Volume : 4 | Issue : 8 | Aug 2015 • ISSN No 2277 - 8179

Research Paper

# Dilemmas Faced by Nurses And Associated Coping Factorsrelated to Physical Restraint Use in Elderlypatientswith Dementia in Japan

Health Science

KEYWORDS : dilemmas, coping, elderly people with dementia, restraints

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## ABSTRACT

*Objective: The purpose of this study was to clarify dilemmas related to physically restraining elderly patients with dementia faced by Japanese nurses and how they cope with such dilemmas based on experience.*

*Methods: A questionnaire survey.*

*Participants: A total of 340 nurses who work in the general ward.*

*Ethical Considerations: This study was approved by the ethics committee of Meiji University of Integrative Medicine.*

*Results and Conclusion: Factor analysis revealed four and two dilemma factors related to dealing and coping, respectively, with physically restraining elderly people with dementia. There was a positive correlation between the dilemma-coping factor "self-initiated positive cognition and activity" and the dilemma factor "execution of treatment and security" among novice and advanced beginner nurses, whereas a negative correlation was found between the dilemma-coping factor "negative cognition" and the dilemma factor "a cooperative relationship." With respect to expert nurses, there was a significant positive correlation between "self-initiated positive cognition and activity" and "a cooperative relationship." These results suggest an improvement in dilemma coping behavior as novice and advanced beginner nurses transition to expert nurses.*

**Introduction**

Physical restraint use in elderly patients with dementia has been a common practice in elderly care settings. While the aim is to ensure patient safety and comfort, physical restraint has been viewed as problematic in recent years, as it is associated with various negative effects (Shigeno et al., 2006; Ogusu, 2007), and because the act of physically restraining elderly individuals itself is regarded as a violation of human rights (Igarashi, 2007; Minooka et al., 2007).

Nurses must advocate for and protect the rights of elderly patients in clinical settings. This involves fulfilling the four fundamental responsibilities of nursing, which are to "promote health," "prevent illness," "restore health," and "alleviate suffering" (International Nursing Council; ICN, 1976), and to strive to maintain the environment in which the values, beliefs, lifestyles, and QOL of patients are respected. However, situations in which physical restraint is used often present difficulties with regard to fulfilling these responsibilities. In particular, elderly patients with dementia often find it difficult to make individual decisions due to declined mental and physical functions associated with aging, and it is highly likely that nurses will be put in a position where they have to make complex judgments to fulfill their responsibilities. Moreover, as Japan faces aging of the society, the number of elderly patients with dementia is increasing markedly, and occasions where nurses face difficult decision-making are predicted to increase further. With regard to the social background, the "Regulation to Prohibit Physical Restraints" was issued in March 31, 1999 (Ordinance of the Ministry of Health and Welfare; presently, Ordinance of the Ministry of Health, Labour and Welfare), and implemented in 2000. However, the scope of this regulation is limited in that it is not applicable to medical institutions other than those specified under this regulation. As there are no legal restrictions regarding the use of physical restraint at general hospitals, while the standards of physical restraint have been re-evaluated and nursing studies leading to its abolishment have been conducted (Yukiyama et al., 2003; Seno et al., 2005; Ota et al., 2006), such studies are few in number, and no laws pertaining to the abolishment of physical restraint have been established.

For these reasons, nurses shoulder complex feelings and dilemmas concerning physical restraint use among the elderly (Yamamoto, 2004; Yamamoto et al., 2004; Yamamoto et al., 2006). Crisham (1981, 1985) has shown that facing and addressing these complex feelings and dilemmas can potentially provide a chance to rediscover and reconsider nursing responsibilities, suggesting the importance of confronting and coping with dilemmas. However, similarly to the fact that no laws have been established to abolish physical restraint use, few studies have addressed how to cope with dilemmas related to physical restraint of elderly patients with dementia. Moreover, individual differences have been observed in nurses' ability to recognize dilemmas, and depend on educational background, nursing and life experiences, personal values, and other factors (Benner, 1996; Yamamoto, 2005). According to Benner (2001), although nurses acquire knowledge pertaining to clinical nursing and a capacity for judgment over a long period of time, they tend to forget how they gained such knowledge and skills. It is thus predicted that among nurses working in general wards, differences in nursing experience may influence how they experience and cope with dilemmas when using physical restraint in elderly patients with dementia.

The present study examined dilemma coping behaviors among nurses who work in general wards as they face physical restraint of elderly patients with dementia. Specifically, we clarified differences in the relationship between their dilemmas and dilemma coping approaches by years of nursing experience, with the aim of contributing to the shaping of dilemma coping measures related to physical restraint use in elderly patients with dementia according to years of nursing experience.

**I. Study design**

**1. Definition of terms**

**1) Physical restraint**

"Medical Friend's Nursing Science Dictionary" (Ogura, 1997) specifically describes the methodology for using physical restraints as a nursing technique, as follows: "Restraints are the method performed by utilizing a fence, canvas cloth, sheets and belts, restraint tube, and foot holder for the purpose of restricting movement in order to maintain patient safety and according to treatment and nursing needs." The word itself strongly implies the restriction of physical movement, but not in the psychological sense. In a column entitled, "Restraints used for accident prevention," Ujiie et al. (2000) noted the following: "techniques used in the setting of nursing to ensure safety are, in a broad sense, included in all of the techniques performed by nurses. Above all, preventive techniques against infection, the latter of which often puts patients at risk in a medical setting, and restraint techniques to prevent patients from falling off the bed, or to protect patients who lack self-control from accidents, are necessary." According to Notice No. 129 of the Ministry of Health and Welfare, physical restraint is defined as follows: "physical restraint refers

to a restriction of actions by temporary placing the patient body under restraint using clothes or padded belts in order to restrict their movement." This definition, apparently, uses the words "restriction" and "restraint" almost synonymously, and as such, "physical restraint" was defined as "an act of temporarily fixing parts of or the entire body, or restricting their movement, using a fence, canvas cloth, sheets and belts, restraint tubes, foot holder, glove-like materials, bandages, etc."

**2) Dilemma**

According to Fry (1996), moral dilemmas are experienced in circumstances where there are two actions or judgments with the same level of legitimacy, and an individual does not know which one to choose or perform. Crisham (1985) states that when a person is convinced that a moral obligation to comply with two contradictory actions exists, he or she faces either a moral or ethical dilemma. Based on these definitions, a moral or ethical dilemma can be interpreted as a situation or position in which, standing in the middle of contradicting or conflicting moral or ethical values or judgments, one must pick one or the other. A dilemma related to physical restraint of elderly patients with dementia is likely to be moral and ethical in nature, given that nurses often face situations in which conflicting moral and ethical values exist. Kojima et al. (1997) termed dilemmas experienced by nurses in clinical nursing practice as "nursing dilemmas," and provided the following definition: "a nursing dilemma arises when, faced with two seemingly contradicting situations, one 1) does not know which one to choose; 2) does not know if the choice made was sound or not; 3) does think that the choice made was unsound; 4) must choose one that does not seem sound; and 5) is about to choose one that seems sound. The term "nursing dilemma" is likely limited in terms of circumstances in the area of nursing, and would likely indicate a dilemma experienced by nurses in the setting of clinical nursing practice.

The purpose of the present study was to examine dilemmas experienced by nurses when facing physical restraint of elderly individuals with dementia in nursing clinical practice. As such, dilemmas related to physical restraint of elderly patients with dementia contain moral and ethical characteristics, and are restricted in this sense to those recognized by nurses or in clinical nursing practice. Notably, we avoid defining the term with words that would limit the meaning of the characteristics and conditions, and instead define these dilemmas as "complex workings of the mind experienced by nurses in situations where, caught in the middle of contradicting fundamental nursing responsibilities, they cannot arrive at a definitive answer to judgment regarding physical restraint of elderly patients with dementia in clinical nursing practice."

**3) Dilemma coping**

Coping is a process of handling a stressful stimulus or aberration that results from such a stimulus, and together with cognitive assessment, is a concept that forms part of the psychological stress model. Although its definition is still partly inconsistent, many researchers adopt Lazarus's definition (1985), i.e., that coping is a cognitive and behavioral effort performed when burdens are placed on individual resources, or to process external or internal requests rated to be greater than such resources; this effort shall always change. Furthermore, with regard to the characteristics of coping, coping and the results of coping are considered separate. To this end, the means that led to successful adaptation as well as those that led to unsuccessful adaptation should be regarded as coping and treated as such. Thus, based on the definition of dilemma mentioned above, dilemma coping was defined as follows: "a means to address the complex workings of the mind, regardless of whether or not such a means would lead to successful adaptation, which is experienced by nurses in situations in which, caught in the middle of contradicting fundamental nursing responsibilities, they cannot arrive at a definitive judgment regarding physical restraint of elderly patients with dementia in clinical nursing practice."

**2. Conceptual framework**

The conceptual framework of this study is as follows. Nurses working in a general ward of a hospital experience dilemmas when physical restraint is used for elderly patients with dementia, as they find themselves caught in the middle of conflicting fundamental responsibilities (ICN, 1976), which include promotion of health, prevention of illness, restoration of health, and alleviation of suffering (Yamamoto et al., 2006). We defined such dilemmas as consisting of five factors; namely, 1) tasks related to nursing, 2) collaborative relationships, 3) treatment performance and safety assurance, 4) individual values, and 5) elderly care, according to Crisham's dilemma classification (1981; 1985), the "International Council of Nurses (hereafter, ICN) Code of Ethics for Nurses" (1974) pertaining to basic area, "ICN Basic Document, Nursing Philosophy and Guiding Principles" (1988) pertaining to elderly nursing care, and "Nurses' dilemma" edited by ICN (Barbara et al., 1977). We created a total of 20 items under these five categories, assuming the dilemmas that nurses experience when physical restraint is used for elderly patients with dementia. The dilemma items were assessed on a 5-point Likert scale (hereafter, dilemma scale; Table 1), ranging from 1 (weak) to 5 (strong). We assumed that nurses coped with their dilemmas (hereafter, dilemma coping) based on a dilemma resolution model (MORAL model; Crisham, 1985) and survey results regarding ethical and human rights issues in nursing practice by Benner (1982). We then created a scale consisting of 16 items that represent situations of dilemma coping (hereafter, dilemma coping scale; Table 2) in three areas, which corresponded to the following three sub-concepts that comprise Shoji's workplace coping scale (Shoji et al., 1992): 1) active cognitive and behavioral coping, 2) passive cognitive and behavioral coping, and 3) coping based on symptoms. We referred to an overview of dilemmas (Yamamoto et al., 2006) experienced when nurses face physical restraint of elderly patients with dementia. The coping ability was assessed on a 4-point Likert scale that ranged from 1 (low) to 4 (high). Individual factors that influence dilemma coping were age, sex, nursing license, and years of experience in nursing fields (Crisham, 1981; Yamamoto, 2005).

**3. Methods**

**1) Methods**

A questionnaire survey was conducted using a questionnaire developed specifically for the present study according to our conceptual framework (placement method).

**2) Participants**

A total of 340 general ward nurses who worked at cooperating general hospitals across three prefectures in the Kansai area participated in this study.

**3) Survey period**

December 2006 through March 2007.

**4. Analysis**

1) Categorization by years of nursing experience

Benner (1992) applied the Dreyfus model of skill acquisition to nursing, and described five acquisition stages in clinical nursing practice as follows: novice, advanced beginner, competent, proficient, and expert. Nurses in the competent stage are those with 2 to 3 years of clinical nursing experience in the same or similar working conditions, who had begun to conduct their activities in a conscious manner by setting long-term goals and plans. Proficient nurses typically had roughly 3 to 5 years of clinical nursing experience, and could grasp situations from a holistic, rather than partial, point of view in clinical nursing practice; reaching

this stage implies that an understanding based on experience and recent knowledge has been gained.

As we found a strong positive correlation between participant age and years of nursing experience, participants were divided into the following five groups based on years of nursing experience; novice group (1-2 years of nursing experience, n=54); competent group (3-4 years, n=57); proficient group (5-7 years, n=51); early-expert group (8-11 years, n=51); and late-expert group (12-35 years, n=49).

**2) Study phases**

In this study, analyses were performed in the following four phases.

1) A simple tabulation, cross tabulation, t-test, and chi-square test were performed to understand characteristics regarding participant basic attributes.

2) Regarding the 20-item dilemma scale and the 16-item dilemma coping scale, which were developed in the present study in order to assess nurses' dilemmas and associated coping approaches related to physical restraint of elderly patients with dementia, we determined the correlation coefficients between each item and confidence coefficient α in order to verify internal validity. As a result, we obtained a mean score of 3.8±0.9 for the 20-item dilemma scale, with a mean correlation coefficient of r = 0.46 between each item, an α coefficient of 0.86 excluding the relevant items, and an α coefficient of 0.87 for the 20 items (Table 1). As for the 16 dilemma coping items, we obtained a mean dilemma coping score of 0.25±0.6, with a mean correlation coefficient of r = 0.36 between each item, a mean α coefficient of 0.76 excluding the relevant items, and an α coefficient of 0.78 for the 16 items (Table 2). To extract dilemma factors and dilemma coping factors, exploratory factor analyses (maximum likelihood method, equamax) were performed with the initial eigenvalue set at ≥1 for item selection. Factors that were difficult to interpret and had a factor loading <0.4 were removed.

3) Using factors identified in 2), relationships between factors were assessed using Pearson's correlation coefficients according to classifications by years of nursing experience (significance level, 0.01).

**5. Ethical considerations**

This study was reviewed by the ethics committee of Meiji University of Integrative Medicine, and the study was performed after obtaining approval. Participants received written explanations regarding the study purpose, that their free will to cooperate with the study is respected, that it was guaranteed that non-participation would not result in any disadvantage, that their privacy was protected, and that data would not be used for purposes other than research. Participants were asked to self-administer the questionnaire anonymously, and their responses were considered consent for participation.

**II. Results**

**1. Recovery rate**

The questionnaires were distributed to 340 participants, and responses were obtained from 291 (85.6%). Of these, 272 (93.5%) were women, 7 were men (2.4%), and 12 (4.1%) provided no answers. Since over 90% of the respondents were women, and because nurses' awareness in clinical nursing practice was treated as a variable, male participants were excluded due to the possible effects of sex difference (previous study). Consequently, responses from 272 female nurses were considered valid responses and subjected to analysis.

**2. Respondent characteristics**

Mean participant age was 29.8±7.6 years (minimum, 21 years; maximum, 58 years). Mean number of years of nursing experience was 6.5±6.5 years (minimum, 1 year; maximum, 35 years). Regarding nursing education, most participants (89.9%) had graduated from a professional or vocational school, 7.8% had graduated from junior college and 0.4% had graduated from college. Pearson's correlation coefficient was calculated to clarify the relationship between age and years of nursing experience (r = 0.87, p = 0.000); which revealed a significant and strong positive correlation (Table 3).

**3. Exploratory factor analysis of 20 dilemma items experienced by nurses when physical restraint is used for elderly patients with dementia**

As a result of exploratory factor analysis, four factors with an initial eigenvalue of ≥1 were extracted when 15 of the 20 items were used, with a cumulative contribution rate of 79.1%, Kaiser-Meyer-Olkin value (hereafter, KMO value) of 0.84, and Bartlett's sphericity significance of P=0.000. Cronbach α coefficients for each factor item were 0.91 for the first factor (n=253), 0.93 for the second (n=253), 0.87 for the third (n=252), and 0.81 for the fourth (n=256) (Table 4).

The first factor, which concerned situations representing treatment performance and safety and comfort assurance for elderly patients with dementia, was termed "dilemma factor regarding treatment performance and safety/comfort assurance." The second factor was termed "dilemma factor regarding handling of elderly patients with dementia," indicating situations in which the impact on the QOL of elderly patients with dementia, aging, and dementia was of concern. The third factor was termed "dilemma factor regarding collaborative relationships," and indicated situations where nurses have to deal with issues without gaining a common understanding regarding elderly patients with dementia among cooperating parties. The fourth factor was termed "dilemma factor regarding priorities of nursing duties," as this type of dilemma involved the prioritization of various nursing duties including emergency care, since the nurses worked in a general ward and not in a special facility for elderly with dementia.

**4. Exploratory factor analysis of 16 coping items regarding dilemmas experienced by nurses when physical restraint is used for elderly patients with dementia**

As a result of exploratory factor analysis, two factors with an initial eigenvalue of ≥1 were extracted when 9 of the 16 items were used, with a cumulative contribution rate of 65.9%, KMO value of 0.79, and Bartlett's sphericity significance of P=0.000. Cronbach α coefficients were 0.83 for the first factor and 0.84 for the second factor (Table 5). The first factor was termed "self-resolving dilemma coping factor," indicating situations where nurses act proactively to resolve dilemmas related to the use of physical restraint in elderly patients with dementia. The second factor was termed "avoidance-type dilemma coping factor," as this type of coping reflects a behavior or consciousness to avoid, rather than face, dilemmas related to the use of physical restraint in elderly patients with dementia.

**5. Analysis of correlations between scores of dilemma coping factors and dilemma factors by years of nursing experience**

To clarify the relationships between the scores of two dilemma coping factors and dilemma factors by years of nursing experience, we determined Pearson's correlation coefficients. In the novice group, a significant positive correlation was found between "self-resolving dilemma coping factor" and "dilemma factor regarding treatment performance and safety/comfort assurance" (r = 0.42, p = 0.002). A significant negative correlation was found between "avoidance-type dilemma coping factor" and "dilemma factor regarding collaborative relationships" (r = -0.39, p = 0.005). No significant relationship was found in the competent and proficient groups. In the expert groups, a significant positive

correlation was found between "self-resolving dilemma coping factor" and "dilemma factor regarding collaborative relationships" (r = 0.29, p = 0.004) (Table 6).

## VI. Discussion

### 1. Recovery rate

The high recovery rate (roughly 90%) suggested that the target population had a strong interest in the present study. It is also likely that the number of questions in the questionnaire was appropriate for our participants.

### 2. Respondent characteristics

According to the Statistics and Information Department, Minister's Secretariat, Ministry of Health, Labour and Welfare (2005), in fiscal year 2004, those aged 25-29 years comprised the highest proportion of nurses (20.4%) in Japan. The number of nurses by age bracket decreases in every 5-year category up to the ≥60-year category (2.4%). Although no such national trend regarding years of nursing experience can be found, the participants of the present study followed a similar trend regarding age. Thus, there likely exists no bias in terms of age or years of nursing experience, demonstrating a significant and strong positive correlation with age, among participants of the present study.

### 3. Exploratory factor analyses of the 20 dilemma items experienced by nurses when physical restraint is used for elderly patients with dementia

The following four dilemma factors were extracted in our exploratory factor analysis: "dilemma factor regarding treatment performance and safety/comfort assurance," "dilemma factor regarding handling of elderly patients with dementia," "dilemma factor regarding collaborative relationships," and "dilemma factor regarding priorities of nursing duties." A previous study (Yamamoto et al., 2004) identified nurses' dilemma factors regarding physical restraint use in elderly nursing care, without limiting the target to elderly patients with dementia, as follows: "treatment performance and safety assurance," "collaborative relationship," "essence of elderly nursing care," and "priorities of nursing duties." These factors are consistent with the results of the present study, suggesting the validity of the extracted factors regarding dilemmas faced by nurses when physical restraint is used for elderly patients with dementia.

### 4. Exploratory factor analysis of the 16 coping items regarding dilemmas experienced by nurses when physical restraint is used for elderly patients with dementia

The following two dilemma coping factors were extracted in our exploratory factor analysis: "self-resolving dilemma coping factor," and "avoidance-type dilemma coping factor." The 16 items of nurses' dilemma coping items related to physical restraint use in elderly patients with dementia were created by referring to Shoji's workplace coping scale. The results of the exploratory factor analysis revealed coping factors similar to the sub-concepts of Shoji's workplace coping scale, i.e., active cognitive and behavioral coping, and passive cognitive and behavioral coping. It is notable that the results were similar, even though participants of the present study were nurses, with the type of dilemma coping restricted to that related to physical restraint use in elderly patients with dementia in a general ward (i.e., workplace). Thus, the extracted factors, i.e., "self-resolving dilemma coping factor" and "avoidance-type dilemma coping factor," are considered reasonable as coping factors for dilemmas experienced by nurses when physical restraint is used for elderly patients with dementia.

### 5. Analysis of correlations between scores of dilemma coping factors and dilemma factors by years of nursing experience

Significant correlations between dilemma coping factors and dilemma factors were only observed in the novice group. In this group, a significant correlation was identified between "self-resolving dilemma coping factor" and "dilemma factor regarding treatment performance and safety/comfort assurance," and between "avoidance-type dilemma coping factor" and "dilemma factor regarding collaborative relationships." These findings reflect situations where novices cope with their dilemmas by trying to resolve individually the issues regarding physical restraint use to perform treatment or ensure safety in elderly patients with dementia. On the other hand, it is also indicated that these nurses are unable to avoid coping of dilemmas that they experience in the context of a collaborative relationship.

Sakamoto et al. (2006) examined the relationship between reality shock and experience-based knowledge in operating room nurses, and showed that the largest difference by years of experience was found in "technical factors." In particular, in the group of nurses with fewer than 1-2 years of experience, "patient change" among the technical factors had the strongest effect. Hayashida et al. (2003) reported on work stress among nurses who had graduated from nursing colleges throughout their career building process, revealing that nurses with more than 1 year and fewer than 3 years of nursing experience have "nursing care" stress due to insufficient nursing capability, and that this stress was hampering their career consciousness. One of the dilemma factors identified in the present study ("dilemma factor regarding treatment performance and safety/comfort assurance") was related to feelings that nurses experience when physical restraint is used to perform treatment and ensure safety in elderly patients with dementia requiring treatment. It is likely that for those in the novice group, our results were similar to those of previous studies, as nurses in this group coped with such dilemmas through active behaviors and cognition in an attempt to resolve issues.

The importance of accumulating years of experience in nursing care and interpersonal relationship skills at the workplace has been suggested by Kawakami et al. (2003). As such, it might be important to provide support for the novice group so that they can learn alternative ways of providing care that allow them to avoid physical restraint use. Training on ethical issues surrounding elderly patients with dementia could also be provided, and would likely facilitate treatment performance and safety assurance in clinical practice. We identified a significant positive correlation between "self-resolving dilemma coping" and "dilemma factor regarding collaborative relationships" in the expert groups (r = 0.29, p = 0.004). This finding is indicative of the presence of situations in which nurses in the expert groups try to resolve dilemmas on their own; these dilemmas arise in a collaborative relationship involving the use of physical restraint for elderly patients with dementia.

Minamiya et al. showed that nursing practice abilities such as "leadership" and "critical care" are significantly correlated with years of clinical experience. Yamase et al. suggested that among clinical nurses, the subjectivity and capacity for critical thinking regarding the nursing process is affected by the number of years of nursing experience. These findings are not limited to instances involving the use of physical restraint on elderly patients with dementia. However, consistent with the results of previous studies, nurses with more years of nursing experience are likely to address proactively and resolve complex ethical issues surrounding elderly patients with dementia. According to Matsuura et al. (2005), conflict coping behaviors of head nurses include "compromise," "appeasement," "concession," and "collaboration." These categories signify a cooperative approach toward the other party with whom a conflict exists. Among the present study participants, many of the nurses in the expert groups might correspond to those who are engaged in administrative work, given their years of nursing experience. It is thus presumable that expert nurses assume a stance of actively dealing with dilemmas

arising in a collaborative relationship in order to resolve them. Uki et al. (2006) stated that support from colleagues, senior staff, and supervisors, as well as a chance to communicate formally with physicians, are factors that promote hospital coordination among nurses and physicians, and that it is important for the supervisor and senior staff to provide opinions from the standpoint of nursing to junior staff members through conferences, for example, and to model the attitude required for working collaboratively with physicians. Yamada et al. (2007) examined the association between years of experience and recognition capability (i.e., intuition) used in clinical decision making among clinical nurses with nursing expertise, and found that nurses with more years of experience had a higher 'total score' and scores of 'intelligence' and 'expertise' for intrinsic intuition compared to nurses with fewer years of experience. A collaborative relationship in the present study is not limited to that between physicians and nurses. However, based on the present and previous study results, it is likely that when dilemmas arise in the context of collaborative relationships in nursing practice where issues related to elderly patients with dementia include complex ethical problems, dilemma coping is directed toward resolving issues among nurses with more years of nursing experience, such as those in the expert groups. These findings strongly suggest that the novice group could potentially improve their ability to cope with dilemmas arising in collaborative relationships by acquiring the dilemma coping ability demonstrated by expert nurses in clinical practice. However, the results of the present study did not show a significant difference in the late-expert group comprising nurses with long years of experience. As few studies have performed detailed analyses by years of nursing experience, further investigation is necessary to follow up on this present study finding.

## IV. Study Limitations

According to Gadamer (1970) and Benner et al. (1982), the term "experience" does not simply refer to the course or length of time. Rather, it describes the process in which preconceptions and one's opinions are improved through encounters with real clinical nursing cases, which add nuances, or subtle and ambiguous differences, to theoretical concepts. In particular, regarding dementia for which causes and treatment methods have not been established, clinical practice in nursing includes various ethical issues, and due to the complexity, many situations cannot be grasped by merely applying theoretical concepts. Therefore, it is difficult to generalize the differences in dilemmas and dilemma coping related to physical restraint of elderly patients with dementia according to classifications based on years of nursing experience. As such, further investigation with a larger sample size is necessary. Moreover, as the ability to recognize dilemmas appears to vary by individual, and depends on educational background, nursing and life experiences, personal values, and so on (Patricia, 1996), an analysis by educational background will be necessary. The present study did not analyze the results according to educational background, as roughly 90% of the participants had graduated from or completed a professional or vocational school. However, individual factors may also be worth investigating, and may include items such as the components of clinical nursing experience, post-graduate training content, and education content, using a larger sample size in the future.

## Acknowledgments

We thank all nurses and administrative staff of the Nursing Departments (stations) and wards in the participating hospitals for learning the objectives of the present study and cooperating with the questionnaire survey. A part of this study has been published as a Japanese article in Nursing Care Research, Vol. 11, No.3., p 77-86 (Original Article: peer reviewed).

## Tables

Table 1. Mean score, standard deviation, correlation coefficient between each item, and α coefficient after item elimination for each dilemma scale item

| | 20 Dilemma scale items (n = 244) | Mean score | SD | Correlation coefficient | α Coefficient after item elimination |
|---|---|---|---|---|---|
| 1 | When elderly patients are at a high risk of dying, sometimes our only option is to use physical restraint. | 3.5 | 0.9 | 0.36 | 0.86 |
| 2 | When there are many routine tasks such as ADL assistance, our only option is to use physical restraint for some elderly patients. | 3.2 | 0.9 | 0.36 | 0.86 |
| 3 | Given the structure of the ward, our only option is to use physical restraint for some elderly patients when it is not feasible (or it is difficult) to observe them frequently. | 3.4 | 0.9 | 0.28 | 0.87 |
| 4 | I want to provide care without having to perform physical restraint, so it is hard for me when physical restraint is used as this becomes | 4.1 | 0.8 | 0.46 | 0.86 |
| 5 | I feel an emptiness when directed by a physician to use physical restraint for elderly patients who, from a nursing perspective, do not need to be restrained or could be treated in other ways. | 4.0 | 0.9 | 0.47 | 0.86 |
| 6 | I feel an emptiness when directed by a supervisor (e.g., ward nurse) to use physical restraint for elderly patients who I think do not need to be restrained or could be treated in other ways. | 3.9 | 0.9 | 0.40 | 0.86 |
| 7 | I find it questionable that physical restraint is used for elderly patients without sufficient discussion among nursing staff at a conference. | 3.8 | 0.9 | 0.47 | 0.86 |
| 8 | I find it questionable that physical restraint use is instructed by a senior nurse for elderly patients who I think do not need to be restrained or could be treated in other ways. | 4.0 | 0.8 | 0.45 | 0.86 |
| 9 | Our only option is to use physical restraint to maintain life and physical strength in elderly patients who self-remove tubing (e.g., intravenous drip, tube feeding). | 3.8 | 0.9 | 0.49 | 0.86 |
| 10 | Our only option is to use physical restraint for elderly patients who self-remove tubing for treatment (e.g., intravenous drip, balloon catheter). | 3.7 | 0.9 | 0.45 | 0.86 |
| 11 | Our only option is to use physical restraint for elderly patients at risk of falling from the bed in order to ensure safety. | 3.7 | 0.9 | 0.46 | 0.86 |
| 12 | Our only option is to use physical restraint for elderly patients at risk of falling from a wheelchair in order to ensure safety. | 3.7 | 0.9 | 0.47 | 0.86 |
| 13 | Our only option is to use physical restraint in order to perform treatment, even if the elderly patient rejects it. | 3.4 | 0.8 | 0.31 | 0.86 |
| 14 | I find it questionable to use physical restraint as requested by the family, when the elderly patient rejects it. | 3.7 | 0.9 | 0.38 | 0.86 |
| 15 | I feel sorry for using physical restraint on elderly patients with declined consciousness and understanding. | 3.8 | 0.9 | 0.49 | 0.86 |
| 16 | Our only option is to use physical restraint for elderly patients with violent behavior in order to ensure the safety of other patients and | 3.7 | 0.8 | 0.50 | 0.86 |
| 17 | As physical restraint greatly affects dementia in elderly patients, I want to do something about it. | 4.0 | 0.8 | 0.60 | 0.85 |
| 18 | As physical restraint decreases QOL in elderly patients, I want to do something about it. | 4.1 | 0.8 | 0.55 | 0.86 |
| 19 | As physical restraint may cause disease and chronic conditions, I want to do something about it. | 3.8 | 0.8 | 0.56 | 0.86 |
| 20 | As physical restraint advances loss of mental and physical function associated with aging, I want to do something about it. | 4.0 | 0.8 | 0.63 | 0.85 |
| | Mean score | 3.8 | 0.9 | 0.46 | 0.86 |
| | α Coefficient for 20 items | | | 0.87 | |

Table 3. Basic attributes of participants.

| | Number | Minimum | Maximum | Mean | Standard deviation | Correlation coefficient |
|---|---|---|---|---|---|---|
| Age | 238 | 21 | 58 | 29.8 | 7.6 | 0.87*** |
| Years of nursing experience | 249 | 1 | 35 | 7.7 | 6.5 | |

| | Number | % |
|---|---|---|
| Professional and vocational school | 231 | 89.9 |
| Junior college | 20 | 7.8 |
| College | 1 | 0.4 |

***; p<0.001

Table 2. Mean score, standard deviation, correlation coefficient between each item, and α coefficient after item elimination for each dilemma coping scale item

| | 16 Dilemma coping scale items (n = 235) | Mean score | SD | Correlation coefficient | α Coefficient after item |
|---|---|---|---|---|---|
| 1 | dementia. | 2.1 | 0.8 | 0.41 | 0.76 |
| 2 | I asked medical personnel I know about dementia. | 2.2 | 0.8 | 0.35 | 0.77 |
| 3 | I consulted my nursing supervisor and senior nursing staff about how to respond to elderly patients with dementia. | 2.9 | 0.8 | 0.36 | 0.76 |
| 4 | We had a conference regarding physical restraint based on cases of elderly patients with dementia. | 2.9 | 0.9 | 0.41 | 0.76 |
| 5 | I consulted with coworkers and friends who are nurses about cases where physical restraint is used in patients with dementia. | 2.8 | 0.8 | 0.50 | 0.75 |
| 6 | I reviewed the nursing plan. | 2.9 | 0.8 | 0.48 | 0.75 |
| 7 | Family members and nurses talked about troubling situations where physical restraint is used for elderly patients. | 2.7 | 0.8 | 0.49 | 0.77 |
| 8 | I tried changing responses to elderly patients with dementia in various ways. | 3.0 | 0.7 | 0.33 | 0.75 |
| 9 | I thought deeply about my capabilities in handling elderly patients with demer | 1.9 | 0.7 | 0.48 | 0.77 |
| 10 | I told myself that as a nurse, I can resolve issues related to nursing regarding elderly patients with dementia. | 1.8 | 0.7 | 0.26 | 0.77 |
| 11 | As I am no expert on dementia, I thought it would be prudent to follow the physician instructions. | 2.0 | 0.8 | 0.24 | 0.77 |
| 12 | I thought it was fine as is, since senior nurses also have trouble handling elderly patients with dementia and resort to physical restraint use. | 1.6 | 0.7 | 0.27 | 0.76 |
| 13 | I left the scene, as I had trouble handling the elderly patient with dementia. | 1.3 | 0.6 | 0.37 | |
| 14 | I asked to be put in charge of adult patients or other patients who are easy to manage in order to avoid being in charge of elderly patients with | 1.5 | 0.7 | 0.34 | 0.76 |
| 15 | I asked my supervisor and senior nursing staff to handle elderly patients with dementia. | 2.9 | 0.7 | 0.22 | 0.77 |
| 16 | I tried not to think about handling elderly patients with dementia, thinking that they will be discharged soon. | 1.5 | 0.7 | 0.32 | 0.77 |
| | Mean score | 0.25 | 0.6 | 0.36 | 0.76 |
| | α Coefficient for 16 items | | | 0.78 | |

Table 4. Exploratory factor analysis of the 20 dilemma items

| | Factor analysis of the 20 dilemma items | Factor 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|
| 12 | Our only option is to use physical restraint for elderly patients at risk of falling from a wheelchair in order to ensure safety. | 0.90 | 0.07 | -0.02 | 0.15 |
| 11 | Our only option is to use physical restraint for elderly patients at risk of falling from the bed in order to ensure safety. | 0.89 | 0.01 | -0.03 | 0.16 |
| 10 | Our only option is to use physical restraint for elderly patients who self-remove tubing for treatment (e.g., intravenous drip, balloon catheter). | 0.87 | 0.03 | -0.03 | 0.13 |
| 9 | Our only option is to use physical restraint to maintain life and physical strength in elderly patients who self-remove tubing (e.g., intravenous drip, tube feeding). | 0.78 | 0.07 | 0.03 | 0.15 |
| 16 | Our only option is to use physical restraint for elderly patients with violent behavior in order to ensure the safety of other patients and staff. | 0.58 | 0.24 | 0.04 | 0.15 |
| 20 | As physical restraint advances loss of mental and physical function associated with aging, I want to do something about | 0.12 | 0.86 | 0.32 | 0.04 |
| 18 | As physical restraint decreases QOL in elderly patients, I want to do something about it. | 0.04 | 0.84 | 0.29 | 0.02 |
| 19 | As physical restraint may cause disease and chronic conditions, I want to do something about it. | 0.10 | 0.81 | 0.20 | 0.09 |
| 17 | As physical restraint greatly affects dementia in elderly patients, I want to do something about it. | 0.10 | 0.75 | 0.35 | 0.04 |
| 8 | I find it questionable that physical restraint use is instructed by a senior nurse for elderly patients who I think do not need to be restrained or could be treated in other ways. | 0.02 | 0.20 | 0.79 | -0.04 |
| 6 | I feel an emptiness when directed by a supervisor (e.g., ward nurse) to use physical restraint for elderly patients who I think do not need to be restrained or could be treated in other | -0.01 | 0.21 | 0.79 | -0.03 |
| 5 | I feel an emptiness when directed by a physician to use physical restraint for elderly patients who, from a nursing perspective, do not need to be restrained or could be treated | -0.05 | 0.30 | 0.77 | 0.08 |
| 7 | I find it questionable that physical restraint is used for elderly patients without sufficient discussion among nursing staff at a conference. | 0.01 | 0.30 | 0.67 | -0.02 |
| 3 | Given the structure of the ward, our only option is to use physical restraint for some elderly patients when it is not feasible (or it is difficult) to observe them frequently. | 0.15 | -0.01 | -0.07 | 0.98 |
| 2 | When there are many routine tasks such as ADL assistance, our only option is to use physical restraint for some elderly | 0.15 | 0.07 | 0.04 | 0.66 |
| | Cronbach α coefficient | 0.91 | 0.93 | 0.87 | 0.81 |
| | Cumulative contribution rate (%) | | 79.1 | | |
| | Kaiser-Meyer-Olkin value | | 0.84 | | |
| | Bartlett's test | | P<0.001 | | |

Factor extraction method: maximum likelihood rotation method: equamax method with Kaiser normalization

Table 5. Exploratory factor analysis of the 16 dilemma coping items

| | Dilemma coping items | 1 | 2 |
|---|---|---|---|
| 6 | I reviewed the nursing plan. | 0.78 | -0.04 |
| 4 | We had a conference regarding physical restraint based on cases of elderly patients with dementia. | 0.74 | -0.03 |
| 5 | I consulted with coworkers and friends who are nurses about cases where physical restraint is used in patients with dementia. | 0.73 | -0.01 |
| 7 | Family members and nurses talked about troubling situations where physical restraint is used for elderly patients. | 0.63 | 0.06 |
| 8 | I tried changing responses to elderly patients with dementia in various | 0.61 | -0.14 |
| 3 | I consulted my nursing supervisor and senior nursing staff about how to respond to elderly patients with dementia. | 0.56 | -0.07 |
| 13 | dementia. | -0.03 | 0.87 |
| 14 | I asked to be put in charge of adult patients or other patients who are easy to manage so as to avoid being in charge of elderly patients with | 0.00 | 0.84 |
| 12 | I thought it was fine as is, since senior nurses also have trouble handling elderly patients with dementia and resort to physical restraint | -0.09 | 0.68 |
| | Cronbach α coefficient | 0.83 | 0.84 |
| | Cumulative contribution rate (%) | 65.9 | |
| | Kaiser-Meyer-Olkin value | 0.80 | |
| | Bartlett's test | P=0.000 | |

Factor extraction method: maximum likelihood rotation method: equamax method with Kaiser normalization

Table 6. Correlation coefficients of dilemma factors and dilemma coping factors according to five classifications based on years of nursing experience

| Five classifications of experience | Dilemma coping factor | Dilemma factor | Treatment performance, Safety assurance | Characteristics of elderly patients | Collaborative relationships | Prioritization of duties |
|---|---|---|---|---|---|---|
| Novice group | Self-resolving | Correlation coefficient | 0.42 | 0.31 | 0.23 | 0.09 |
| | | p value | 0.002 | 0.028 | 0.105 | 0.516 |
| (n=50) | Avoidance-type | Correlation coefficient | 0.00 | -0.32 | -0.39 | -0.07 |
| | | p value | 0.991 | 0.025 | 0.005 | 0.638 |
| Competent group (n=58) | Self-resolving | Correlation coefficient | 0.10 | 0.04 | 0.21 | -0.10 |
| | | p value | 0.458 | 0.754 | 0.116 | 0.470 |
| | Avoidance-type | Correlation coefficient | 0.082 | -0.252 | -0.167 | -0.076 |
| | | p value | 0.541 | 0.056 | 0.211 | 0.570 |
| Proficient group (n=42) | Self-resolving | Correlation coefficient | -0.31 | -0.13 | 0.01 | -0.27 |
| | | p value | 0.042 | 0.399 | 0.975 | 0.087 |
| | Avoidance-type | Correlation coefficient | -0.02 | -0.27 | -0.32 | -0.04 |
| | | p value | 0.882 | 0.080 | 0.041 | 0.810 |
| Expert group (n=100) | Self-resolving | Correlation coefficient | -0.07 | 0.25 | 0.29 | -0.24 |
| | | p value | 0.477 | 0.014 | 0.004 | 0.018 |
| | Avoidance-type | Correlation coefficient | 0.209 | -0.012 | -0.103 | 0.132 |
| | | p value | 0.037 | 0.905 | 0.306 | 0.192 |

Correlation coefficient: Pearson's correlation coefficient
P value of 0.01 was considered statistically significant.

Table 7. Correlation coefficients of dilemma factors and dilemma coping factors according to five classifications based on years of nursing experience.

| Five classifications of experience | Dilemma coping factor | Dilemma factor | Treatment performance, Safety assurance | Characteristics of elderly patients | Collaborative relationships | Prioritization of duties |
|---|---|---|---|---|---|---|
| Novice group (n=50) | Self-resolving | Correlation coefficient | 0.421 | 0.310 | 0.232 | 0.094 |
| | | p value | 0.002 | 0.028 | 0.105 | 0.516 |
| | Avoidance-type | Correlation coefficient | -0.002 | -0.316 | -0.390 | -0.068 |
| | | p value | 0.991 | 0.025 | 0.005 | 0.638 |
| Competent group (n=58) | Self-resolving | Correlation coefficient | 0.099 | 0.042 | 0.209 | -0.097 |
| | | p value | 0.458 | 0.754 | 0.116 | 0.470 |
| | Avoidance-type | Correlation coefficient | 0.082 | -0.252 | -0.167 | -0.076 |
| | | p value | 0.541 | 0.056 | 0.211 | 0.570 |
| Proficient group (n=42) | Self-resolving | Correlation coefficient | -0.315 | -0.134 | 0.005 | -0.267 |
| | | p value | 0.042 | 0.399 | 0.975 | 0.087 |
| | Avoidance-type | Correlation coefficient | -0.024 | -0.273 | -0.316 | -0.038 |
| | | p value | 0.882 | 0.080 | 0.041 | 0.810 |
| Early-expert group (n=54) | Self-resolving | Correlation coefficient | -0.013 | 0.369 | 0.477 | -0.119 |
| | | p value | 0.926 | 0.006 | 0.000 | 0.392 |
| | Avoidance-type | Correlation coefficient | 0.109 | -0.120 | -0.141 | 0.007 |
| | | p value | 0.433 | 0.388 | 0.309 | 0.961 |
| Late-expert group (n=46) | Self-resolving | Correlation coefficient | -0.137 | 0.141 | 0.108 | -0.343 |
| | | p value | 0.363 | 0.351 | 0.477 | 0.020 |
| | Avoidance-type | Correlation coefficient | 0.338 | 0.097 | -0.064 | 0.263 |
| | | p value | 0.022 | 0.521 | 0.673 | 0.078 |

Correlation coefficient: Pearson's correlation coefficient
P value (two-tailed) of 0.01 was considered statistically significant.

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