

## Differences in Perception of Continuing Education by Academic Background with Physical Therapists

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### Abstract

**Purpose** : Various research studies are needed to raise the perception of the CE of Korean physical therapists. However, there are little studies have been conducted, and relatively few studies are available to read on online. The purpose of the study is to find out the differences in the perception of CE according to the physical therapist's academic background. In this way, this article intends to strengthen the perception of the CE of health-care workers, such as physical therapists and occupational therapists in the Republic of Korea so that contributing to the development of national health.

**Methods** : Present study showed that 431 out of 563 people who participated in the two meetings of CE conducted by the Gwangju Metropolitan City of the Korea Physical Therapy Association responded in the survey in 2015. Among them, only 238 people were surveyed on the awareness of CE in 2014, excluding 181 questionnaires due to poor responses and 112 questionnaires that did not participate in CE in the previous year. Descriptive analyses were conducted to identify the perception among those who experienced CE, and simple linear regression analysis was performed using dummy variables to identify awareness of the education based on their academic background.

**Results** : Question 3 ( $p=.000$ ,  $R^2=.067$ ) was significant in the significance test of the regression equation for perception of the CE ( $p<.05$ ). Question 1 ( $p=.687$ ), 2 ( $p=.066$ ), 4 ( $p=.430$ ), 5 ( $p=.085$ ), and 6 ( $p=.054$ ), 7 ( $p=.111$ ), 8 ( $p=.088$ ), 9 ( $p=.213$ ), 10 ( $p=.191$ ) and 11 ( $p=.169$ ), the regression formula was not significant ( $p>.05$ ).

**Conclusion** : Physical therapists had a moderate perception of the need for a CE and had the idea that improvements were required in what was provided in that education. In addition, there was no statistically significant difference, although there was a greater awareness of CE in the Master of Science Course or higher than college or university graduates.

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**Key Words:** academic background, awareness, continuing education, perception, physical therapist

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## I. Introduction

For health care providers, continuing education (CE) refers to training that maintains and improves their job skills in the workplace. According to the law of the Republic of Korea for medical technicians stipulates that they should receive CE as prescribed by the Ministry of Health and Welfare. They have been working in health institutions, medical institutions, dental laboratory, and glasses store establishment (Kim & Park, 2020). Medical technicians include physical therapists and occupational therapists, who complete more than eight hours of CE a year.

Since 2014, the license reporting system has been mandatory for the medical technicians, further highlighting the importance of CE. All the technicians must report the actual condition, employment status, and completion of CE to the Minister of Health and Welfare every three years after receiving the initial license. If they do not receive the education, the license registration can be rejected and as a result, the license will be suspended, and they will not be able to engage in the license work (Moon et al., 2016). This legal change has made it an environment in which more the technicians are forced to participate in CE.

Despite the importance of CE, perception of education has not been highly discerned. For example, a study found that there was weak positive correlation or no significant difference in perception for the CE according to a carrier of the physical therapists. For that reason, the article reported that the physical therapist's awareness of the education had already been lowered by the poor quality of education, but only attended the education to ensure that the license would not be discontinued (Kim & Kim, 2019).

Various research studies are needed to raise the perception of the CE of Korean physical therapists. However, there are little studies have been conducted, and relatively few studies are available to read on online (Kim, 2016; Kim & Kim, 2019; Kim & Park, 2020; Moon et al.,

2016; Yu et al., 2016). Therefore, in this study, the purpose of the study is to find out the differences in the perception of CE according to the physical therapist's academic background. In this way, this article intends to strengthen the perception of the CE of health-care workers, such as physical therapists and occupational therapists in the Republic of Korea so that contributing to the development of national health.

## II. Methods

### 1. Subjects and data collection

Present study showed that 431 out of 563 people who participated in the two meetings of CE conducted by the Gwangju Metropolitan City of the Korea Physical Therapy Association responded in the survey in 2015. Among them, only 238 people were surveyed on the awareness of CE in 2014, excluding 181 questionnaires due to poor responses and 112 questionnaires that did not participate in CE in the previous year.

The tools used in this study are based on questionnaires related to CE for other health care personnel (Jung, 2014; Na, 2012). First, a preliminary survey was conducted with 20 physical therapists to correct and supplement the questionnaire according to the physical therapist's situation. The questionnaire was distributed and retrieved after obtaining consent with explaining to the study subjects that the research purpose, the personal information confidentiality, and research results were used only for research purposes.

The questionnaire used in this study investigated the general characteristics and perception of CE. The general characteristics consist of the gender of the subject, the final education, the work experience, and the form of a working medical institution (Table 1)(Table 2). A total of 11 questions were asked for the awareness of CE, and the

survey was conducted on the necessity of CE, satisfaction with the content and level of the education. Final education was classified as college, university, and Master of Science Course (MSc) or higher. The score for each question is the five-points Likert scale, which means five points “very necessary,” four points “necessary,” three points “ordinary,” two points “not necessary” and one point “not very necessary.” A greater score indicates a higher perception of CE (Table 3).

## 2. Data analysis

All data were statistically analyzed using SPSS version

21.0. Frequency analysis was used for the general characteristics of physical therapists. Descriptive analyses were conducted to identify the perception among those who experienced CE, and simple linear regression analysis was performed using dummy variables to identify awareness of the education based on their academic background. The number of dummy variables was set to two with an imperative sentence. The final academic background was set to be dummy variable 00 for college, 10 for university, and 01 for MSc or higher. The value of the  $\alpha$ -level was set to .05 with two-sided tests. The formula for the statement is as follows.

IF (highest level of education=1) cedum1=0. IF (highest level of education=1) cedum2=0. IF (highest level of education=2) cedum1=1. IF (highest level of education=2) cedum2=0. IF (highest level of education=3) cedum1=0. IF (highest level of education=3) cedum2=1.

Table 1. General characteristics of subjects (n=238)

	n	%
Sex		
Male	71	29.8
Female	167	70.2
Academic education		
College	140	58.8
University	77	32.4
MSc or higher	21	8.8
Career		
Less than 3 years	22	9.2
More than 3 years and less than 5 years	65	27.3
More than 5 years and less than 10 years	87	36.6
More than 10 years and less than 15 years	37	15.5
More than 15 years	27	11.3
Work place		
University hospital	5	2.1
General hospital	32	13.4
Hospital	42	17.6
Geriatric hospital	39	16.4
Clinic	76	31.9
Medical center for nursing	7	2.9
Center	3	1.3
Others	34	14.3

MSc; master of science course

Table 2. Career and medical institution type for physiotherapists to master of science course or higher (n=21)

	n	%
Academic background		
MSc	3	14.3
MS	15	71.4
PhDc	2	9.5
PhD	1	4.8
Career		
Less than 3 years	0	0
More than 3 years and less than 5 years	1	4.8
More than 5 years and less than 10 years	11	52.4
More than 10 years and less than 15 years	5	23.8
More than 15 years	4	19.0
Work place		
University hospital	1	4.8
General hospital	6	28.6
Hospital	3	14.3
Geriatric hospital	2	9.5
Clinic	6	28.6
Medical center for nursing	0	0
Center	0	0
Others	3	14.3

MSc; master of science course, MS; master of science, PhDc; doctor of philosophy course, PhD; doctor of philosophy

Table 3. Perception of CE Questions

Questions	
Q1	CE for PTs is needed.
Q2	CE is necessary for rapid acceptance of changes in the medical system and environment.
Q3	CE is more needed for new PTs.
Q4	If web-based CE exists on the Internet, I am willing to use it.
Q5	If CE is held anywhere, I will definitely participate.
Q6	We have discussed the contents of the training after receiving CE.
Q7	CE makes you confident in performing physical therapy tasks.
Q8	CE promotes work more actively in your field by making you interested in physical therapy work.
Q9	CE helps promote you to educate physical therapy to other medical and health professionals.
Q10	I am satisfied with the contents of the current CE.
Q11	I am satisfied with the level of current CE.

Q; question, CE; continuing education, PT; physical therapist

### III. Results

Question 3 (p=.000, R2=.067) was significant in the significance test of the regression equation for perception of the CE (p<.05). Question 1 (p=.687), 2 (p=.066), 4

(p=.430), 5 (p=.085), and 6 (p=.054), 7 (p=.111), 8 (p=.088), 9 (p=.213), 10 (p=.191) and 11 (p=.169), the regression formula was not significant (p>.05). In question 3, the perception of the MSc or higher was as greater as 0.562 than the college graduates (Table 4).

Table 4. Perception of CE according to academic background of physical therapists (n=238)

	Academic background		UC		SC	t	p
			B	SE			
Q1	College	3.10±0.91	3.100	.077		40.002	.000
	University	3.13±0.92	Cedum1	.030	.130	.230	.819
	MSc or higher	3.29±0.96	Cedum2	.186	.215	.058	.388
$R^2(\text{adj. } R^2)=.003(-.005), F=.376, p=.687$							
Q2	College	3.20±0.90	3.200	.075		42.574	.000
	University	3.40±0.85	Ceudum1	.203	.126	.106	.110
	MSc or higher	3.62±0.97	Ceudum2	.419	.208	.133	.045
$R^2(\text{adj. } R^2)=.023(.015), F=2.748, p=.066$							
Q3	College	3.20±1.01	3.200	.081		39.646	.000
	University	3.70±0.89	Ceudum1	.501	.135	.239	.000
	MSc or higher	3.76±0.83	Ceudum2	.562	.223	.162	.013
$R^2(\text{adj. } R^2)=.067(.059), F=8.392, p=.000$							
Q4	College	3.86±0.82	3.864	.074		52.281	.000
	University	4.09±0.95	Ceudum1	.227	.124	.121	.069
	MSc or higher	3.95±0.92	Ceudum2	.088	.205	.029	.667
$R^2(\text{adj. } R^2)=.014(.006), F=1.669, p=.191$							
Q5	College	2.79±0.89	2.793	.080		35.007	.000
	University	2.84±1.01	Ceudum1	.051	.134	.025	.702
	MSc or higher	3.29±1.01	Ceudum2	.493	.221	.147	.027
$R^2(\text{adj. } R^2)=.021(.012), F=2.494, p=.085$							
Q6	College	2.26±0.84	2.264	.075		30.006	.000
	University	2.39±0.95	Ceudum1	.125	.127	.065	.324
	MSc or higher	2.76±1.00	Ceudum2	.498	.209	.157	.018
$R^2(\text{adj. } R^2)=.025(.016), F=2.955, p=.054$							
Q7	College	2.30±0.80	2.300	.073		31.412	.000
	University	2.42±0.89	Ceudum1	.116	.123	.062	.348
	MSc or higher	2.71±1.15	Ceudum2	.414	.203	.135	.042
$R^2(\text{adj. } R^2)=.019(.010), F=2.219, p=.111$							
Q8	College	2.32±0.82	2.321	.076		30.587	.000
	University	2.47±0.98	Ceudum1	.146	.127	.076	.253
	MSc or higher	2.76±1.09	Ceudum2	.440	.210	.139	.037
$R^2(\text{adj. } R^2)=.020(.012), F=2.450, p=.088$							
Q9	College	2.49±0.84	2.486	.076		32.494	.000
	University	2.56±0.97	Ceudum1	.073	.128	.038	.572
	MSc or higher	2.86±1.11	Ceudum2	.371	.212	.116	.081
$R^2(\text{adj. } R^2)=.013(.005), F=1.556, p=.213$							
Q10	College	2.59±0.81	2.586	.074		34.801	.000
	University	2.58±0.96	Ceudum1	-.001	.125	-.001	.992
	MSc or higher	2.95±0.97	Ceudum2	.367	.206	.118	.076
$R^2(\text{adj. } R^2)=.014(.006), F=1.670, p=.191$							
Q11	College	2.63±0.79	2.629	.072		36.516	.000
	University	2.48±0.91	Ceudum1	-.148	.121	-.081	.222
	MSc or higher	2.86±1.01	Ceudum2	.229	.199	.076	.253
$R^2(\text{adj. } R^2)=.015(.007), F=1.793, p=.169$							

\*p&lt;.05, UC; unstandardized coefficients, SE; standard error, SCs; standardized coefficient MSc: master of science course

#### IV. Discussion

In the questions about this study, physical therapists had greater scores in the perception of CE for those who have MSc or higher degree than graduates from colleges. This is similar with the results from previous studies in which master course graduates had the highest satisfaction with CE (Jeong et al., 2018). Questions 5 through 11 scored below average in the study's questions, despite having a slightly higher awareness in questions 1 - 4 (need for CE). In particular, the sixth question had the lowest level of perception, and the fact that there was little discussion of its contents after receiving the CE indicates that the education was far from the needs of the field. In order to strengthen awareness of CE for physical therapists, the needs of the therapists should first be reflected in the education along with the demand survey for that education. For example, in one study, 92 % of physical therapists felt that they needed a CE related to anatomy (Wilson et al., 2018). In addition, question 4 (cyber-CE) was the most recognizable than other questions. Now that Covid-19 has become popular and pandemic has been declared, it is time to think about quality cyber-CE as well. For example, the computer-based education provided to pharmacists has shown excellent results, even in scope of practice (Grindrod et al., 2020). In other words, a well-prepared education could also be successfully provided with Internet-based CE. One reason is that cyber-CE is the most helpful way for everyone to approach fairly (Archer et al., 2020). At the same time, institutional arrangement will be needed to improve the weaknesses of non-face-to-face education.

Except for question 3, significant differences according to academic background did not appear statistically, and the value of that question R2 was 0.067. It means that only 6.7 % explained to affect the perception of the CE. Therefore, it would be correct to interpret that there is no difference in the perception of CE according to educational background, as with other questions. This is a similar result

to the fact that there was no change based on gender awareness of the CE conducted on physical therapists (Kim & Park, 2020). Another research also explains that health-care workers could improve their ability to adapt to new knowledge and professional environments when creating practical CE content (Archer et al., 2020). However, the CE for radiologists, it seems that the results are contrary to our research because the article described that people with a master's degree or higher are more satisfied than those who graduated from college or university (Jeong et al., 2017). However, a closer look at Jeong et al(2017) and find that the master's degree had a higher satisfaction with CE than other academic backgrounds, but that there were no statistically significant differences depending on their educational background. Therefore, it can be said that this study and Jeong et al(2017) shows the same results.

The limitations of this study are as follows. First, since the survey was conducted based on participants in the physical therapist's CE in Gwangju Metropolitan City, there has a limitation to the expansion and application of the data throughout the Republic of Korea. Second, there were only 21 (8.8 %) physical therapists with MSc or higher. Of course, fewer MSc or higher are natural results, but more accurate results will be available for a larger number of subjects if they are expanded to other CE in the future. Third, This study presented results only for perception as a dependent variable. It seems desirable to look at the level of awareness of CE by clinical experience and type of workplace for physical therapists in future studies. However, the authors think the study is very valuable because there is a lack of research about CE for physical therapists.

#### V. Conclusion

Physical therapists had a moderate perception of the need

for a CE and had the idea that improvements were required in what was provided in that education. In addition, there was no statistically significant difference, although there was a greater awareness of CE in the MSc or higher than college or university graduates. Authors recommend that it is necessary to open various channels to investigate the needs of the therapists and provide them with content that correspond to them.

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