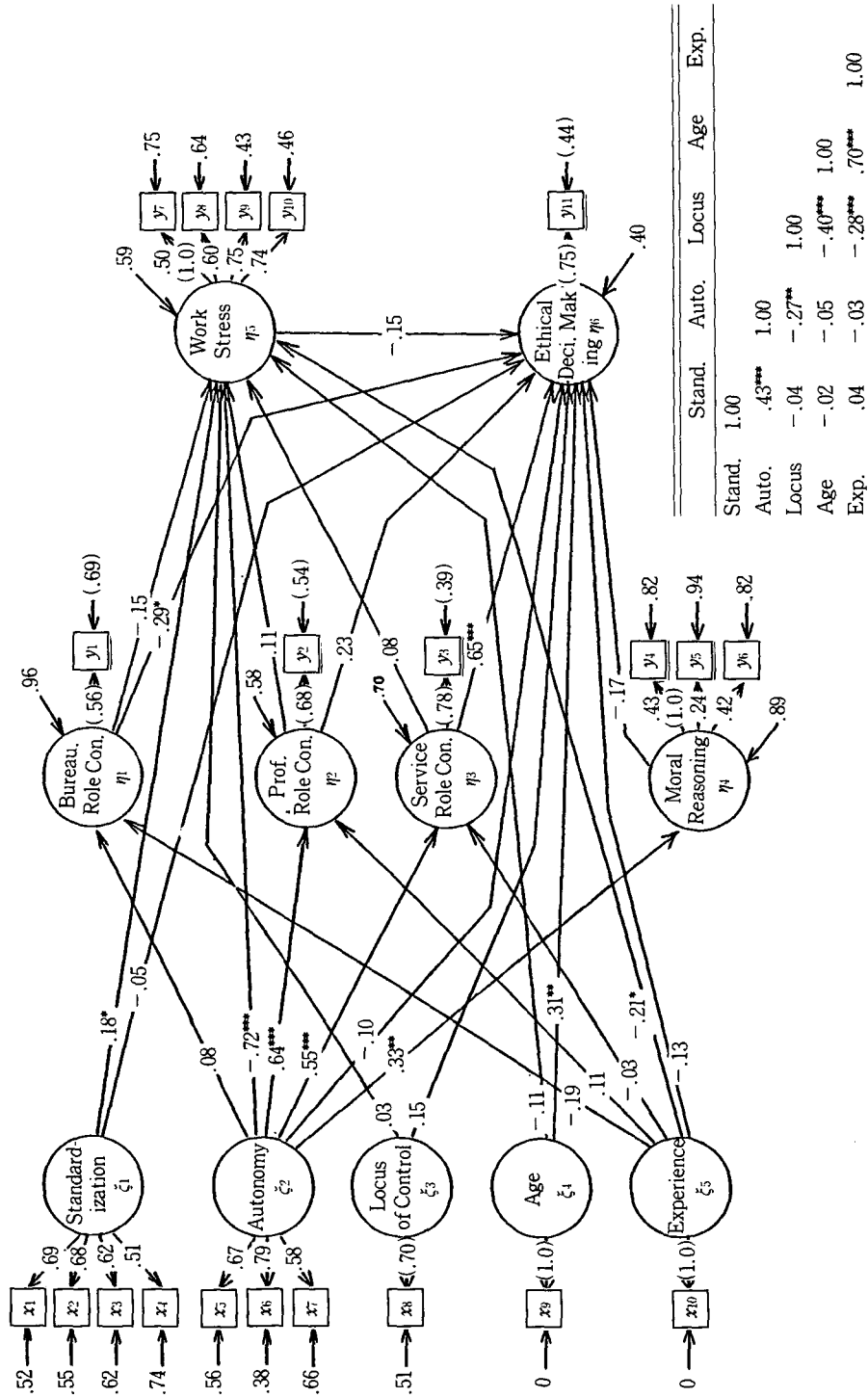


Figure 2. Model A and its LISREL Estimates

Note. 1) For clarity, correlations among the exogenous variables are not included in the figure (see PHI matrix).

2) Fixed parameters are shown in parentheses ; and ϕ (1, 1) = ϕ (2, 2) = ϕ (3, 3) = ϕ (4, 4) = ϕ (5, 5) = 1.0

3) * $p < .1$, ** $p < .05$, *** $p < .01$.

4) Abbreviations : x_1 =clarity of responsibility ; x_2 =clarity of job descriptions ; x_3 =clarity of rules ; x_4 =uniformity ; x_5 =participation in decision making ; x_6 =self-direction ; x_7 =latitude ; x_8 =DITST 5A ; x_9 =DITST 5B ; x_{10} =DITST 6 ; x_{11} =job interference ; x_{12} =amount of work ; x_{13} =job pressure ; x_{14} =work load.

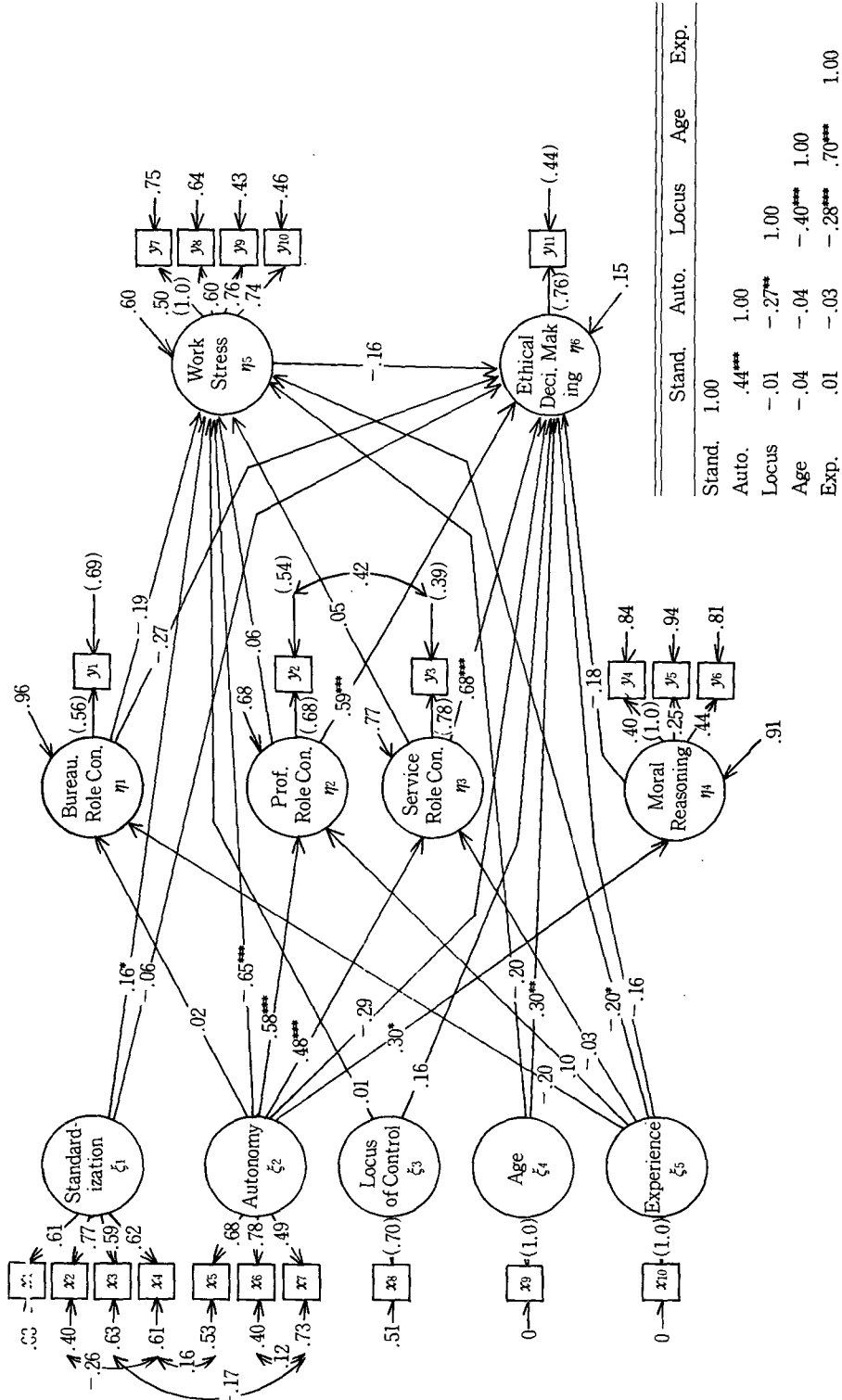


Figure 3. Model A2(Modified Version) and its LISREL Estimates

Note. 1) For clarity, correlations among the exogenous variables are not included in the figure (see PHI matrix).

2) Fixed parameters are shown in parentheses ; and $\phi(1, 1) = \phi(2, 2) = \phi(3, 3) = \phi(4, 4) = \phi(5, 5) = 1.0$

3) * $p < .1$, ** $p < .05$, *** $p < .01$.

4) Abbreviations : x_1 =clarity of responsibility ; x_2 =clarity of job descriptions ; x_3 =clarity of rules ; x_4 =uniformity ; x_5 =participation in decision making ; x_6 =self-direction ; x_7 =latitude ; x_8 =DITST 5A ; x_9 =DITST 5B ; y_1 =Moral Reasoning ; y_2 =Bureau. Role Con. ; y_3 =Prof. Role Con. ; y_4 =Service Role Con. ; y_5 =Work Stress ; y_6 =Ethical Deciding ; y_7 =job interference ; y_8 =amount of work ; y_9 =job pressure ; y_{10} =work load.

Finally, the root mean square residuals were .07 or .08, suggesting only modest misspecification. Most normalized residuals were less than two in magnitude, suggesting that the models fit data adequately. Similarly, Q-plots showed that the data moderately fit with the conceptual model: the slopes were one. The Q-plot is a plot of the normalized residuals against normal quantiles; it is an effective summary of the fit (Jöreskog & Sörbom, 1986).

Table 1. Overall Goodness of Fit for Alternative Models.

Model	df	χ^2	χ^2/df	RMSR	GFI	AGFI	CN
A	161	330.75	2.05	.07	.88	.82	129
A2	158	226.03	1.43	.06	.91	.87	185

Note. RMSR=root mean square residual; GFI=goodness of fit index; AGFI=adjusted goodness of fit index; CN=critical number.

Parameter estimates of the measurement model.

All linkage (λ 's) between observed measures and latent constructs were of reasonable magnitude. Considering all kinds of λ 's in model A and model A2, λ 's and λ 'y's ranged from .24 to .79, except for the constrained parameters. The loading of self-direction on autonomy was highest ($\lambda_{x26}=.79$ in model A), whereas the link between DITST 5B and moral reasoning turned out to be the lowest ($\lambda_{y45}=.24$ in model A). In addition, the variances for the disturbance terms were shown to be moderate to high (from .31 to .94). This implies that the observed measures tapped the relevant underlying concepts adequately except for the measures of moral reasoning which indicated low reliability.

Overall, the total coefficients of determination for x were 1.0 for each variable; for y, .98 to .996. These total coefficients for x and y provide evidence that the measurement model was excellent. The coefficients of determination reflect that all the observed variables jointly serve well as measurement instruments for the corresponding latent variables. (Jöreskog & Sörbom, 1986).

Parameter estimates of the structural model.

The magnitude of the links between the exogenous

variables ranged from $-.40$ to $.70$. Quite understandably, age and experience were most strongly related to each other ($r=.70$).

As hypothesized, the two models indicated that autonomy has a strong negative effect on work stress, $\gamma_{52}=-.72, -.65$. Autonomy also showed substantial positive effects on professional role conception ($\gamma_{22}=.64, .58$) and service role conception ($\gamma_{32}=.55, .48$) as expected, but showed little effect on bureaucratic role conception ($\gamma_{12}=.08, .02$). Further, the models showed, as predicted, that autonomy has a positive effect on moral reasoning; $\gamma_{42}=.33, .30$. However, autonomy was found to have a negative direct effect on ethical decision making: $\gamma_{62}=-.10, -.29$. Although the effects were not statistically significant, this finding seems to be geared to a clue that perceived autonomy might not act directly as contextual factor for improving nurses' ethical decision making.

Standardization was found to have a slightly positive effect on work stress ($\gamma_{51}=.18, .16$). This result is indicative of the probability that a high level of standardization increases work stress. Standardization also showed a slight negative impact on ethical decision making ($\gamma_{61}=-.05, -.06$).

As for locus of control, it did not have a considerable effect on work stress ($\gamma_{53}=.03, .01$); unexpectedly, however, it had a mild positive effect on ethical decision making ($\gamma_{63}=.15, .16$). Both the two parameters were not statistically different from 0.

As hypothesized, age negatively affected work stress ($\gamma_{54}=-.11, -.20$) and had a positive effect on ethical decision making ($\gamma_{64}=.31, .30$). As models A and A2 indicate, experience was found to have a negative effect on work stress ($\gamma_{55}=-.21, -.20$). Contrary to expectation, however, experience had a slightly negative effect on ethical decision making ($\gamma_{64}=-.13, -.16$).

The direct effect of work stress on ethical decision making indicates that work stress had a slightly negative effect on ethical decision making ($\beta_{65}=-.15, -.16$). As expected, professional role conception ($\beta_{62}=.23, .59$) and service role concep-

tion ($\beta_{63}=.65, .68$) were found to have considerable effects on ethical decision making. Bureaucratic role conception was found to have a negative effect on ethical decision making ($\beta_{61}=-.29$ and $-.27$). Surprisingly, moral reasoning was found to have a negative effect on ethical decision making ($\beta_{64}=-.17, -.18$), although it was not statistically significant at .05 level.

Bureaucratic role conception revealed a slightly negative effect on work stress ($\beta_{51}=-.15, -.19$); professional role conception ($\beta_{52}=.11, .06$), and service role conception ($\beta_{53}=.08, .05$) exhibited little effect on work stress.

Overall, the analyses showed a considerable explanatory power for each of the endogenous variables. Model A2 accounted for 85 percent of the variance in ethical decision making ($\psi_6=.15$), whereas model A explained 60 percent of the variance in ethical decision making ($\psi_6=.40$). The models also showed that about 40 percent of work stress ($\psi_5=.59, .60$) was explained by exogenous variables and nursing role conceptions. Finally, professional and service role conceptions were moderately explained (20-40%), while bureaucratic role conception was little explained (4%).

Total effects. Total effects can reveal a relationship which would be hidden by the direct effects alone. Autonomy was found to have a negative direct effect on ethical decision making ($\gamma_{62}=-.10, -.29$), which was in the opposite direction to the proposed hypothesis. But the total effect of autonomy on ethical decision making was substantially positive, varying from .40 to .43. This result can be explained by the following facts: (1) autonomy had a strong positive direct effect on PRC and SRC, and PRC and SRC had strong positive direct effects on ethical decision making; (2) autonomy had a strong negative direct effect on work stress, and work stress also had a negative direct effect on ethical decision making; and hence, (3) the total effect of autonomy on ethical decision making was strong and positive.

Moderating Effects

In order to examine the moderating effects of nurses' education on the particular relationships, the sample was divided into two educational groups: the technical nurses (associate or diploma program), and the professional nurses (baccalaureate or higher degree program in nursing). Although no significant differences resulted for any relations between the two groups, the results indicate that PRC and SRC were correlated with perceived job autonomy more strongly in the professional nurse group ($r=.39$ and $.31$) than the technical nurse group ($r=.24$ and $.24$). As predicted, the professional nurse group ($r=-.42$) exhibited a stronger relationship between autonomy and work stress than the technical nurse group ($r=-.33$). The result implies that work stress of the professional nurse group might be more strongly affected by autonomy than that of the technical nurses. Interestingly, however, the professional nurse group did not seem to be affected by autonomy in making ethical decisions ($r=.08$), whereas the technical nurse group did ($r=.23$). Likewise, moral reasoning of the professional nurse group ($r=.14$) appeared to be less affected by autonomy than that of the technical nurses group ($r=.25$).

To examine the moderating effects of experience, the sample was divided into two experience groups at median level: low experience group (less than ten years), and high experience group (over ten years). Work stress was moderately related to perceived autonomy for the two groups, revealing no significant difference between the groups. The correlations between autonomy and ethical decision making, and between work stress and ethical decision making were also not statistically different for the two groups. However, the correlations between perceived autonomy and moral reasoning were significantly higher for the low experience group ($r=.31$) than for the high experience group ($r=.05$). Further, professional and service role conceptions seemed to be more strongly related to perceived autonomy in the low experience group

than in the high experience group.

To explore the moderating effects of age, the sample was divided into two age groups at the median level : younger nurse group (less than or equal to 35 years old) and older nurse group (over 35 years old). A series of comparisons led to no significant differences between the two groups. The importance of perceived autonomy, however, is more pronounced in the younger nurse group. The correlations of perceived autonomy and other related variables were higher in the younger nurse group than in the older group, showing the greater impact of perceived autonomy on young nurses. In addition, the relationships between work stress and ethical decision making were also higher in the younger nurse group than in the older nurse group.

To summarize, the results of this study highlighted autonomy as a powerful predictor of work stress, ethical decision making, and other endogenous variables such as professional role conception, service role conception, and moral reasoning. In contrast, locus of control as an individual variable turned out to have poor effects on work stress and ethical decision making. Also, professional and service role conceptions were the most important mediators between autonomy and nurses' ethical decision making. The findings for the moderating effects of demographic variables showed that the younger or less experienced nurses tend to be more strongly affected by the degree of perceived job autonomy.

Discussion

LISREL analyses demonstrated that the conceptual framework moderately reproduced the relations in the data. The results indicated that the presented models fit the data moderately, although the modified model revealed more improved fit than the original model. This study clearly demonstrated that autonomy as an environmental factor might be much more important than any other individual factor in

predicting nurses' work stress and ethical decision making. The models showed a considerable explanatory power for each of the endogenous variables.

With respect to the effects of exogenous variables, the impact of autonomy on endogenous variables—nursing role conceptions, moral reasoning, work stress, and ethical decision making—were the most notable. First, perceived autonomy exhibited a strong negative effect on work stress, meaning that increased self-direction, participation in decision making and role latitude enable nurses to deal more effectively with stressful work experience. This finding is consistent with numerous organizational studies which have investigated the effect of autonomy on stress (e.g., Jackson, 1983 ; Karasek, 1979 ; Parasuraman & Alutto, 1984).

An important finding was the substantial positive total effect of autonomy on ethical decision making. The analyses indicated, however, that autonomy had no direct effect on ethical decision making. Rather, the *finding* suggested that autonomy influenced ethical decision making only indirectly through its impact on professional and service role conceptions. Further, autonomy showed substantial direct positive effects on professional role conception and service role conception. This finding implies that lack of autonomy undermines the desirable development of nurses' professional and service role conceptions. Meanwhile, findings supported the hypothesis that autonomy increases moral reasoning.

For the effects of standardization on endogenous variables, findings revealed that a high level of standardization increases work stress. Further, the result showed a nonsignificant, negative direct effect on ethical decision making. A possible interpretation of these findings is that standardization might be a barrier in cases where flexible actions are needed. Furthermore, the small magnitude of the path coefficients for these relationships may be explained by the fact that some personality variables could play important roles. For example, Marino and White's (1985) study found that

formalization was positively related to job stress among internals and negatively related to stress among externals. Additional studies are needed to substantiate these relationships.

Locus of control was found to have little effect on both work stress and ethical decision making, which indicated that locus of control may not significantly affect nurses' work stress and abilities to make sound ethical decision. Another important finding was that age and experience had significant negative causal effects on work stress. With experience on the job, nurses seem to get accustomed to the circumstances of the work, and better able to handle stress. As for ethical decision making, however, age and experience showed different results : age had a positive effect on ethical decision making, while experience showed a negative effect. A possible interpretation for the former result is that the older nurses would be more mature and wiser in dealing with ethical dilemmas. The latter finding can also be interpreted to mean that the more experienced nurses are likely to be jaded and thus tend to use more routinized approaches.

This study also provides evidence that nurses who have high professional and service role conceptions will show high performance of patient care including high moral judgment. Professional and service role conceptions, therefore, need to be reemphasized for enhancing the level of nurses' ethical decision making.

The causal effect of moral reasoning on ethical decision making was opposite to what was hypothesized, although the moderate path coefficients ($\beta = -.17, -.18$) did not reach an acceptable significance level due to large standard errors. The fundamental reason for this result seemed to lie in the unreliable measure which showed deficiency in assessing the construct, moral reasoning. In conjunction with the possible measurement problem, moral reasoning might not have a real meaning in nurses' ethical decision making as suggested by Huggins and Scalzi (1988). Conceivably, the finding could also be attributed to the incongruence of individual's knowledge and action. It reminds us of the

adage that knowing is one thing, doing is another. However, it is worth mentioning that this finding is quite different from Ketefian's (1981b) report that moral reasoning was positively related to ethical decision making. Certainly, further research on this is needed.

This study also suggests that a contextual factor like autonomy is more important in the younger or less experienced nurses than in the older or more experienced nurses. On the other hand, comparison of the professional and technical nurse groups implies that professional nurses depend less on the degree of organizational autonomy in their moral judgment than technical nurses. However, professional nurses tend to feel higher work stress for the same level of perceived lack of autonomy in work settings than technical nurses.

Limitations

Although the respondent nurses in this study were drawn from a variety of health care settings, the majority of the nurses (64%) were employed in hospitals covering only two states. The data were originally collected in early 1980's ; it is believed that the health care and educational systems for nurses have been rapidly changing. Also, the data (30%) included many missing cases for the variable moral reasoning. This was due to the rigorous reliability checks on each protocol intended to assure consistency of response by subjects. Another limitation was the use of self-report data for measuring both cause and effect variables. Correlating two self-report measures may lead to overestimation of the strength of relationships between constructs, due to systematic response bias (Parkes, 1982). This study failed to deal with the multifaceted nature of some constructs such as standardization, autonomy, and work stress. The use of cross-sectional nonexperimental rather than longitudinal experimental design was another limitation. Although this study attempted to examine complex causal relationships on empirical data by using structural modeling technique, the cross-sectional survey might not allow strong inference regarding the di-

rection of causation.

Directions for Future Research

It is suggested that experimental, longitudinal designs be utilized to improve the study of nurses' stress and ethical decision making. A cross-sectional, correlational design is a good start for exploring new ideas, but they must be followed by experimental, longitudinal studies to increase our understanding of the phenomena (Wilson, 1986; Abramis, 1985). Finally, there is a need to explore other important work environment factors and personality variables that can predict nurses' stress and ethical decision making.

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- 국문초록 -

간호사의 환경적 요소와 개인적 특성이 직무스트레스와 윤리적 의사결정에 미치는 영향

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이 연구는 환경적 요소(간호사의 자율성, 조직의 표준화)와 개인의 특성(통제위, 나이, 경험, 간호역할개념, 도덕성), 직무 스트레스, 윤리적 의사결정 사이의 관계를 이론적 틀을 구성하여 테스트함으로써 그 인과관계를 탐구하였다. 본 연구를 위해 개발된 모형은 1) Katz와 Kahn의 조직에 대한 개방체계 이론(open systems theory of organization); 2) Kahn, Wolfe, Quinn, Snoek의 스트레스 이론(theory of stress); 3) Kohlberg의 도덕발달 이론(theory of moral development); 그리고 4) 여러 문헌고찰을 기초로 하였다.

본 연구의 모형은 2가지의 주요 종속변수(직무 스트레스, 윤리적 간호행위), 2가지 매개변수(간호 역할개념, 도덕성 발달정도), 그리고 여러 독립변수들(조직의 표준화, 자율성, 통제위, 교육, 나이, 경험 등)로 구성되었다. 간단히 말해, 간호사의 스트레스와 윤리적 간호행위를 개인 자신과 환경이라는 두 요소의 결과로 간주한 것이다.

미국(2개주)의 여러 건강관리기관에 근무하는 224명의 정규 간호사를 대상으로 하였고, 가설 검증을 위하여 1) 변수간의 인과관계를 조사하기 위한 Linear Structural Relationships(LISREL)기법과 2) 나이, 경험, 교육이 변수간의 관계에 미치는 중간역할을 알아보기 위해 상관분석을 이용하였다.

LISREL 결과를 보면 제시된 모델이 각 내재 변수에 상당한 설명력을 가지면서 자료에 잘 맞는 것으로 나타났다. 이 연구에서 가장 뚜렷한 점으로 나타난 것은 개인의 특성보다 환경적 요소로서의 자율성이 직무스트레스와 윤리적 의사결정을 예견하는데 훨씬 중요한 변수로 부각되었다는 점이다. 또한 간호사의 전문적 역할개념과 봉사적 역할개념이 간호사의 윤리적 의사결정을 예견하는 가장 중요한 요소로 나타났다.

중간영향(moderation effect)을 보면, 젊고 경험 적은 간호사일수록 나이가 많고 경험있는 간호사보다 환경적 요소(자율성)에 더 큰 영향을 받는다는 것을 암시하고 있다. 또한 4년제 대학 이상을 졸업한 간호사의 윤리적 간호행위는 2, 3년제를 졸업한 간호사보다 환경적 요소에 의해 덜 영향을 받는 것으로 나타났다. 한편 자율성의 부족은 2, 3년제 졸업 간호사보다 4년제 졸업 간호사에게 더 심한 스트레스가 되고 있음을 시사하였다.

이 연구의 결과로부터 적어도 다음과 같은 두 가지 실제적인 제언을 도출할 수 있다. 첫째, 이 연구는 환경적 요소로서의 자율성이 다른 어떤 개인적인 요소보다 직무 스트레스를 예견하는 데 중요한 요소라는 것을 제시하였다. 이것은 간호행정가들에게, 간호사의 직무 스트레스를 감소시키기 위해선 “자율성”이 아주 중요하게 다루어져야 한다는 것을 의미한다. 만일 간호사들의 직무 스트레스가 그 개인의 복지에 큰 해가 되고 환자를 간호하는 데 직접적으로 관계된다면, 간호행정가는 그 조직의 직무체계를 다시 평가해서 일에 대한 새로운 설계가 필요한지를 파악해야 한다. 또한 이 연구는 직무를 다시 설계할 경우, 누구에게 먼저 초점을 두고 시작해야 하는지를 밝혀주고 있다. 즉, 젊고 경험이 미숙한 간호사들에게 초점을 두고 시작해야 하며, 작업환경의 가장 중요한 차원중의 하나인 사회적 지원(social support)을 조심스럽게 고려해 보아야 한다.

둘째, 간호사의 윤리적 간호행위를 높이기 위해 전문

적 역할개념과 봉사적 역할개념이 재강조될 필요가 있다. 이 두 역할개념들을 교육을 통하여 효과적으로 가르칠 필요가 있다고 본다. 이 두 개념들이 간호사의 바람직한 간호행위에 영향을 미치는 가장 중요한 요소로 나타났다기 때문이다. 또한, 본 연구결과에 따르면, 경험이 많을수록 일에 심증을 느껴 바람직한 윤리적 간호행위가 감소되는 경향이 있었다. 따라서, 건강관리체제(health care system) 안에서의 간호사의 역할이-전문적으로서의, 그리고 환자를 위한 옹호자로서의-학교와 임상에서 효과적으로 교육되어야 한다고 본다. 간호사들의 역할에 대한 지속적인 교육이 학생은 물론 임상 간호사들에게도 실시되어야 할 것이다.

미래연구의 방향을 제시해 보면 첫째로 연구의 일반화를 높이기 위해 더 많은 대상자를 포함시켜야 한다. 이는 여러 종류의 표본을 반드시 한번에 전부 포함시켜야 한다는 것을 의미하는 것이 아니고, 특정한 여러 표본들을 연속적으로 연구함으로써 이 목표를 성취할 수 있다고 생각한다.

둘째는 여러 construct들(윤리적 간호행위, 직무 스트레스, 간호 역할개념 등)에 대한 적절한 측정도구를 개발해야 한다. 측정도구를 개발하기 위해서는 풍부하고 세세한 통찰력을 제공하는 질적인 정보를 얻는 것이 선행되어야 한다.

셋째, 윤리적 간호행위와 직무 스트레스에 관한 연구를 증진시키기 위해 실험설계 및 종단적 연구(experimental, longitudinal design)가 시도될 필요가 있다.

마지막으로, 윤리적 간호행위와 직무 스트레스를 예견할 수 있는 이론적 탐구(theoretical exploration), 즉 이론정립을 위하여, 환경적 요소와 개인의 특성에 대한 자세한 정보를 제공해 줄 수 있는 질적 연구들이 요구된다.