

Resident Perceptions of Competency-Based Korean Medicine Education: A Qualitative, Content Analysis Study Conducted using Focus Group Interviews

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Objectives: The new educational system emphasizes acquisition of clinical competency by the time of graduation from Korean medicine colleges that allow Korean medicine doctors to immediately perform clinical tasks. This study investigated awareness of competency-based education in Korean medicine hospital residents who must simultaneously undergo training and assist medical students in clinical practice.

Methods: This was a qualitative research that was conducted using focus group interviews (FGIs) to investigate the awareness of demands for improvement in competency-based Korean medicine education in Korean medicine hospital. To apply the principles and procedures of FGIs, a semi-structured questionnaire was developed. Data analysis was conducted using the five steps of framework analysis.

Results: According to contents analysis, first competency-based education that reflects actual clinical practice tasks is needed. Second, sufficient basic skill mastery education must be reinforced. Third, an intermediate curriculum that mediates clinical practice and basic education is needed. Fourth, the Objective Structured Clinical Examination and Clinical Performance Examination must be expanded to prepare for the Korean medicine doctor practical test.

Conclusions: Korean medicine residents reported the gap between clinical practice and use of knowledge and skills acquired in the curriculum while acting as direct observers and educations of clinical clerkship in hospitals. Based on this exploratory study it is necessary to conduct research on the educational competency of Korean medicine residents who play an important role as educational leaders in Korean medicine clinical practice training.

Key Words : Korean Medicine Education, Competency-Based Education, Clinical Competence, Students Perception, Surveys and Questionnaires, Focus Groups

Introduction

Healthcare educational institutions, including the World Health Organization, have been deliberating over various education systems to select and achieve competencies with practical meanings. Competency-based education is different from the existing system- or subject-oriented

education system¹⁾. Competency-based education first determines the performance syllabus and level of successful graduates, and then selects the necessary factors to achieve competency and incorporates them into learning experiences. This system also provides criteria for selection, evaluation, education, and training. The conventional system- or subject-oriented curriculum focuses on

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acquiring knowledge information that is considered important in the relevant academic field. In contrast, competency-based education does not only enable acquisition of knowledge, but also focuses on application of the acquired knowledge during different tasks²⁾.

Following the development of the Korean medical doctor competency model in 2016, the evaluation and certification system of the Korean medicine colleges is based on the pursuit of competency-driven medicine education; this propels the Korean medicine education and evaluation system, distinct from clinical practice, to continuously improve occupational competency. The new system emphasizes acquisition of clinical competency by the time of graduation from the Korean medicine colleges, allowing doctors to immediately perform clinical tasks. Accordingly, there have been demands for changes in the state examination to reflect the improvements in the practical education of Korean medicine colleges, including linkage of basic-clinical education, vertical-horizontal integration of curriculum, and early exposure to clinical training. Clinical practice is the most essential part of basic medical education; it fosters medical professionals that are competent in clinics. The students acquire basic clinical and communication skills necessary for patient care through lectures and become competent in efficiently performing the necessary tasks in future organizations³⁾.

Herein, we collected opinions on education acquired in Korean medicine colleges, from seven first- to third-year Korean medicine residents, who have directly experienced the gap between

education and clinical practice as students, educators, and new Korean medicine doctors. Korean medicine residents are trainees that undergo training and education at relevant institutions and also act as educators that manage, supervise, guide, and educate Korean medical students who are soon to be graduates of Korean medicine colleges. Residents play an important role as teachers of junior colleagues and medical students⁴⁾. Clinical teaching also helps residents in clinical learning⁵⁾. Residents must simultaneously undergo training and assist medical students in clinical practice, thereby demonstrating clinical skills and the ability to train medical students directly. They are facilitators and coaches who become “master” clinicians through their residency programs, provide feedback to trainees, and help students graduate with the necessary skills to become competent, safe, and independent practitioners⁶⁾. This is similar to near-peer teaching or near peer-assisted learning methods, in which seniors help teach juniors. Such methods are widely used in medicine, pharmacy, and nursing⁷⁾. As residents can have considerable impact on undergraduate students who will be future medical practitioners and their selection of future specialties through clinical practice⁴⁾, it is meaningful to understand the awareness of education in residents. Educational improvement plans to strengthen the curriculum or clinical practice and national examinations have been previously discussed in Korean medicine practice. However, there is a lack of in-depth opinion studies of doctors who are in charge of clinical training in hospitals. Thus, this study aimed to investigate awareness of competency-based

education in Korean medicine hospital residents through focus group interviews (FGIs), which can collect abundant data in a short time.

Methods

1. Ethical considerations

This study was approved by the Institutional Review Board of Wonkwang University (approval number: WKIRB-202210-SB-094). It is followed all methods were carried out in accordance with relevant guidelines. To minimize the ethical risks, the study's purpose and method were explained and regulations and informed consent was obtained from all participants. Only those who fully understood the purpose and methods and voluntarily agreed to participate were included. The participants were also made aware that they could withdraw their participation at any time and that there would be no penalties for refusing to participate. The participants were informed that the collected data and recordings would only be used for research purposes and that personal information would be anonymized for security. The study data were converted into password-protected files that were stored in the researcher's computer.

2. Study design

This was a qualitative content analysis study that conducted FGIs to investigate the awareness of demands for improvement in competency-based Korean medicine education in Korean medicine hospital residents.

3. Study participants

The study participants were Korean medicine hospital residents who satisfied the following criteria: Korean medicine doctors who completed the Korean medicine state examination in the last 5 years; those who had experience in supervising education practice of Korean medical students; those who voluntarily participated in the study after being explained the purpose and data collection method of the study, and agreed to the recording of the entire FGI process. Interviewees were selected by ensuring even distribution of the eight specialties of Korean medicine doctors and then interviewed.

4. Study tools

To apply the principles and procedures of FGIs, a semi-structured questionnaire was developed through a literature review. As there was a lack of previous data that collected opinions of Korean medicine residents, research reports in Korean medicine education that were published in earnest since 2015, including various gray literature and technical reports, were reviewed. Final interview items were selected after review by one professor at a Korean medicine college, two clinical professors, and two Korean medicine hospital residents.

FGIs were conducted according to the following four types of questions: beginning, transition, key, and ending questions, as suggested by Krueger & Casey⁸⁻⁹. The key questions are shown in Table 1. In the introduction stage, the participants were provided approximately 5 minutes to write down notes to help share their experiences and to answer questions based on their experiences.

5. Data collection

In total, three research personnel (a moderator, assistant moderator, and note-taker) participated in the FGIs. As described in the guidelines by Krueger⁹⁾, FGIs were conducted by a Korean medicine professor, with extensive experience as a moderator of Korean medicine FGIs and who had adequate knowledge of the topic and was competent at exercising mild unobstructive control and appearing like the participants. To efficiently interview the interviewees belonging to various specialties, an assistant moderator helped with handling logistics, taking careful notes, and monitoring the recording equipment. A note taker also participated in FGIs for rapid analysis. As discussions of Korean medicine included various technical terms that were difficult for the general public to understand, interviewees only consisted of Korean medicine doctors.

6. Data analysis

Quality data analysis was conducted using the five steps of framework analysis suggested by Ritchie and Spencer¹⁰⁻¹¹⁾, but detailed performance was changed according to the situation of this study (Table 2).

7. Reliability of the research

The data were analyzed by finding and categorizing meaningful parts through open coding, which was suggested by Strauss & Corbin¹²⁾ after the transcript was prepared. Open coding is a qualitative method of detailed data review that separates data into individual elements, compares similarities and differences, and names and categorizes phenomena reflected in the data. This method enables new discoveries through the process of understanding, interpreting, and summarizing the phenomenon. Interview notes, debriefing notes, and transcripts were organized and analyzed for summary. The data were collected and analyzed simultaneously to

Table 1. Four Types of Questions used in Focus Group Interviews (FGIs)

Structure of the Questions	Description	
Beginning	What were the most characteristic, satisfying, or disappointing classes among the lectures, technical education, and clinical practice that you attended?	
	Medical Knowledge	Lecture-theoretical education experience in Korean medicine colleges
	Skill Training in Laboratories or Pre-clerkship	Experience with practice-skill education in Korean medicine colleges
Transition	Clinical Clerkship	Clinical clerkship education experience in Korean medicine colleges
	Evaluation of Korean medicine education from the perspectives of a learner and educator	
Key	Were there useful examples of applying what you learned at Korean medicine college as an instructor?	
	As an instructor, what and how did you teach students during clinical practice?	
	Based on your educational experience, what kind of skills test can be included in the Korean medicine state examination?	
Ending	What were you most competent at and what did you lack the most when you graduated?	
	Following the transition into competency-based education, what content should be further strengthened in Korean medicine colleges?	

use the results for collection of data in the next group. This allowed abundant collection and systematic and cyclical analysis of the data¹³⁾.

For data analysis, a researcher with >10 years of experience in qualitative research and a researcher who planned the FGIs individually extracted and categorized the codes. Then, the analysis results were compared and discussed to extract the final themes.

Results

1. General participant characteristics

In total, seven interviewees participated in the interview. The interviewees were a homogeneous group with a similar social background, age, and experience, according to Krueger's theory. FGIs were conducted with seven doctors of Korean medicine (work departments: Acupuncture & Moxibustion Medicine, Neuropsychiatry of Korean Medicine, Korean Medicine Ophthalmology, Otolaryngology & Dermatology, Korean Oriental Internal Medicine, Pediatrics of Korean Medicine, Rehabilitation Korean Medicine, and Sasang

Constitutional Medicine), who had experience taking the National Licensing Examination of doctor of Korean medicine within the last 5 years and were currently participating in clinical practice education at the college of Korean medicine. Through the FGIs, the issues were identified and arranged, and problems raised in the actual educational field were derived.

A focus group is, according to Lederman, “a technique involving the use of in-depth group interviews in which participants are selected because they are a purposive, although not necessarily representative, sampling of a specific population, this group being ‘focused’ on a given topic.” Participants in this type of research are, therefore, selected on the criteria that they would have something to say on the topic, are within the age range, have similar socio-characteristics, and would be comfortable talking to the interviewer and each other¹⁴⁾. It is for this reason that they recommend investing time and effort in selecting members of the group. Krueger believes that rich data can only be generated if individuals in the group are prepared to engage fully in the

Table 2. Quality Data Analysis

Step	Performance
Participating in Interview	The researcher monitored the interview at a distance from the moderator, facilitator, and note taker.
Familiarization	The transcript as well as the observation and summary notes prepared by the note taker were read repeatedly. To understand the overall picture of the interview, the main themes were extracted in this process.
Identifying a Thematic Framework	As the transcript and texts were read, short notes were taken. This conceptualization process was the beginning of topic categorization. In this process, descriptive statements were formed, and analysis was started according to the research question.
Indexing	Quotes on a topic were moved, organized, highlighted, and compared to move data.
Charting	Quotes were removed from the original context and reclassified and organized according to the new themes.
Mapping and Interpretation	Each question was categorized by theme for logical arrangement of the quotes and overall transcript.

discussion and, for this reason, advocates the use of a homogeneous group. Based on the topic under investigation, Krueger⁸⁾ suggested that participants should share similar characteristics: sex group, age range, and ethnic and social class backgrounds. Table 3 shows the characteristics of the interviewees who participated in the FGIs of this study.

2. Awareness of competency-based Korean medicine education among Korean medicine residents

The following four categories representing the awareness of competency-based Korean medicine education in Korean medicine residents, were derived: proposal of the necessity of competency-based real-world education that reflects realistic clinical work, reinforcement of sufficient basic skill proficiency training in basic practice course, need for intermediate training courses that

mediate clinical practice and basics, and preparing for the introduction of Korean doctor practical examination by strengthening the Korean classification of diseases (KCD) education suitable for current responsibilities as well as expanding the Objective Structured Clinical Examination (OSCE) and Clinical Performance Examination (CPX).

3. Lack of realistic and competency-based education that reflects actual clinical work

The interviewees commonly expressed that the students who first started clinical training at hospitals experienced difficulties in making charts, writing medical notes, and completing bills. There were many opinions that the students experienced difficulties in writing the name of the disease for insurance claims. Although this was a basic task that new students needed to be

Table 3. Characteristics of the Participants

Characteristic	Category	Number of participants
Age (years)	20-29	7
	30-39	0
	>39	0
Sex	Male	3
	Female	4
Work Experience (years)	<5	7
	5-10	0
	>10	0
Work Department	Acupuncture & Moxibustion Medicine	1
	Korean Korean Internal Medicine	1
	Korean Medicine Ophthalmology, Otolaryngology & Dermatology	1
	Rehabilitation Korean Medicine	1
	Pediatrics of Korean Medicine	1
	Neuropsychiatry of Korean Medicine	1
	Sasang Constitutional Medicine	1

competent at, new Korean medicine doctors had difficulties in finding basic diagnostic and disease names, suggesting that relevant education and training is essential.

“With regards to management of medical documents, I never had experiences of writing medical certificates and notes as well as test requests. I thought prior relevant education or training would be beneficial.” (B)

“I thought it would be better if we were trained on diagnosis and tests and how to write medical certificates and notes. I think this can be easily done with [the] CPX or through lectures on writing medical certificates and notes.” (G)

“I felt it would be helpful to have step-by-step education on the process from clinical task-based processes to patient history assessment and treatment.” (A)

“There seems to be a lack of methodological education on how to write medical certificates or notes. We do not lack knowledge of Korean medicine. We just do not know what and how to write them. If we know how much information to write, we can easily train and write the certificates and notes.” (C)

“I had never been educated about writing documents anywhere, so I asked my seniors or friends who had worked at hospitals before me. That was a struggling experience for me.” (D)

“We can figure out how to identify and diagnose diseases or injuries after a few times, but students do not learn that in school. So, it would be difficult for students to complete those tasks right after passing the state examination. It would be helpful for students to learn how to file auto insurance claims, health insurance claims,

and Chuna therapy insurance claims by the time of graduation. We often encounter these patients in clinical practice.” (C)

“It is more important to be competent in diagnosis and evaluation. For example, facial paralysis or dizziness may have cases where the central and peripheral nerves overlap. If a patient has ankle problems, you have to be able to diagnose fracture...Since there are many primary medical institutions, we have to distinguish between patients that we can and cannot assess and treat. I hope that there would be opportunities for us to become familiar with these skills.” (F)

“I sometimes instruct the students to practice skills that may be used in real life such as CPR and the Heimlich maneuver using a child model. But I thought it would be nice to try not only CPR but also Korean medicine skills. For example, a new Korean doctor in local clinics gets nervous when a 2- or 3-year-old kid visits. I think the reason for being nervous is due to the lack of experience. So, I think it is important to have experience, even if the experience is not necessarily with a real child. Using a model to practice taking a pulse, examining the abdomen, and holding a child would be helpful.” (E)

In Korean medicine, knowledge of dialectic is gained through studies, and theory classes help prepare the students. However, it is important for Korean medicine doctors to be able to use diagnosis and treatment skills in clinical practice. The students memorize and organize Korean medicine dialectics; however, they lack the skills to observe the complaints and symptoms of patients in clinical practice.

“For example, the definition, test characteristics,

treatment, and Korean medicine differentiation of symptoms are well organized for Crohn's disease. But it is a different matter to utilize the knowledge for patients in clinical practice. The state examination mostly asks theory questions... But what I personally felt from seeing patients for the first time was that it was difficult to acquire information from the patients.” (E)

“The basic concepts, theories, basic diagnosis, and treatment for various diseases are well organized and easy to understand. But what is lacking is the translation of this knowledge into examination, evaluation, test, and diagnosis of patients in clinical practice.” (A)

“It would help us care better for the patients if relevant education is provided according to KCD.” (B)

“If we have to put more weight on education, I think KCD would be the best.” (D)

“When we enter codes after diagnosis, we use KCD codes more often than U codes. I think the education system must be consistent with this.” (F)

“State examinations should also focus a little more on KCD...” (C)

4. Sufficient mastery of basic skills required during Korean medicine college curriculum

Many interviewees expressed the opinion that sufficient mastery of basic skills is necessary in the curriculum of Korean medicine colleges before clinical training in hospitals. They emphasized the need for absolute time to master simple acupuncture, cupping, and moxibustion procedures. The interviewees commonly used the

term “mastery.”

“When I first performed acupuncture on a patient, I was lost. I practiced during acupuncture classes at school. But when I was about to do it on an actual patient, I was nervous and confused. That’s when I thought it would be nice to have an environment where I can practice more Korean medicine techniques.” (B)

“I think it would be helpful to practice basic techniques such as acupuncture for each acupoint, simple acupuncture, moxibustion, and cupping. I once asked students to perform facial acupuncture. Some students had experiences before, but some students’ hands were shaking and they did not do so well. So, it would be helpful if students are given more opportunities to practice basic skills, acupuncture, and other techniques.” (G)

“Some friends of mine who had previously gone to participate in medical volunteer activities and treated patients under the guidance of Korean medicine doctors were skilled with acupuncture. I think there is a need to increase the absolute amount of time to practice such skills.” (F)

“For other theory lectures, I can listen to online lectures in advance like in a flipped classroom setting. During practice classes, we can focus on skills for mastery and have more time to think about basic skills and techniques.” (A)

“But there is a lack of absolute time for mastering these techniques. We do not have enough experience with acupuncture, so we become nervous during clinical training. We also do not have enough time to practice detailed techniques such as acupuncture specific acupoints.” (B)

“Some students did not know how to stimulate

muscles, so it would be important to increase the absolute time for basic skills such as stimulating muscles in detail and finding acupuncture points.” (D)

“We lacked experience with [a] dissection cadaver. For a class of 80 students, there were only two cadavers. We lacked practice on the very basic human anatomy. We need more opportunities to learn and master basic skills.” (C)

5. Intermediate curriculum needed to mediate clinical skills and basic skills

In FGIs, the interviewees emphasized expanding intermediate education that links lecture-style classes for learning theory and basic skills with clinical clerkship. In particular, there were many opinions that there should be opportunities to learn in advance the various cases that may occur in clinical practice such as case studies.

“I think we need classes to mediate theory and practice. If there is a skill center, the skill center would provide CPX practical training or skill training, and we can observe how the skills are applied in hospitals.” (F)

“It would be beneficial to do a lot of [the] CPX to help us utilize the knowledge in our heads as much as possible. In particular, we cannot use medical devices, and we have to rely on asking many questions. I wished we would have more opportunities for these things.” (A)

“I think it would be helpful to have the chances to talk to professors and learn about cases on how we can diagnose diseases through the pattern of Yin Deficiency-Fire uprising among many mixed problems and how to use Korean medicine

as prescription.” (D)

6. Preparation for Korean medicine practical test through expansion of the OSCE and CPX

Most interviewees expressed that there was a need to provide objective and structured training and clinical practice-oriented technical education. The interviewees stated that such expansion and systematization was necessary to introduce practical tests in the Korean medicine state examination.

“I think we have to invest more time in techniques, [the] OSCE or CPX during clinical clerkship”. (D)

“I often felt that my time spent at hospital was similar to theory classes. This made me think that it is necessary to devise items that would be helpful for treatment and participation during clinical clerkship.” (F)

“I also thought that hospital clinical clerkship should focus more on [the] OSCE and CPX for clinical skills. Trainees spend a lot of time listening to explanations of theoretical contents.” (C)

“It is difficult to practice with patients who do not visit the internal medicine department in our hospital. Each hospital has different patients, so there are limited diseases that the students can experience and practice on. So, I think it would be nice to create items for clinical clerkship skills that must be taught in each department.” (E)

“For example, ‘the otolaryngology department does BPPV or [the] Epley technique’ or ‘the internal medicine department must do the 12 cranial nerve tests.’ If Korean medical schools set

common techniques and items that must be evaluated compulsorily, this will help to systematically organize clinical clerkship in hospitals.” (F)

“I think it is challenging to set such standards for treatment as there would be too many items. But maybe we can try to organize standards for simple tests or dialectics. When a patient presents to the hospital, the patient will have various diseases. But I think it might be possible to make formats like in pathology textbooks and screen for patients with specific diseases and corresponding dialectical characteristics for diagnosis and examination.” (A)

“In terms of skills, I think there would be common skills or techniques that each hospital performs. But I am not sure as I do not share this information with other hospitals. [The] Epley technique would be commonly performed, but I think we would need to look further into such details. I think techniques like [the] CPX could be practiced.” (B)

“It would be possible to practice [the] CPX for cases of virtual patients.” (E)

“There are not many techniques that can be done with the OSCE. If we are to set standards for treatment methods such as acupuncture, moxibustion, cupping, Korean medicine, and Chuna therapy, we can make models for only so many treatment techniques of OSCE.” (F)

“Doctors have to complete practical tests for state examinations. I do not know exactly how the practical tests are done. I know that [the] CPX is part of it. I thought that I will be learning more things that will appear in the examination as I study. I thought those that are asked on the test

would be the case groups that we often encounter in clinical practice. I thought if we could get an overview of the flow of treatment for patients that we see a lot in clinical practice.” (C)

“If the CPX model is well designed, there would not be difficulties in evaluation. There may be differences in treating virtual patients compared with treating real patients. I think it would be more clinically helpful to practice with virtual patients that provide as much information as real patients than evaluating and studying through books.” (E)

Discussion

This study conducted FGIs to understand the awareness of competency-based Korean medicine education in Korean medicine residents. The residents were trainees and educators, who provided key ideas regarding the link between education in Korean medicine colleges and clinical training in Korean hospitals. During the 4 years of training in hospitals, the residents gain extensive clinical experience in their specialties through patient care, intense academic activities, and collaboration with Western medicine, unlike in general Korean medicine clinics while participating in educating medical students. The American Resident Association has played a role in defining and supporting the role of residents as educators, and the Korean Intern Resident Association has also emphasized its role in education and modeled its competency. The Korean Medicine College Evaluation and Accreditation Handbook also support the role of residents as educators, and a large number of

residents are given the responsibilities of guiding fourth-year Korean medical students through their clinical practice.

Herein, based on the importance of Korean medicine residents' role in clinical clerkship training, a total of seven residents with different specialties and experiences of training were evaluated to assess their awareness, which was categorized into four themes. The results were as follows. First, there is a need for competency-based realistic education that reflects actual clinical practice tasks. Second, sufficient basic skill mastery education must be reinforced. Third, an intermediate curriculum that mediates clinical practice and basic education is needed. Fourth, the OSCE and CPX must be expanded to prepare for the Korean medicine doctor practical test.

Currently, Korean medicine colleges are transitioning into clinical competency-based education that emphasizes practical training, and quantitative expansion is occurring through an evaluation and certification system. However, adequate quality management is fundamental, and further research on systematic clinical practice training that is directly related to tasks must be expanded. Such standardized and systemized practical education should help to link the introduction of the practical test in the national examination for Korean medicine doctors.

Additionally, research on the competency of residents as educators must be continued. Korean medicine residents reported the gap between clinical practice and use of knowledge and skills acquired in Korean medicine college curriculum while acting as direct observers and educators of clinical clerkship in hospitals. In particular, FGIs

revealed the difficulties experienced by the residents. The residents expressed concerns with the quality of clinical clerkship, as the residents are mainly responsible for managing clinical clerkship.

A couple of limitations must be considered in the interpretation of this study's findings. First, this study included only seven Korean medicine residents, and thus our findings cannot be generalized. Future studies must diversify the participants and collect opinions from various perspectives. Second, based on this study's results, it is necessary to conduct research on the educational competency of Korean medicine residents who play an important role as educational leaders in Korean medicine clinical practice training. In North America, the competency of residents is analyzed by year to item entrustable professional activity items and strengthen education, research, and clinical competencies. The same strategies can be applied to conduct in-depth research on the competency of residents as educators and seek plans to improve the quality of Korean medicine clinical practice training through education on professionalism improvement and review of their roles.

Conclusions

In conclusion, first, competency-based education that reflects actual clinical practice tasks is needed. Second, sufficient basic skill mastery education must be reinforced. Third, an intermediate curriculum that mediates clinical practice and basic education is needed. Fourth,

the OSCE and CPX must be expanded to prepare for the Korean medicine doctor practical test. Korean medicine residents reported the gap between clinical practice and use of knowledge and skills acquired in the curriculum while acting as direct observers and educations of clinical clerkship in hospitals.

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