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## CHAPTER 4

### FINDINGS AND DISCUSSION

A descriptive study was used to determine the CE needs among nurses working in three teaching hospitals of China Medical University.

#### Findings

The 264 nurses working in three teaching hospitals of China Medical University were surveyed to explore their continuing education needs. Data collection was performed in December 1995. A 91 percent return rate, with 241 questionnaires returned, was obtained. Descriptive statistical analysis was used to identify frequencies and percentages. The results were discussed according to the three research objectives. The results were presented in tables coupled with analytical discussion divided into three following parts:

1. Demographic data;
2. CE needs among nurses; and
3. Responses to open-ended questions.

**Part 1 Demographic data**

The sample selected was 264 nurses. Since only 241 questionnaires were obtained, the total number of study subjects analyzed in this study was 241. These 241 female nurses were divided into groups of age, marital status, nursing school graduated, highest degree received, working hospital, working area, position, and years of experience. The information analysis was presented in table 1 to 4 as follows:

Table 1 Frequency and percentage of subjects grouped by age and marital status.

item	frequency (n=241)	percentage (%)
<b>Age</b>		
51-60 years	12	4.98
41-50 years	41	17.01
31-40 years	85	35.27
21-30 years	93	38.59
under 21 years	10	4.15
<b>Marital status</b>		
single	46	19.09
married	193	80.09
divorced	1	0.41
widowed	1	0.41

From table 1, for age group, there were 93 subjects or 38.59 percent whose age was between 21-30 years, only 10 subjects or 4.15 percent were under 21 years. For marital status, 193 subjects which was 80.09 percent were married, 46 subjects or 19.09 percent were single. Only one subject was divorced and one was a widow or 0.41 percent equally.

**Table 2** Frequency and percentage of subjects grouped by nursing school graduated and highest degree received

item	frequency (n=241)	percentage (%)
Nursing school graduated		
secondary nursing school	241	100.00
Highest degree received		
certificate	160	66.39
associate degree	70	29.05
bachelor degree	11	4.56

From table 2, for the nursing school graduated group, all the subjects graduated from secondary nursing school. For highest degree received, 160 subjects or 66.39 percent, reported their highest academic degree in nursing to be a certificate, 70 subjects or 29.05 percent, had an associate degree, and only 11 subjects or 4.56 percent, had a bachelor degree.

**Table 3** Frequency and percentage of subjects grouped by working hospital and working area.

item	frequency (n=241)	percentage (%)
<b>Working hospital</b>		
1st teaching hospital	119	49.38
2nd teaching hospital	106	43.98
3rd teaching hospital	16	6.64
<b>Working area</b>		
medical unit	58	24.07
surgical unit	72	29.88
pediatric unit	25	10.37
OB-Gyn unit	17	7.05
EENT unit	11	4.56
emergency unit	11	4.56
nursing service unit	4	1.66
dermatological unit	2	0.83
others	41	17.02

Table 3 showed that 119 subjects or 49.38 percent, came from the first teaching hospital, 106 subjects or 43.98 percent, from the second teaching hospital, and only 16 subjects or 6.64 percent, from the third teaching hospital. This table also showed that 72 subjects or 29.88 percent, worked in surgical unit, 58 subjects or 24.07 percent, in medical unit, and only 2 subjects or 0.83 percent, in dermatological unit.

**Table 4** Frequency and percentage of subjects grouped by position and years of clinical experience

item	frequency (n=241)	percentage (%)
<b>Position</b>		
staff nurse	201	83.40
head nurse	32	13.28
supervisor	6	2.49
director of nursing	2	0.83
<b>Years of clinical experience</b>		
< 1 year	7	2.90
1-5 years	43	17.84
6-10 years	84	34.85
11-15 years	48	19.92
16-20 years	13	5.39
>20 years	46	19.10



Table 4 showed that 201 subjects or 83.40 percent, were staff nurses, only 40 subjects or 16.60 percent, were in administrative or management positions consisting of 32 head nurses, 6 supervisors, and 2 directors of nursing. For the years of clinical experience in nursing field, 84 subjects or 34.85 percent, were in the group of 6-10 years, 48 subjects or 19.92 percent, were in the group of 11-15 years, and only 7 subjects or 2.90 percent, were in the group of less than one year.

## Part 2 Continuing education needs among nurses

Nurse's CE Needs Inventory, the second part in the questionnaire developed by the researcher, was used to identify the CE topics needs among total subjects working in three teaching hospitals of China Medical University, and to determine the CE topic needs among nurses working in different clinical units and nurses with different years of clinical experience in nursing field. The Nurse's CE Needs Inventory consisted of 62 items divided and grouped into five content areas: general areas of nursing, nursing administration, nursing research, nursing education, and new knowledge and skills in nursing. The information analysis was categorized into three aspects:

1. Perception of continuing education topic needs among nurses;
2. Perception of continuing education topic needs among nurses in different clinical units; and
3. Perception of continuing education topic needs among nurses with different years of clinical experience in nursing field.

### Perception of continuing education topic needs among nurses

The most frequently identified continuing education topic needs among nurses working in three teaching hospitals of China Medical University were presented in table 5. In table 5, the topics were sorted by the frequency and percentage of "really need" in descending order of priority. Only those topics with more than 120 of subjects (the threshold = 50% ) were included in table 5. Each topic in table 5 was counted as 100 percent.

**Table 5 Rank orders of CE topic needs among nurses identified by "really need"**

topic	frequency (n=241)	percentage (%)
1. Advanced cardiac life support	178	73.86
2. Formulating a working nursing care plan	160	66.67
3. Nursing research methodology	156	64.73
4. Professional issues & trends in nursing	156	64.73
5. Nursing staff training and development	149	61.83
6. New concepts & theories in nursing	145	60.17
7. Understanding the nursing research articles	142	59.17
8. Problem solving & decision making skills	140	58.09
9. Differential nursing diagnosis	139	57.92

**Table 5** Rank orders of CE topic needs among nurses  
identified by "really need" (cont'd)

topic	frequency (n=241)	percentage (%)
10. Individual rights & responsibility	138	57.50
11. Application of computer technology in nursing	136	56.43
12. Psychology	135	56.02
13. Job stress management	133	55.19
14. Legal issues in nursing	133	55.19
15. Using research findings in nursing practice	131	54.58
16. Interpersonal relationships	127	52.70
17. Nosocomial infection, infection control and universal precautions	121	50.21

Table 5 showed that the most frequently requested CE topic need among nurses was advanced cardiac life support with 178 subjects which was 73.86 percent, followed by the topic of formulating a working nursing care plan with 160 subjects which was 66.67 percent. The topics of interpersonal relationships and nosocomial infection, infection control, and universal precautions were the last two in rank with 127 subjects or 52.70 percent, and 121 subjects or 50.21 percent respectively.

It also may be interesting to note the least frequently requested CE topic needs. The top 10 topics identified by nurses as "no need" were presented in table 6 listed in descending order of priority. Each topic in table 6 was counted as 100 percent.

**Table 6** Rank orders of CE topic needs among nurses identified by "no need"

topic	frequency (n=241)	percentage (%)
1. Critical thinking	31	12.86
2. Principles of personnel management in nursing	26	10.83
3. Teaching strategies in clinical setting	24	9.96
4. Stress, coping and adaptation	22	9.13
5. Nursing recording and reporting	21	8.90
6. Leadership and nursing	21	8.90
7. Trends in nursing education system	20	8.30
8. Developing instructional media	19	7.88
9. Nursing care for AIDS patients	19	7.88
10. Motivation/influencing others	18	7.47

Table 6 showed that the two most frequently identified "no need" CE topics by nurses were critical thinking with 31 subjects which was 12.86 percent, and principles of personnel management in nursing with 26 subjects which was 10.83 percent. The topics of nursing care for AIDS patients and motivation/influencing others were the last two in rank with 19 subjects or 7.88 percent and 18 subjects or 7.47 percent respectively.

#### **Perception of continuing education topic needs among nurses in different clinical units**

The most frequently requested continuing education topic needs among nurses in different clinical units were presented in table 7 to 14, which were sorted by the frequency and percentage of "really need", and only the 10 top-ranked CE topic needs among nurses in different clinical units listed in these tables. Unit 8, however, was excluded in this presentation because only 2 nurses were investigated. It was too small to describe.

Each CE topic presented in the following tables was counted as 100 percent of its own.

The 10 most frequently requested CE topic needs among nurses in medical unit were presented in table 7.



**Table 7** Rank orders of CE topic needs among nurses in medical unit identified by "really need"

topic	frequency (n=58)	percentage (%)
1. Problem solving and decision making skills	40	68.97
2. Advanced cardiac life support	38	65.52
3. Formulating a working nursing care plan	38	65.52
4. Professional issues and trends in nursing	38	65.52
5. Job stress management	36	62.07
6. Psychology	36	62.07
7. Application of computer technology in nursing	36	62.07
8. Nursing research methodology	35	60.34
9. Nursing staff training and development	35	60.34
10. Advanced medical nursing	34	58.62

Table 7 showed that the most frequently requested CE topic need among nurses in medical unit was problem solving and decision making skills with 40 subject which was 68.97 percent, the topics of advanced cardiac life support, formulating a working nursing care plan, and professional issues and trends in nursing were the second at the same level of 38 subjects which was 65.52 percent. The topic of advanced medical nursing, however, was the last one in rank with 34 subjects which was 58.62 percent, and those topics of nursing research methodology and nursing staff training and development were next to the last one with the same level of 35 subjects which was 60.34 percent.

The 10 most frequently requested CE topic needs among nurses in surgical unit were presented in table 8.

**Table 8 Rank orders of CE topic needs among nurses in surgical unit identified by "really need".**

topic	frequency (n=72)	percentage (%)
1. Advanced cardiac life support	58	80.56
2. Formulating a working nursing care plan	52	72.22
3. Professional issues and trends in nursing	51	70.83
4. Nursing staff training and development	47	65.28
5. Nursing research methodology	45	62.50
6. Differential nursing diagnosis	45	62.50
7. Legal issues in nursing	45	62.50
8. Individual rights and responsibility	44	61.11
9. New concepts and theories in nursing	43	59.72
10. Advanced surgical nursing	43	59.72

Table 8 showed that the most frequently requested CE topic need among nurses in surgical unit was advanced cardiac life support with 58 subjects which was 80.56 percent, the second one was formulating a working nursing care plan with 52 subjects which was 72.22 percent. The topics of new concepts and theories in nursing and advanced surgical nursing were the last two in rank with the same level of 43 subjects or 59.72 percent.

The 10 most frequently requested CE topic needs among nurses in pediatric unit were presented in table 9.

**Table 9** Rank orders of CE topic needs among nurses in pediatric unit identified by "really need".

topic	frequency (n=25)	percentage (%)
1. Advanced cardiac life support	22	88.00
2. Advanced pediatric nursing	18	72.00
3. Differential nursing diagnosis	18	72.00
4. Individual rights and responsibility	17	68.00
5. Psychology	16	64.00
6. Problem solving and decision making skills	16	64.00
7. Application of computer technology in nursing	16	64.00
8. Formulating a working nursing care plan	15	60.00
9. Value and ethical issues in nursing	15	60.00
10. Professional issues and trends in nursing	15	60.00

Table 9 showed that the most frequently requested CE topic need among nurses in pediatric nursing was advanced cardiac life support with 22 subjects which was 88.00 percent, the topics of advanced pediatric nursing and differential nursing diagnosis were second with the same level of 18 subjects which was 72.00 percent. The topics of formulating a working nursing care plan, value and ethical issues in nursing, and professional issues and trends in nursing, however, were the last three in rank with the same level of 15 subjects which was 60.00 percent.

The 10 most frequently requested CE topic needs among nurses in OB-GYN unit were presented in table 10.

**Table 10** Rank orders of CE topic needs among nurses in OB-GYN unit identified by "really need".

topic	frequency (n=17)	percentage (%)
1. Advanced cardiac life support	15	88.24
2. Nursing research methodology	14	82.35
3. New concepts and new theories in nursing	13	76.47
4. Formulating a working nursing care plan	12	70.59
5. Understanding the nursing research articles in nursing	12	70.59
6. Advanced OB-GYN nursing	11	64.71
7. Individual rights and responsibility	11	64.71
8. Professional issues and trends in nursing	11	64.71
9. Using research findings in nursing education	10	58.82
10. New theories and developments in fundamental medicine	10	58.82

Table 10 showed that the most frequently requested CE topic need among nurses in OB-GYN unit was advanced cardiac life support with 15 subjects or 88.24 percent, nursing research methodology was the second with 14 subjects which was 82.35 percent. The topics of using research findings in nursing education and new theories and developments in fundamental medicine were the last two in rank with the same level of 10 subjects which was 58.82 percent.

The 10 most frequently requested CE topic needs among nurses in EENT unit were presented in table 11.



**Table 11** Rank orders of CE topic needs among nurses in EENT unit identified by "really need".

topic	frequency (n=11)	percentage (%)
1. Application of computer technology in nursing	10	90.91
2. Nursing research methodology	9	81.82
3. Professional issues and trends in nursing	7	63.64
4. Legal issues in nursing	7	63.64
5. Nursing staff training and development	7	63.64
6. The influence of health care system on nursing	7	63.64
7. Individual rights and responsibility	7	63.64
8. Leadership and nursing	7	63.64
9. Trends in nursing educational system	7	63.64
10. Interpersonal relationships	6	54.55

Table 11 showed that the most frequently requested CE topic need among nurses in EENT unit was application of computer technology in nursing with 10 subjects which was 90.91 percent, and the topic of nursing research methodology was second one with 9 subjects or 81.82 percent. The topic of interpersonal relationships was the last one in rank with 6 subjects which was 54.55 percent, and the rest seven topics left in this table were equally distributed with 7 subjects which was 63.64 percent.

The 10 most frequently requested CE topic needs among nurses in emergency unit were presented in table 12.

**Table 12** Rank orders of CE topic needs among nurses in emergency unit identified by "really need"

topic	frequency (n=11)	percentage (%)
1. Understanding the nursing research articles in nursing	9	81.82
2. Nursing research methodology	8	72.73
3. New concepts and theories in nursing	8	72.73
4. Cardiovascular nursing	8	72.73
5. Pain management	7	63.64
6. Using research findings in nursing practice	7	63.64
7. Psychology	7	63.64
8. Nosocomial infection, infection control and universal precautions	7	63.64
9. Nursing staff training and development	7	63.64
10. Advanced cardiac life support	7	63.64

Table 12 showed that the most frequently requested CE topic need among nurses in emergency unit was understanding the nursing research articles with 9 subjects which was 81.82 percent, the topics of nursing research methodology, new concepts and theories in nursing, and cardiovascular nursing were the second with the same level of 8 subjects which was 72.73 percent. Those topics of pain management, using research findings in nursing practice, psychology, nosocomial infection, infection control and universal precautions development, nursing staff training and development, and advanced cardiac life support were the third in rank with the same level of 7 subjects which was 63.64 percent.

The 10 most frequently requested CE topic needs among nurses in nursing service unit were presented in table 13.

Table 13 Rank orders of CE topic needs among nurses in nursing service unit identified by "really need".

topic	frequency (n=4)	percentage (%)
1. Nursing research methodology	4	100.00
2. New concepts and theories in nursing	4	100.00
3. Patient assessment: physical, psychological, sociocultural, and spiritual assessment skills	3	75.00
4. Differential nursing diagnosis	3	75.00
5. Understanding the research articles in nursing	3	75.00
6. Using research findings in nursing education	3	75.00
7. Using research findings in nursing administration	3	75.00
8. Psychology	3	75.00
9. Problem solving and decision making skills	2	50.00
10. Teaching strategies in clinical setting	2	50.00

Table 13 showed that the two most frequently requested CE topic needs among nurses in nursing service unit were nursing research methodology and new concepts and theories in nursing with the same level of 4 subjects which was 100.00 percent. The topics of problem solving and decision making skills and teaching strategies in clinical settings were the last two in rank with the same level of 2 subjects or 50 percent. The rest six topics left were equally distributed with 3 subjects which was 75 percent.

The 10 most frequently requested CE topic needs among nurses in other units were presented in table 14.

**Table 14** Rank orders of CE topic needs among nurses in other units identified by "really need".

topic	frequency (n=41)	percentage (%)
1. Nursing research methodology	28	68.29
2. Advanced cardiac life support	28	68.29
3. Psychology	27	65.85
4. Nursing staff training and development	26	63.41
5. Professional issues and trends in nursing	26	63.41
6. New concepts and theories in nursing	26	63.41
7. formulating a working nursing care plan	26	63.41
8. Job stress management	25	60.98
9. Using research findings in nursing practice	24	58.54
10. Legal issues in nursing	24	58.54

Table 14 showed that the two most frequently requested CE topic needs among nurses in other units were nursing research methodology and advanced cardiac life support with the same level of 28 subjects which was 68.29 percent. The topics of using research findings in nursing practice and legal issues in nursing were the last two in rank with the same level of 24 subjects which was 58.54 percent.

**Perception of continuing education topic needs among nurses with different years of clinical experience in nursing field**

The most frequently requested continuing education topic needs among nurses with different years of clinical experience in nursing field are presented in table 15 to 20. The frequency and percentage were sorted by "really need", and listed in descending order of priority. Only the 10 top-ranked CE topic needs identified by nurses with different years of clinical experience in nursing field were included in these tables. Each CE topic presented in the following tables was counted as 100 percent of its own.



**Table 15** Rank orders of CE topic needs among nurses with less than one year of clinical experience in nursing field identified by "really need".

topic	frequency (n=7)	percentage (%)
1. Using research findings in nursing education	6	85.71
2. Using research findings in nursing practice	6	85.71
3. Team work/team building in health care system	6	85.71
4. Professional issues and trends in nursing	6	85.71
5. Cardiovascular nursing	6	85.71
6. New theories and development in fundamental medicine	6	85.71
7. Understanding the nursing research articles	6	85.71
8. Problem solving and decision making skills	6	85.71
9. Psychology	6	85.71
10. Interpersonal relationship	6	85.71

Table 15 showed that the top 10 CE topics needed among nurses with less than one year of clinical experience in nursing field were using research findings in nursing education, using research findings in nursing practice, team work/team building in health care system, professional issues and trends in nursing, cardiovascular nursing, new theories and development of fundamental medicine, understanding the nursing research articles, problem solving and decision making skills, psychology, and interpersonal relationships. The 10 CE topics were at the same level of 6 subjects which was 85.71 percent.

**Table 16** Rank orders of CE topic needs among nurses with 1-5 years of clinical experience in nursing field identified by "really need".

topic	frequency (n=43)	percentage (%)
1. Advanced cardiac life support	37	86.05
2. Formulating a working nursing care plan	36	83.72
3. Differential nursing diagnosis	32	74.42
4. Psychology	32	74.42
5. Nursing staff training and development	32	74.42
6. Problem solving and decision making skills	31	72.09
7. Professional issues and trends in nursing	31	72.09
8. Cardiovascular nursing	29	67.44
9. Advanced medical nursing	29	67.44
10. Nursing research methodology	29	67.44

Table 16 showed that the most frequently requested CE topic need among nurses with 1-5 years of experience in nursing field was advanced cardiac life support with 37 subjects or 86.05 percent, the topic of formulating a working nursing care plan was the second with 36 subjects which was 83.72 percent. The topics of cardiovascular nursing, advanced medical nursing, and nursing research methodology were the last three in rank with the same level of 29 subjects which was 67.44 percent.

**Table 17** Rank orders of CE topic needs among nurses with 6-10 years of clinical experience in nursing field identified by "really need".

topic	frequency (n=84)	percentage (%)
1. Advanced cardiac life support	62	73.81
2. Formulating a working nursing care plan	55	65.48
3. Nursing research methodology	54	64.29
4. Understanding the nursing research articles	54	64.29
5. professional issues and trends in nursing	54	64.29
6. Using research findings in nursing practice	52	62.65
7. Differential nursing diagnosis	50	59.52
8. Job stress management	49	58.33
9. Legal issues in nursing	48	57.14
10. Individual rights and responsibility	47	55.95

Table 17 showed that the most frequently requested CE topic need among nurses with 6-10 years of clinical experience in nursing field was advanced cardiac life support with 62 subjects which was 73.81 percent, the topic of formulating a working nursing care plan was the second with 55 subjects or 65.48 percent. The topic of individual rights and responsibility, however, was the last one in rank with 47 subjects which was 55.95 percent, and the topic of legal issues in nursing was next to the last one with 48 subjects which was 57.14 percent.

Table 18 Rank orders of CE topic needs among nurses with 11-15 years of clinical experience in nursing field identified by "really need".

topic	frequency (n=48)	percentage (%)
1. Advanced cardiac life support	32	66.67
2. Nursing staff training and development	30	62.50
3. Nursing research methodology	29	60.42
4. Application of computer technology in nursing	29	60.42
5. Problem solving and decision making skills	29	60.42
6. New concepts and theories in nursing	29	60.42
7. Formulating a working nursing care plan	29	60.42
8. Interpersonal relationships	26	54.17
9. Patient assessment: physical, psychological, sociocultural, and spiritual assessment skills	25	52.08
10. Psychology	25	52.08

Table 18 showed that the most frequently requested CE topic need among nurses with 11-15 years of clinical experience in nursing field was advanced cardiac life support with 32 subjects which was 66.67 percent, and the topic of nursing staff training and development was the second with 30 subjects which was 62.50 percent. The topics of patient assessment: physical, psychological, sociocultural, and spiritual assessment skills, and psychology were the last two in rank with the same level of 25 subjects which was 52.08 percent.



**Table 19** Rank orders of CE topic needs among nurses with 16-20 years of clinical experience in nursing field identified by "really need".

topic	frequency (n=13)	percentage (%)
1. Individual rights and responsibility	11	84.62
2. Advanced OB-GYN nursing	10	76.92
3. Nursing research methodology	10	76.92
4. Quality assurance in nursing	10	76.92
5. Advanced cardiac life support	10	76.92
6. New concepts and theories in nursing	10	76.92
7. Legal issues in nursing	10	76.92
8. Formulating a working nursing care plan	9	69.23
9. Teaching strategies in clinical setting	9	69.23
10. Nursing staff training and development	9	69.23

Table 19 showed that the most frequently requested CE topic need among nurses with 16-20 years of clinical experience in nursing field was individual rights and responsibility with 11 subjects which was 84.62 percent, and the topics of formulating a working nursing care plan, teaching strategies in clinical setting, and nursing staff training and development were the last three in rank with the same level of 9 subjects which was 69.23 percent. The rest six topics left in this table were equally distributed with 10 subjects which was 76.92 percent.

**Table 20** Rank orders of CE topic needs among nurses with more than 20 years of clinical experience in nursing field identified by "really need"

topic	frequency (n=46)	percentage (%)
1. Professional issues and trends in nursing	32	69.57
2. Advanced cardiac life support	31	67.39
3. Nursing research methodology	30	65.22
4. Application of computer technology in nursing	29	63.04
5. Individual rights and responsibility	28	60.87
6. New concepts and theories in nursing	27	58.70
7. Nursing staff training and development	27	58.70
8. Legal issues in nursing	27	58.70
9. Job stress management	26	56.52
10. Patient assessment: physical, psychological, sociocultural, and spiritual assessment skills	26	56.52

Table 20 showed that the most frequently requested CE topic need among nurses with more than 20 years of clinical experience in nursing field was professional issues and trends in nursing with 32 subjects which was 69.57 percent, and the topic of advanced cardiac life support was the second with 31 subjects or 67.39 percent. The topics of job stress management and patient assessment: physical, psychological, sociocultural, and spiritual assessment skills were the last two in rank with the same level of 26 subjects or 56.52 percent.

### Part 3 Responses to open-ended questions

There were three open-ended questions on the questionnaire. The response rates to each question were 236 or 97.93 percent to question No.1, 137 or 56.85 percent to question No.2, and 170 or 70.54 percent to question No.3.

Question No.1 asked about the educational forms for CE the nurses preferred. There were 111 subjects which was 47.03 percent select "adult full-time education" as the most preferred educational form for participating CE program, 63 subjects which was 26.69 percent the "short term training", 30 subjects which was 12.71 percent the "adult evening school", 23 subjects which was 9.75 percent the "self-learning", and 9 subjects which was 3.82 percent the "workshop".

Question No.2 asked about the other topics the nurses would like to learn in CE programs besides the 62 topics stated in the Nurse's Continuing Education Needs Inventory. These topics were foreign language with 105 subjects, recent domestic and foreign developments of nursing with 97 subjects, new nursing technology in western countries with 93 subjects, reform in nursing field with 87 subjects, the use of new medical equipment in clinical nursing with 76 subjects, rehabilitation with 72 subjects, aesthetics in nursing with 58 subjects, social status of nurses with 51 subjects, appearance and diathesis of nurses with 45 subjects, self-protection of

nurses with 38 subjects, composition skills with 32 subjects, home economics with 29 subjects, and medical knowledge with 25 subjects.

Question No.3 asked about the problems and suggestions to the CE programs. Problems in CE identified by nurses included the following aspects: attitude of nursing leaders, funding support, learning chance for nurses, educational forms, instructional plans and curriculums, teaching materials and content. The nurses also gave some suggestions according to the problems presented in CE.

### Discussion

This descriptive study was to identify the continuing education needs among nurses in three teaching hospitals of China Medical University. The major findings were: (1) nurses were interested in the content areas of general areas of nursing, nursing administration, nursing research, and new knowledge and skills in nursing; (2) nurses were not interested in the content area of nursing education; and (3) nurses had their specific CE topic needs which were closely related to their clinical practice. The discussion is divided into four parts according to the objectives and findings: (1) CE topic needs among nurses in three teaching hospitals of China Medical University; (2) CE topic needs among nurses working in different clinical units; (3) CE topic needs among

nurses with different years of clinical experience in nursing field; and (4) additional findings.

According to the first objective, CE topic needs among nurses in three teaching hospitals of China Medical University were as follows:

The 17 top CE topic needs perceived by nurses working in three teaching hospitals of China Medical University as "really need" represented four of five major content areas on the instrument: general areas of nursing, nursing administration, nursing research, and new knowledge and skills in nursing. The area of nursing education was rated as no need. This finding was similar to the results of the study conducted by Cannon and Waters in 1993. In Cannon and Waters's study, the most frequently selected area was clinical practice, followed by nursing administration and research. Of 10 top CE topics perceived by nurses as "no need", 4 topics was in the area of nursing education, 3 in nursing administration, 2 in new knowledge and skills in nursing, and one in general areas of nursing.

These findings reflected that:

1. Nurses need more new knowledge necessary to function in the practice in correspond to western nursing practice.

Some topics are new to Chinese nurses even though

parts of them might be familiar to nurses in developed countries. Such topics as advanced cardiac life support, formulating a working nursing care plan, differential nursing diagnosis, new concepts and new theories in nursing and professional issues and trends in nursing.

It can be seen that nurses had already realized that the knowledge they learned from school are insufficient to meet with the development of nursing profession along with the development of science and technology and the changes in health care delivery system. They must constantly learn from recent developments in nursing, otherwise they would not provide good quality of nursing care to their clients.

2. Nurses desired to learn the topics on nursing research.

Three nursing research topics: nursing research methodology, understanding the nursing research articles, and using research findings in nursing practice, were among the 17 top CE needs perceived by nurses working in three teaching hospitals of China Medical University. It occupied 60 percent of all five nursing research topics on the instrument. This findings pointed out that nurses were aware of the significance of nursing research. Since the amount of research articles published in Chinese journals was one key factor for nurses' promotion, nurses had to pay more attention to the topics on nursing research



3. Nurses were not interested in the area of nursing education.

Of the 10 top CE topic needs identified by nurses as "no need", nearly half of them belonged to the content area of nursing education. Furthermore, no nursing education topic appeared in the 17 top CE topic needs. These facts reflected that nurses did not want to learn the topics on nursing education. Nurses' promotion in the teaching hospitals of China Medical University was based on the clinical performance not on their teaching and supervisor ability. Therefore, the nurses pay much attention to the clinical work but a little to the teaching.

The result could be explained within the framework of Knowles (1987). According to Knowles, adults have a need to know why they should learn the content and are self directed. Furthermore, adults become ready to learn when they experience in their life situations a need to know or need to know something. Therefore, the staff nurses in the study had above continuing education need in their working situation as a way of improve themselves professionally.

According to the second objective, CE topic needs among nurses working in different clinical units were as follows:

The 10 top CE topic needs both in nursing service unit and others were covered in all of five major content areas on the instrument: general areas of nursing, nursing administration, nursing research, nursing education, and new knowledge and skills in nursing.

The 10 top CE topic needs both in medical and surgical units cover four of five major content areas on the instrument: general areas of nursing, nursing administration, nursing research, and new knowledge and skills in nursing.

The 10 top CE topic needs in EENT unit represented four of five major content areas on the instrument: general areas of nursing, nursing administration, nursing research, and nursing education.

The 10 top CE topic needs in pediatric, OB-GYN and emergency units represented three of five major content areas on the instrument. General areas of nursing, nursing administration and new knowledge and skills in nursing in pediatric unit, general areas of nursing, nursing research and new knowledge and skills in nursing in OB-GYN unit, and nursing administration, nursing research and new knowledge and skills in nursing in emergency unit.

Of 10 top topic CE needs in different units, the

topics perceived by nurses in most units ( $\geq 5$ ) were: nursing research methodology distributed in seven units, medical, surgical, OB-GYN, EENT, emergency, nursing service, and other units; advanced cardiac life support distributed in six units, medical, surgical, pediatric, OB-GYN, emergency, and other units; professional issues and trends in nursing distributed in 6 units, medical, surgical, pediatric, OB-GYN, EENT, and other units; formulating a working nursing care plan distributed in five units, medical, surgical, pediatric, OB-GYN, and other units; nursing staff training and development distributed in five units, medical, surgical, EENT, emergency, and other units; psychology distributed in five units, medical, pediatric, emergency, nursing service, and other units. These topics, except psychology, were consistent with the top 5 topics in the 17 most frequently requested CE topic needs among nurses working in three teaching hospitals of China Medical University. The findings showed that the nurses in each unit needed the topic on nursing research methodology. Because nurses' promotion mainly based on the amount of their research articles published in journals. Since the nurses in each unit had the chance to take care of the patients with serious condition, they needed the topic on advanced cardiac life support. The nurses in nursing service unit, however, did not want to learn the topic on advanced cardiac life support because they did not need to care for the patient directly.

Each of units also had their specific CE topic needs. For example, advanced medical nursing for medical unit, advanced surgical nursing for surgical unit, advanced pediatric nursing for pediatric unit, and advanced OB-GYN nursing for OB-GYN unit. It indicated that nurses had been interested in the recent development of their specialty. On the other hand, the nursing service unit needed more knowledge about patient assessment: physical, psychological, sociocultural, and spiritual assessment skills, using research findings in nursing education, using research findings in nursing administration, and teaching strategies in clinical setting, and the topics of cardiovascular nursing and pain management were the interesting topics to the emergency unit. It also showed that nurses in emergency and nursing service units paid more attention to the topics which are closely related to their practice.

According to the third objective, CE topic needs among nurses with different years of clinical experience in nursing field were as follows:

The most frequently requested CE topic needs among nurses with different years of clinical experience in nursing field were presented in table 15 to 20.

The 10 top CE topic needs among nurses with 15-20 years of clinical experience represented all of five major

content areas on the instrument: general areas of nursing, nursing administration, nursing research, nursing education, and new knowledge and skills in nursing.

The 10 top CE topic needs among nurses with other five groups of years of clinical experience represented the same four of five major content areas on the instrument: general areas of nursing, nursing administration, nursing research, and new knowledge and skills in nursing. It was consistent with the areas in the 17 top CE topic needs among nurses working in three teaching hospitals of China Medical University.

Of 10 top CE topic needs among nurses with different years of clinical experience, those topics which appeared in most groups ( $\geq 4$ ) were: advanced cardiac life support distributed in five groups, 1-5 years, 6-10 years, 11-15 years, 16-20 years, and more than 20 years; nursing research methodology distributed in five groups, 1-5 years, 6-10 years, 11-15 years, 16-20 years, and more than 20 years; professional issues and trends in nursing distributed in four groups, less than one year, 1-5 years, 6-10 years, and more than 20 years; formulating a working nursing care plan distributed in four groups, 1-5 years, 6-10 years, 11-15 years, and 16-20 years; nursing staff training and development distributed in four groups, 1-5 years, 11-15 years, 16-20 years, and more than 20 years. These five topics were also consistent with the top

five CE topic needs in the 17 most frequently requested CE topic needs among nurses working in three teaching hospitals of China Medical University.

There were some trends founded from table 15 to 20:

1. All the 10 top topics in the groups of 6-10 years, 11-15 years, and more than 20 years were included in the 17 most frequently requested topics perceived by nurses working in three teaching hospitals of China Medical University. The fact that the number of nurses in these three groups occupied the top three could explain this finding. Since the total number of nurses in these three groups were 178 which was 73.86 percent, they could represent the average level of all 241 subjects.

2. The topic on advanced cardiac life support was selected as one of the 10 top CE topic needs in five groups with the exception of the nurses with less than one year of clinical experience. Furthermore, the nurses in three groups, 1-5 years, 6-10 years, and 11-15 years selected this topic as the first one of 10 top ranked CE topic needs, the nurses more than 20 years selected this topic as the second one of 10 top ranked CE topic needs, and the nurses with 16-20 years selected this topic as the fifth one. This finding reflected that the topic on advanced cardiac life support was the most important topic identified by nurses in most groups of clinical experience. It also showed that the nurses with 1-5,

6-10, 11-15, 16-20, and more than 20 years of experience were aware of the significance of advanced cardiac life support to their daily nursing practice. The nurses with less than one year, however, paid little attention to this topic because they had few experience on the importance of the issue.

3. The topic on nursing research methodology was selected as one of the 10 top CE topic needs by nurses in five groups with the exception of the nurses with the group of less than one year. The nurses with less than one year, however, selected the topics of understanding the research articles in nursing, using research findings in nursing practice, and using research findings in nursing education as three of the 10 top CE topic needs. It reflected that the nurses with less than one year were more interested in nursing research, even though the nurses in all six groups paid attention to this content area. The focus on nursing research, however, was different: the nurses with less than one year focused their attention on the application of research findings, and the nurses in other five groups on the methodology of nursing research. In other words, the nurses in other five groups expected to know how to do nursing research.

4. The nurses with 1-5, 6-10, 11-15, 16-20 years of experience were interested in the topic on formulating a working nursing care plan, the nurses with less than one year and more than 20 years of experience, however, were not.

Since in three teaching hospitals of China Medical University, the nurses with less than one year were on probation and were not allowed to write the nursing care plan, and most nurses with more than 20 years usually were sent to out-patient units or worked as general affairs nurses in the wards, it was not necessary for them to write the nursing care plan. Therefore, the nurses with less than one year and more than 20 years were not interested in the topic on formulating a working nursing care plan.

5. Only the nurses with less than one year selected the topic on team work/team building in health care system and new theories and development of fundamental medicine as the two of 10 top CE topic needs. It showed that young nurses attach importance to cooperate with each other because new nurses have to adjust more to work with others. The finding also indicated that new nurses paid much attention to new theories and development of fundamental medicine.

**Additional findings:**

In answering the questionnaire, the nurses identified some problems and also gave some useful suggestions about CE programs. The hospital administrators and nurse educators should pay attention to these problems and try to consider and accept these suggestions when designing any CE programs for nurses. It will make the CE programs more appropriately. The



problems and suggestions about CE proposed by nurses were summarized and listed as follows:

1. Problems

- 1.1 No powerful support by the hospital leaders
- 1.2 No enough funds for supporting nursing CE
- 1.3 No enough time for CE because of their busy clinical work and housework
- 1.4 No enough educational forms in CE for nurses (the opportunities for nurses taking in CE program were very limited)
- 1.5 No appropriate instructional plans and clear objectives for nursing CE
- 1.6 No appropriate curriculum for nursing CE (borrowed medical mode rather than according to the needs of nurses). Many out of date knowledge appeared in the curriculum, otherwise, the recent development of nursing both in China and in overseas did not include in the curriculum.
- 1.7 Theory were separated from practice (the knowledge they learned from CE could not direct nursing practice effectively and efficiently).
- 1.8 No adequate teaching materials for CE programs
- 1.9 Nurses could not obtain the information about

nursing CE programs timely.

- 1.10 The expenses on attending CE program for nurses were very high. Therefore, nurses sometimes had to give up because of expensive tuition, even though many nurses expected to participate in CE.

These problems identified by nurses were consistent with the results of the studies conducted by Kristjanson and Scanlan (1989), Pittman and associates (1988), Bye (1983), and Hong Shun and her associates (1994). Findings from Kristjanson and Scanlan's study revealed that 1) variables significantly affecting participation in CE programs included interest and commitment of institutional decision makers and the interests of the nurses themselves; 2) the relevance of the topic to nurses' roles and geographic accessibility of CE offerings were important to learners' participation; 3) the reasons for nonparticipation are cost, lack of time, inconvenient scheduling, lack of information about educational opportunities, job responsibilities, home responsibilities, lack of interest and lack of confidence. Distance of programs, cost of programs, and schedules were listed as the top three factors limiting participation in CE programs in Pittman and associates' study (1988). Findings from Bye's study (1988) indicated that factors assisted the nurses' participation in CE were readily available programs,

supervisory encouragement, peer's opinions and attitudes, related work time with pay, tuition reimbursement, and travel expenses reimbursement. In Hong Shun and her associates' study (1994), financial difficulty, time limitation, manager's indifference, and overload housework were four main obstacles for nurses in receiving continuing education. The findings of this study were supported by the results from previous studies of this kind.

**2. Suggestions:**

- 2.1 The hospital leaders should pay more attention to the work of nursing continuing education.
- 2.2 The hospital should provide enough funds to the nursing continuing education annually.
- 2.3 The Staff Development Department of the hospital should plan various forms of CE programs for nurses with different level based on the condition of hospital and the needs of nurses.
- 2.4 The faculty of nursing in China Medical University should recruit in-service nurses for studying in order that they can receive the baccalaureate degree in nursing.
- 2.5 The continuing education for nurses should be legalized and standardized.
- 2.6 Increase the number of nurses to reduce

workload, so that the nurses could have enough time and energy to attend CE.

- 2.7 The Staff Development Department should provide some award to encourage and reward nurses to take part in CE.
- 2.8 Increase national and international academic exchanges. The Staff Development Department should select some nurses according to the duration of clinical experience in nursing, performance and special field of study to go abroad or go to other advanced hospitals in China in order to learn some advanced knowledge and experience from them or invite scholars to give lectures.
- 2.9 Utilizing the time of vocational study effectively and efficiently. Arrange some workshops about new knowledge and skills in nursing during the time of vocational study, making nurses to understand the recent developments in nursing; arrange competition of knowledge and skills in nursing to encourage nurses constantly learn new things.
- 2.10 Permitting and even encouraging nurses to participate in doctors' activities of making the rounds of the wards.

These suggestions were supported by Kristjanson and Scalan's study (1989) and Junlan Liu and Ling Wang's study (1994). Findings from Kristjanson and Scalan's study suggested that providers of CE programs should perform a careful needs assessment in order to be responsive to learners' needs. Three suggestions were put forward in Junlan Liu and Ling Wang's study: 1) the continuing education for nurses should be legalized and standardized; 2) appropriate textbooks and reading materials should be selected for conducting CE programs; and 3) it was suggested that the credit of nurses in CE program should be considered as a indicator of promotion, salary raises, and other benefits.