The Skill Mix Model: A Preliminary Study of Changing Nurse Role Functions in Taiwan

Li-Chi Huang1 • Jwo-Leun Lee2 • Yia-Wun Liang2 • Ming-Yi Hsu3
Jui-Fen Cheng4 • Ting-Ting Mei5*

1RN, EdD, Assistant Professor, Department of Nursing, China Medical University, and Adjunct Supervisor, Department of Nursing, China Medical University Hospital • 2PhD, Associate Professor, Department of Senior Citizen Service Management, National Taichung Nursing College • 3RN, PhD, Assistant Professor, Department of Nursing, Chung-Shan Medical University, and Adjunct Supervisor, Department of Medicine and Nursing, Chung Shan Medical University Hospital • 4RN, MS, Instructor, Department of Nursing, China Medical University • 5RN, MSN, Clinical Preceptor, Department of Nursing, Chung-Shan Medical University.

ABSTRACT

Background: Nursing shortage is a critical problem worldwide. Using nurse aides (NAs) within a skill mix model has been applied in the healthcare delivery system as a strategy to improve nursing workforce shortages.

Purpose: The purpose of this study was to investigate changes in nurse perceptions of their role functions under the skill mix model in Taiwan.

Methods: This was a cross-sectional designed study that employed a structured questionnaire. Participants included 38 registered nurses from three medical wards in three hospitals that had implemented the skill mix model for 6 months. The questionnaire gathered data on participant demographics, perceptions on the role functions, role and job satisfaction of nurses, and patient care quality. Nurses’ role functions were grouped into independent, dependent, and interdependent categories.

Results: Results demonstrate that nurses’ perceptions of independent and interdependent role function have changed since the implementation of the skill mix model. The most significant role changes in the independent function category included the nurse as educator of NAs, supervisor for patient care, and evaluator for nursing care outcomes. The most significant role changes in the interdependent function category included the nurse as integrator of nursing work and coordinator of the healthcare team. Nurses’ perceived changes increase in repetitive confirmation of patient conditions and patient care quality.

Conclusions: This study revealed that nurses working in skill mix model environments need more authority to delegate and educate NAs and to supervise and integrate nursing care. Study results may serve as a reference for hospital nursing practice in Taiwan.

Key Words: nurses’ role function, skill mix model, nurse aide.

Introduction

The shortage of professional nurses is a worldwide problem, and balancing cost-effectiveness that ensures quality care for patients is a concern of all medical institutions. Modern medical systems must offer different medical services that maintain and recognize care models that enhance quality of care. In response to severe competition within the medical environment and a shortage of nurses, coupled with a concern for the quality of care, many studies have planned and classified nursing duties to enhance patient care by reallocating labor and introducing nonprofessional human resources (Li, 2005; Lu, 2009; Jung, Pearcey, & Phillips, 1994). Studies have shown that the skill mix model can reduce medical costs and enhance nursing autonomy, allowing nurses to manage more resources and enhance the medical team relationship by providing better quality care to patients (Aiken, Sochalski, & Lake, 1997; Lee, Yeh, Chen, & Lien, 2005). Previous research suggests that assistants can help with daily care of patients and in alleviating some problems associated with the nursing shortage, giving nurses more time for professional activities and providing better care quality (Capuano & Kinneman, 1989; Powers, Dickey, & Ford, 1990).

During the SARs outbreak in Taiwan in 2003, infection control in hospitals and surrounding environments was recognized as a serious problem. Taiwan’s Health Department conducted and implemented a series of projects and studies on nurse staffing allocation that constructed a care model designed to enhance care quality, solve infection problems, and improve nursing services.
control problems, and improve cost-effectiveness in health institutions (Health Care Management Office, 2005; Huang, 2005; Yin, 2005). With the increase of assistant personnel, nurses can play critical roles in instruction and support for healthcare assistants in patient care (Ahmed & Kitson, 1993; Reeve, 1994). Therefore, the question of how nurses’ role functions have changed in acute hospital care delivery systems is worth asking. Such insight applied to the skill mix model could help implement effective strategies to better orient, educate, satisfy, motivate, and retain quality nursing staff. Thus, these create a greater need for understanding changes in nurses’ role function and increase healthcare quality in medical center hospitals in Taiwan.

**Literature Review**

The skill mix model is a care model that includes physicians, nurse practitioners, registered nurses, and other medical personnel (Lu, 2009). In Taiwan, the current skill mix model was defined to include registered nurses and nurse aides (NAs) working together in patient care (Lu, 2009; Mei, Lee, Liang, & Huang, 2010; Spilsbury & Meyer, 2001). In the skill mix model, different titles are used for assistive personnel in western countries, such as nursing care assistants, unlicensed assistive personnel, support workers, nursing assistants/NA, and healthcare assistants. Assistive personnel in western countries may be grouped under the general term healthcare assistants (Thornley, 2000). In Taiwan, assistive personnel have been used in long-term care, including home care services and nursing institutions for several years, and are generally known as nurse aides (Chiu & Hsu, 2005; Lee, Wang, Chang, Huang, & Huang, 2010).

Studies suggest that using assistive personnel and rearranging job responsibilities could reduce cost (Bostrom & Zimmerman, 1993; Lee et al., 2005) and registered nurses’ workloads (Chang, Lam, & Lam, 1998; Jung et al., 1994). Some studies indicate that nurses expect more assistive personnel for assisting in patient care (Francomb, 1997; McKenna, 1995; McKenna & Hasson, 2002; Rolfe, Jackson, Gardner, Jasper, & Gale, 1999). Lengacher et al. (1994) found that the nursing model provides improved outcomes of nurses’ job satisfaction, autonomy, and stay intention and that nurses are more satisfied with their roles in the skill mix model.

Although assistive personnel’s participation in this nursing model enhances nurses’ job satisfaction, the requirement that nurses monitor assistants’ practice and integrate patient care increases nurses’ responsibility, workload, and stress (Cone, McGovern, Barnard, & Riegel, 1995; Huang, 2003; Keeney, Hasson, McKenna, & Gillen, 2005). Some scholars have also indicated that, although assistive personnel’s participation reduces costs, it increases registered nurses’ responsibility and monitoring burden and reduces care quality (Dowie & Langman, 1999; Garretson, 2005; Lang, Hodge, Olson, Romano, & Kravitz, 2004; Lu, 2009; Sovie & Jawad, 2001). Other scholars are concerned that assistive personnel may replace nurses (McKenna, 1995; Savage, 1997; Spilsbury & Meyer, 2004). In the study of Neidlinger, Bostrom, Stricker, Hild, and Zhang (1993), nurses suggested that it is unsafe to work with assistive personnel and that registered nurses are the leaders in nursing care and assistive personnel cannot replace them.

**Nurses’ role function**

The International Council of Nurses (ICN) defined nursing as autonomous and collaborative care of individuals, sick or well, in all settings and in all ages, families, and groups (ICN, 2010). Nursing roles encompass illness prevention and care, health promotion, and disabled and palliative care. Other important roles of nursing include being an advocate, providing a safe environment, and participating in research and shaping health policy for patient and healthcare systems of management and education (ICN, 2010).

The Department of Health in Taiwan (Sheen, 2005) classified clinical nurses’ role functions as follows: (a) implementing nursing activity, (b) assisting with medical activities, (c) assisting the medical team, (d) implementing infection control, (e) assisting disabled patients, (f) assisting patients in disease adaptation, and (g) giving health advice and education for patients and families. Chang, Yu, Chen, and Tien (2005) found that clinical nurses’ role functions included judging patient care needs and assessing patients’ physical or mental influence from disease complications during critical times such as periods of anxiety, fear, sorrow, and physical vulnerability.

Squires (2004) used concept analysis on related articles to describe role enactment by acute care nurses. They found seven core dimensions for acute care nurses’ role enactment, including autonomy, care delivery, culture management, information management, leadership, psychological management, and relationship management.

Irvine, Sidani, and Hall (1998) divided nurses’ role functions into formal role function (e.g., patient education) and informal role function (e.g., patient transfer). The concept of the Nursing Role Effectiveness Model (Irvine et al., 1998) includes nurses’ formal roles as independent, dependent, and interdependent. The nursing scope encompasses professionalism and nurses’ role function based on the degree of autonomy in practice, resulting in independent, dependent, and interdependent role functions (Sheen, 2005). Scholars described nurses’ three role functions as follows (Irvine et al., 1998; Sheen, 2005):

1. **Independent role function:** This role refers to nurses’ unique role functions and responsibilities. Nurses can independently practice patient care without doctors’ orders and judge and make decisions by themselves. The independent nursing role includes assessment, decision-making, nursing intervention, and follow-up care plan.

2. **Dependent role function:** The dependent role means that nurses’ practice is based on doctors’ orders (such as
Nurses' role function in the skill mix model

Studies suggest that assistive personnel participate in acute medical care. Registered nurses have encountered role changes in terms of assigning patient care, team leadership, evaluating team implementation, personnel distribution, patient care management, and resource distribution (Barter, McLaughlin, & Thomas, 1997; McLaughlin, Thomas, & Barter, 1995; Spilsbury & Meyer, 2004). Barter et al. (1997) found that most registered nurses' roles involve leading care teams of assistive personnel. This new role has increased nurses' workload, such as job assignment and confirming and monitoring assistive personnel's practice, while reducing time spent on direct patient care. McLaughlin et al. (2000) compared registered nurses' perception of their roles in using nursing care assistants in acute care hospitals in the United States and in the United Kingdom. Most registered nurses in the United Kingdom suggested little change to their roles but noted their roles required spending extra time assigning jobs and instructing assistive personnel. Barter et al. (1997) indicated that registered nurses or nursing managers instructed and supervised assistive personnel. With regard to job assignment, half of the registered nurses in the United States and in the United Kingdom discussed among themselves how to assign jobs to assistive personnel (McLaughlin et al., 2000). When encountering difficulties working with assistive personnel, nurses asked for supervisors' opinions for problem solving.

On the basis of the abovementioned research, nursing role function has changed after implementing the skill mix model. Taiwan has applied the skill mix model with assistive personnel since 2003. However, study on the change of nurses' role function is lacking. Thus, this study investigates the change of nurses' perceived role function in the skill mix model in Taiwan.

**Methods**

This study was a descriptive cross-sectional design using a structured questionnaire to investigate the changes of nurses’ perceived role functions after implementing the skill mix model for 6 months in 2009. Subjects were selected using purposive sampling in three medical wards from three different hospitals based on a trial project in northern, central, and southern Taiwan. The subjects were nurses who had worked for at least 6 months in their current units. The nurses involved at hospitals in the trial project were all invited to join the study. The study population consisted of all the nurses, totaling 39 nurses enrolled in the survey and resulting in 38 valid questionnaires (97.44%). The NAs were involved in patient care without changing the original nursing labor. The ratio of NAs to patients in the three medical wards was 1:5, 1:6, and 1:8. The average age of patients in these three medical wards was 66.68 ± 21.11 years old. The level of functional independence/dependence for the 10 activities of daily living of in-patients who participated in the skill mix model was evaluated using a Barthel Index. The average Barthel Index score of participating patients was 21.08 ± 14.22. The levels of functional daily activities of patients who participated in the skill mix model ranged between completely dependent and severe dependent.

The research instrument was established from a systematic literature review and referenced the recommendations of Barter et al. (1997). The survey instrument contained 22 questions, 19 of which requested information specific to registered nurses’ role function changes in medical wards within nursing service delivery models using assistive personnel. Three open-ended questions elicited information about the change of registered nurses’ perceptions of job satisfaction and patient care quality when working with NA, which were correlated with demographic characteristics such as age, gender, educational level, years of nursing experience, and experience in working with assistive personnel. A 7-point Likert Scale (0 = no change, 1 = slight increase, 2 = moderate increase, 3 = high increase, -1 = low decrease, -2 = moderate decrease, -3 = high decrease) elicited the degree of change experienced or perceived in the skill mix model. The more positive the score, the greater the role function intensity.

Content validity of the instrument was assessed by a panel of five experts that included an associate professor of health policy, associate professor of medical policy and management, associate professor of nursing, supervisor of a hospital nursing department, and director of hospital care quality control. The scoring of expert validity was based on Lynn’s (1986) content validity index, including 4 points: 4 = very proper, indicating that the item should remain and not be skipped; 3 = proper, indicating that the item should remain with slight modification; 2 = proper after modification, indicating that the item should remain with significant modification; 1 = improper, indicating that the item should be completely modified or eliminated. The average content validity index (CVI) of this questionnaire was .9. Questionnaire reliability of Cronbach’s alpha was .9. On the basis of the reliability and validity obtained above, two items were added for a total of 24 items in the final questionnaire.
This study was conducted after approval from the Human Subjects Committee. To ensure their rights and privacy, participants were informed of the purpose of the study and questionnaires were kept anonymous for confidentiality.

Data collected were analyzed by SPSS Version 15.0 for Windows (SPSS, Inc., Chicago, IL, USA) for descriptive statistics, one sample t-test, and Pearson’s product moment correlation coefficient.

### Results

#### Nurses’ Demographic Data

In terms of geographic distribution, 10 of the subjects were from northern Taiwan, 15 were from central Taiwan, and 13 were from southern Taiwan. Thirty-four participants were nurses, three were head nurses, and one was a supervisor. All participants were women. The average participant age was 35.26 ± 8.49 years old, ranging from 23 to 57 years old. Nearly half were 31–40 years old (47.37%). A majority (57.89%) was married. Most had graduated from college (68.42%) or university (23.68%) and held a nurse status at Level N2 (42.11%) or Level N1 (28.95%). Slightly more than a quarter (28.95%) had been nursing leaders. Most participants had held their current jobs for 6–10 years (39.47%) or 1–5 years (31.58%). Most nurses had 11–15 years (26.32%) or 6–10 years (23.68%) of professional nurse working experience.

Each hospital hired and trained NAs under this model. The average age of NAs was 45.96 ± 9.00 years old. Their average hospital work experience was 19.22 ± 48.45 months, and 56% of NAs had worked as assistive personnel in long-term care.

#### Changes in Nurses’ Perceived Role Functions

The current study classified nurses’ role functions into independent, interdependent, and dependent role functions. Table 1 shows a result of one-sample t test used to survey whether nurses’ perceived role function changes after implementing the skill mix model.

To simplify the data, slight and moderate increases were consolidated with high increase (termed increase) and low and moderate decreases were consolidated with high decrease (termed decrease). Average nurse perception of total items of independent role function was 6.58 ± 8.94 (statistically significant at p < .001); the average nurse perception of total items of interdependent role function was 2.45 ± 3.97 (statistically significant at p < .001); the average

| TABLE 1. Changes in Nurse Perceptions of Role Function (N = 38) |
|---|---|---|---|---|---|
| **Item** | **Decrease (%)** | **No Change (%)** | **Increase (%)** | **Mean** | **SD** | **p** |
| Independent role function | | | | 6.58 | 8.94 | <.001*** |
| 1. Assessor of patient problems | 5.26 | 63.16 | 31.57 | 0.37 | 0.79 | .006** |
| 2. Educator for nurse aide | 2.63 | 34.21 | 63.16 | 0.84 | 1.10 | <.001*** |
| 3. Planner for nursing care plan | 0.00 | 65.79 | 34.21 | 0.50 | 0.80 | <.001*** |
| 4. Planner of care plan | 28.95 | 39.47 | 31.58 | 0.21 | 1.09 | .24 |
| 5. Evaluator for patient care outcome | 13.16 | 36.84 | 50.00 | 0.55 | 0.95 | <.001*** |
| 6. Evaluator for nursing care team implementation | 7.89 | 39.47 | 52.63 | 0.63 | 0.88 | <.001*** |
| 7. Consultant for patient or family | 10.53 | 34.21 | 55.26 | 0.68 | 0.99 | <.001*** |
| 8. Educator of patient or family | 10.53 | 39.47 | 50.00 | 0.66 | 1.02 | <.001*** |
| 9. Researcher for patient care | 5.26 | 55.26 | 39.47 | 0.55 | 0.95 | <.001*** |
| 10. Allocation of nursing care team workforce | 13.16 | 68.42 | 18.42 | 0.11 | 0.80 | .42 |
| 11. Responsible for delegation of patient care | 10.53 | 50.00 | 39.48 | 0.41 | 0.82 | .004** |
| 12. Supervisor and manager for patient care | 2.63 | 42.11 | 55.26 | 0.62 | 0.75 | <.001*** |
| 13. Team leader | 2.63 | 57.89 | 39.47 | 0.45 | 0.69 | <.001*** |
| Intermediate role function | | | | 2.45 | 3.97 | <.001*** |
| 1. Monitoring and reporting patient’s condition | 15.79 | 42.11 | 42.10 | 0.32 | 0.81 | .02* |
| 2. Advocator for patient | 15.79 | 44.74 | 42.10 | 0.32 | 0.81 | .02* |
| 3. Coordinator of healthcare team | 5.26 | 55.26 | 39.48 | 0.47 | 0.80 | <.001*** |
| 4. Consultant for healthcare team | 5.26 | 57.89 | 36.85 | 0.42 | 0.76 | .002** |
| 5. Assigning work in the unit | 5.26 | 55.26 | 39.47 | 0.39 | 0.68 | <.001*** |
| 6. Integrating the classification of nursing work | 2.63 | 55.26 | 42.10 | 0.47 | 0.69 | <.001*** |
| Dependent role function | | | | 0.34 | 0.71 | .005** |
| Implementing doctors’ orders | 0.00 | 78.95 | 21.05 | 0.34 | 0.71 | .005** |

Note. One-sample t test, Ho: μ = 0.
*p < .05. **p < .01. ***p < .001.
nurse perception of total items of dependent role function was $0.34 \pm 0.71$ (statistically significant at $p = .005$).

Nurses’ independent role functions increased significantly in the following order: 63.16% perceived an increased role function as an NA educator ($p < .001$); over 50% of nurses perceived an increased independent role function as a consultant ($p < .001$) and educator for patients and families ($p < .001$), supervisors and managers for patient care ($p < .001$), evaluator for nursing team implementation ($p < .001$), and patient outcome evaluator ($p < .001$).

In terms of interdependent role function, 42.1% of nurses perceived no change in interdependent role function in monitoring and reporting patient conditions ($p = .02$) and integrating nursing work classification ($p < .001$). Over 50% of nurses perceived no change in interdependent role function as coordinator ($p < .001$), consultant for the healthcare team ($p = .002$), or patient advocate ($p = .02$).

With regard to dependent role function, most nurses perceived no change in their dependent role function ($p = .005$). However, 21.05% of nurses perceived an increased function in terms of “implementing doctors’ orders.”

Analysis of variance procedures identified no statistically significant differences among registered nurses’ perceived role function in terms of participant age, gender, education, number of years as a registered nurse, length of unit assignment, type of unit, or hospital designation.

**Nurses’ Perceived Role and Job Satisfaction and Patient Care Quality**

Table 2 shows slightly increased, but statistically insignificant, role satisfaction and job satisfaction, which nurses perceived after implementing the skill mix model. Regarding nurses’ perceived change of patient care quality, 52.63% of nurses revealed a statistically significant increase ($p = .001$) in repetitive confirmation of patients’ conditions and 65.79% of nurses reported a statistically significant increase in patient care quality after implementing the skill mix model ($p < .001$).

**Correlation Between Nurses’ Role Function and Other Related Variables**

With regard to independent role function, findings showed a significant medium positive correlation between nurses’ perceived change of independent role function and interdependent role function ($r = .541$, $p < .01$) and between nurses’ perceived change of independent role function and patient care quality ($r = .422$, $p < .01$). There was a significant high positive correlation exhibited between nurses’ perceived role satisfaction and job satisfaction ($r = .900$, $p < .01$) and a medium positive correlation between nurses’ perceived role satisfaction and multiple confirmation of patients’ conditions ($r = .515$, $p < .01$) and between nurses’ perceived role satisfaction and patient care quality ($r = .642$, $p < .01$). With regard to job satisfaction, findings showed a significant medium positive correlation between nurses’ perceived change of job satisfaction and perceived change of job satisfaction and perceived change of patient care quality ($r = .621$, $p < .01$). As to the variables related to patient care quality, findings showed a significant medium positive correlation between nurses’ perceived multiple confirmation of patients’ conditions and perceived change of patient care quality ($r = .379$, $p < .05$; Table 3).

**Discussion**

**Educator and Supervisor of NAs**

In this study, 63.16% of participants perceived an increase of independent role function as NA educator. In the skill mix model, nurses must spend more time educating NA to ensure...
their care ability. The participation of NAs in nursing delivery care system diversifies nurses’ roles. Health education is critical in nursing. Health education has previously only been available to patients and families. However, with the inclusion of assistive personnel into the care team, nurses now play roles as patient care quality supervisors (Keeney et al., 2005). Thus, nurses have an increased role as educator and supervisor. The finding is consistent with Spilsbury and Meyer (2001), who suggested that registered nurses’ role functions have changed in terms of patient care assignment, team leadership, personnel distribution, and patient care after including unlicensed assistive personnel in care service. Most registered nurses have indicated that their role functions of job assignment, confirmation, and supervision of unlicensed assistive personnel practice have increased. McLaughlin et al. (2000) compared using nursing care assistants in acute care hospitals in the United States and in the United Kingdom and found that most registered nurses in the United Kingdom spend more time assigning and instructing assistive personnel. That finding is similar to this study. In the skill mix model, registered nurses play a significant role by doing appropriate delegation to ensure patients receive a high standard and safety of care (Gillen & Graffin, 2010; Neidlinger et al., 1993). Thus, registered nurses should be trained in delegation skills and supervision of assistive personnel.

**Educator and Consultant for Patients and Families**

In this study, 55.26% of the nurses perceived an increase in their independent role as consultants to patients and their families and 50% perceived an increase in their independent role as educators to patients or their families, which represents a statistical difference. This research found most families do not accompany patients all of the time. Thus, nurses must communicate further with families about patients’ conditions, resulting in increased interpretation and consultation of nurses’ role function. Since NAs receive training in patient care, nurses have more time to plan nursing care and health education for patients or families. The result of this study is similar to that of several other studies. With the contribution of assistive personnel, nurses have more time to conduct jobs requiring professional knowledge and skill, such as patient education and evaluation (Gould et al., 1996; Neidlinger et al., 1993), care plans, support for patients’ families, holistic patient care (Liou & Chang, 2007), and nursing instruction (Lee et al., 2005; Liou & Chang, 2007).

**Team Coordinator and Consulter**

In this study, 52.63% of nurses perceived an increased independent role as nursing team evaluators and increased dependent roles as coordinators, leaders, and medical team consultants. Nurses also allocate labor, provide professional skills for NA, monitor care quality, and communicate with other medical team members. This study concurred with other findings about increased nurses’ role functions as coordinators and medical team consultants. The study of McLaughlin et al. (2000) found that about half of registered nurses in the United States and in the United Kingdom suggested that nurses should discuss job

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**TABLE 3.**

**Relationships Among Changes in Nurse Perceptions of Role Function, Satisfaction, and Patient Care Quality**

<table>
<thead>
<tr>
<th>Item</th>
<th>Independent Role Function</th>
<th>Interdependent Role Function</th>
<th>Dependent Role Function</th>
<th>Role Satisfaction</th>
<th>Job Satisfaction</th>
<th>Multiple Check Patient</th>
<th>Patient Care Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Role function</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Independent role function</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interdependent role function</td>
<td>0.541**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dependent role function</td>
<td>0.163</td>
<td>0.088</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Satisfaction</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Role satisfaction</td>
<td>0.227</td>
<td>0.055</td>
<td>0.129</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Job satisfaction</td>
<td>0.251</td>
<td>0.107</td>
<td>0.093</td>
<td>0.900**</td>
<td>1</td>
<td></td>
<td></td>
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<tr>
<td>Patient care quality</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multiple check patient</td>
<td>0.110</td>
<td>0.164</td>
<td>0.150</td>
<td>0.515**</td>
<td>0.510**</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Patient care quality</td>
<td>0.422**</td>
<td>0.192</td>
<td>0.230</td>
<td>0.642**</td>
<td>0.621**</td>
<td>0.379*</td>
<td>1</td>
</tr>
</tbody>
</table>

*p < .05 (two-tailed). **p < .01 (two-tailed).
assignments and obstacles with each other when working with assistive personnel. Registered nurses in the United States (56%) and in the United Kingdom (83%) consulted with their supervisors. Researchers found that nurses’ roles did not change when communicating with doctors and the medical team (Spilsbury & Meyer, 2004). However, some nurses found that assistive personnel collected incorrect or incomplete data needed in clinical decision-making or communicating with doctors and other teams (Barter et al., 1997). Thus, nurses not only assign work to assistive personnel but also monitor their care quality. To cooperate with assistive personnel, nurses and assistive personnel should recognize each other’s role function and job description (McLaughlin et al., 2000).

With more members in medical teams, nurses serve the roles of coordinator and consultant and integrate nursing content after job classification to ensure that nursing teams fully communicate and cooperate with each other in professional work division.

Nurses’ Perceived Satisfaction, Patient Care Quality, and Role-Function Relationships

In this skill mix model, 55.26% of nurses perceived their roles as supervisors and managers of patient care, 50% perceived their roles as evaluators of patient care, 39.48% perceived an increased independent role in assigning patient care, and 42.1% perceived an increased interdependent role in monitoring and reporting patients’ conditions. As to care quality, 65.79% proposed increased patient care quality after implementing the skill mix model and 52.63% recommended increased multiple confirmations of patient conditions. As assistive personnel receive training in patient care, they can enhance patient care. Thus, assistive personnel participating in medical teams raise concerns with regard to patient safety and care quality (Hugh, McKenna, & Keeney, 2004; McGrillis, Dorran, & Pink, 2004). Nurses are expected to assign work to assistive personnel and are responsible for proper assigning, monitoring, and supporting assistive personnel (Keeney et al., 2005). These functions meet nurses’ change of role functions in this study.

A significantly positive correlation exists between nurses’ perceived change of independent and interdependent role functions. The independent role such as recognizing patient care, constructing a nursing plan, and evaluating care is related with interdependent roles such as monitoring and reporting on patient conditions. Nurses who engage in professional independent roles, such as managing medical teams, will be more likely to fulfill interdependent roles to communicate and coordinate with the medical team. Thus, patients will receive total care instead of fragmented and task-oriented care (Thornley, 2000). Therefore, patient care quality closely relates to nurses’ independent role function.

This study revealed that nurses’ perceived job satisfaction positively correlates with role satisfaction, repetitive confirmation of patient conditions, and patient care quality. Khowaja, Merchant, and Hirani (2005) suggested that nurses’ job satisfaction directly relates to patient care results and that improved nursing job satisfaction enhances patient satisfaction.

Conclusions

The findings of this study clearly demonstrate nurses’ professional role functions in this skill mixed model. The participation of NAs significantly changes nurses’ role functions, increasing nurse responsibilities by making them educators for assistants, consultants, educators for patients and families, supervisors and managers of patient care, group leaders, and care team coordinators. Nurses construct professional nursing images and give patients access to high-quality medical care. Findings can help in developing better policies and improving the medical environment.

Responding to nursing staff shortages and the generally large workload, the implementation of a skill mix model that introduces the NA has created a new care model in nursing care, which has influenced the clinical care role functions of nurses. This study demonstrates that strengthening nurses’ management capacities is the most important step to achieving success in the skill mix model. Nurses should enhance their supervisory roles, educate NAs, and evaluate NA practice in order to provide appropriate care.

Limitations

There are some limitations of this study. It was conducted at hospitals under trial project conditions. Only 38 nurses were involved, making results unable to be generalized to the broader population. With a limited sample size and budget, only a cross-sectional design was conducted, making researchers unable to analyze different role function perceptions among different nurse levels. A significantly larger sample size will be needed to better understand role function changes and related factors. This study is based on participants’ self-report questionnaires that ask participants to recall their role functions and experience prior to implementation of the skill mix model. This may introduce problems because of faulty memory and lack of objectivity. We suggest that future studies examine nurses’ work situations and role functions using on-site observation and/or an experimental designed. Collecting objective data will enable future research to demonstrate nurses’ changing role functions in the skill mix model more thoroughly.

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References


台灣護理人員在技術混合照護模式中角色功能改變之先驅性研究

黃立琪1  李卓倫2  梁亞文2  徐明儀3  鄭睿芬4  梅婷婷5*

1中國醫藥大學護理學系助理教授兼任中國醫藥大學附設醫院護理部督導長  2國立臺中護理專科學校老人服務事業管理科副教授  3中山醫學大學護理學系助理教授兼中山醫學大學附設醫院護理部督導  4中國醫藥大學護理學系講師  5中山醫學大學護理學系臨床實習指導老師

背景  護理人員短缺是目前全世界所面臨的嚴重問題，因此運用照顧服務員於護理人力中之技術混合照護模式，已被應用在健康照護體系中。

目的  研究目的在調查台灣於技術混合照護模式實施後，護理人員自覺其角色功能之改變情形。

方法  研究採橫斷式研究設計，以結構式問卷進行調查。研究對象共38位，為試辦計劃的三間醫院，於實施技術混合照護模式六個月後之內科病房護理師。結構式問卷內容包括：人口學基本資料、護理人員自覺其角色功能、角色與工作滿意度、病人照護品質，護理人員角色功能包含獨立性、依賴性及相互依賴性等角色功能。

結果  研究結果顯示，護理人員自覺其獨立性與相互依賴性角色功能，於技術混合照護模式實施後有所改變。角色功能明顯改變的有：擔任照顧服務員教育者、病人照護指導者、及護理照護結果之評價者等獨立性角色功能，及護理工作和健康照護團隊之整合者等相互依賴性角色功能。此外護理人員自覺病人被重複確認及病人照護品質是增加的。

結論  研究顯示，護理人員在技術混合照護模式中，需要更多關於分派、教育照顧服務員，及擔任指導和護理照護整合者之角色功能。此研究結果將可作為台灣醫院之護理照護模式的參考。

關鍵詞：護理角色功能、技術混合照護模式、照顧服務員。