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## Views of Critical Care Nurses Participating in an Adult Intensive Care Nursing Certification Program

### Erişkin Yoğun Bakım Hemşireliği Sertifika Programlarına Katılmış Yoğun Bakım Hemşirelerinin Programa Yönelik Görüşleri

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**ABSTRACT Objective:** This descriptive study aimed to reveal the views of nurses who participated in an intensive care nursing certification program regarding the process of planning and implementing care.

**Materials and Methods:** The sample comprised 218 voluntary nurses who completed an intensive care nursing certificate program in one of the four education centers. A questionnaire consisting of 25 items, of which two were open-ended questions, was used to collect data. Quantitative data were evaluated with descriptive statistics, while qualitative data obtained from the open-ended questions were examined using content analysis.

**Results:** The average age of the participants was 31.7±7.1 years, and 81.2% were female. The majority of the participants reported satisfaction with the program content, duration, related learning methods, practical training, and educators. Moreover, the contribution level of the program to their professional knowledge and skills was 69.2±25.2%. Two main themes were determined for the content analysis of the qualitative data, namely, the design and implementation of the program and the achievements of trainees.

**Conclusion:** Nurse participants in the intensive care nursing certificate program appeared generally satisfied with the training. However, some other arrangements are needed to design a competency-based program and to have them implemented by educators who teach using common course training materials in coordination and cooperation with all training centers.

**Keywords:** Certificate of need, continuing education, intensive care unit, nursing

**ÖZ Amaç:** Bu tanımlayıcı çalışma, yoğun bakım hemşireliği sertifika programlarına katılmış hemşirelerin programın tasarımı ve yürütülmesine yönelik görüşlerini belirlemek amacıyla yapıldı.

**Gereç ve Yöntem:** Çalışmanın örneklemini, dört eğitim merkezinde yoğun bakım hemşireliği sertifikalı eğitim programına katılan 218 hemşire oluşturdu. Veriler, ikisi açık uçlu 25 sorudan oluşan anket formu ile elektronik ortamda toplandı. Nicel veri tanımlayıcı istatistikler ile ve açık uçlu sorulardan elde edilen nitel veri ise içerik analizi ile değerlendirildi.

**Bulgular:** Katılımcıların %81,2'si kadın ve yaş ortalaması 31,7±7,1 idi. Katılımcıların büyük çoğunluğu programın içeriği, süresi, öğrenme yöntemleri, uygulamalı eğitim ve eğitimcilerden memnun olduğunu bildirdi. Katılımcılar, eğitim programının mesleki bilgi ve becerilerine %69,2±25,2 katkı sağladığını ifade etti. Nitel verinin içerik analizinde "sertifikalı eğitim programının tasarımı ve uygulanması, eğitimciler ve kursiyer kazanımları" olmak üzere iki ana tema belirlendi.

**Sonuç:** Yoğun bakım hemşireliği sertifika eğitim programına katılmış hemşireler programdan genel olarak memnun görünmektedir. Katılımcıların kazanımlarını artırmak üzere programın yeterlilik odaklı tasarlanması ve merkezler arası eşgüdüm içinde ortak dökümanlar ve aynı içeriği öğreten eğitimcilerle yürütülmesi için bazı düzenlemelere ihtiyaç vardır.

**Anahtar Kelimeler:** Sertifikasyon gereksinimi, sürekli eğitim, yoğun bakım ünitesi, hemşirelik

**Presented in:** This study was presented as verbal presentation at 2<sup>nd</sup> International & 8<sup>th</sup> National Critical Care Nursing Congress, October 10-13, 2018.

## Introduction

Intensive care units (ICUs) are specialized units dedicated to caring for patients who are at high risk of life-threatening health problems and who require more vigilant nursing care. Team members from different healthcare disciplines work together in these units, where high-tech and complex treatment-care methods are intensively used, and these units are considered high-risk areas in terms of patient safety (1,2). In this context, nurses providing 24/7 services at ICUs need to receive special training and continuously renew their knowledge and skills in order to provide safe and high-quality care using current technology (3-5).

One of the important studies for content planning of critical care nursing (CCN) education is the 2004 document that included the joint declaration of the European Federation of Critical Care Nursing Associations. The Position Statement on Post-registration Critical Care Nursing Education within Europe emphasized that critical care nurses are members of a vital component of the multidisciplinary team in providing evidence-based and holistic care. In addition, it is stated that ICU patients have the right to receive care from well-trained nurses who have acquired the necessary qualifications. Specialized training is required for intensive care nurses to gain the necessary qualifications in terms of knowledge, skills, and attitudes since these qualifications are not acquired during a basic vocational education. It is noted that working with competent intensive care nurses contributes to high-quality and safe care of ICU patients and improves the institutions' efficiency and effectiveness; however, the content of this training is insufficient to fully complete the process of continuous and lifelong learning of ICU nurses (6).

When examining how this training is conducted internationally, it is observed that the Critical Care Registered Nurse (CCRN) certificate is given at the end of a special examination or a higher education program. In the case of the United Kingdom (UK), the Adult CCRN certificate is issued in accordance with the National Standards for Adult Critical Care Nursing Education Standards, which cover three nationally defined stages. In the first stage, once nurses have obtained basic competencies (Step 1 competencies) after working at ICUs under direct supervision for at least one year, they are required to reach sixty credits for one academic year while obtaining second and third step competencies (7,8). In the United States, the CCRN certificate is issued by the American Association of Critical-Care Nurses and the Nursing Board. Nurses must

work 1,750 hours at the ICU over two years, with 875 of these hours accrued in the most recent year in order to take this exam (5). Additionally, the training and orientation of nurses working in ICUs are carried out within the framework of hospital rules and regulations.

In Turkey, various education programs have been conducted by institutions since the 1990s; the very first intensive care nursing course that was approved by the Ministry of Health was held in 1990 at the American Hospital in İstanbul in cooperation with the Vehbi Koç Foundation. These programs have been carried out by the Semahat Arsel Nursing Education and Research Center since 1993, and the circular on intensive care nurse training was issued by the Ministry of Health in 2003 (9). In 2015, the Ministry of Health established standards for the framework, content, and other rules of intensive care nursing education, and these trainings were carried out in more than one hundred centers meeting these requirements (4,10,11).

Although intensive care nursing education programs contribute significantly to nursing and patient outcomes and institutional performance, they cause time constraints and economic burden to employees and the institution. Institutions are also required to make additional arrangements for these programs considering the current CCN shortage (6,12,13). In this context, the evaluation of such programs and their possible improvements (depending on the results) are essential for the effective use of resources. In addition, within the framework of continuing education standards in nursing, evaluating the contributions of programs to the professional development of nursing practice and patient care is also needed (9,14,15). This study aimed to determine the views of nurses participating in adult intensive care nursing certification programs on the design and execution of the training.

## Materials and Methods

Ethics committee approval was received from the Koç University before conducting this descriptive, cross-sectional study (decision no: 2018.160.IRB3.116, date: 07.06.2018). The study was conducted between July and August 2018 at four different education centers in the Marmara Region authorized by the Ministry of Health to conduct the Intensive Care Nursing Certified Education Program. The sample comprised 427 nurses who received training between January 2015 and May 2018 at one of these four centers.

All nurses were included in the sample, and the study was completed with 218 nurses who volunteered to participate. The survey response rate was 51.1%.

Researchers used a questionnaire consisting of twenty-five questions, two of which were open-ended, which they developed based on the literature (4,14). The questionnaire consisted of nine questions to reveal sociodemographic and institutional characteristics of nurses and sixteen questions to evaluate the opinions of the nurses on the certified education program. The data were collected electronically (Koç Qualtrics) after obtaining institutional permission. With the support of the administrators of the education centers, the questionnaire was sent three times, each fifteen days apart, to the nurses' email addresses. The personal identification of the participants was not included in the data collection tool and the form was collected anonymously. Additionally, the questionnaire contained a statement noting that by submitting the questionnaire, all participants would agree to have their data included in the study.

### Statistical Analysis

SPSS 24.0 was used to evaluate the data. Quantitative data were evaluated with descriptive statistics. Qualitative data obtained from the open-ended questions (448 statements from 200 participants) were examined separately by three researchers, and themes and sub-themes were determined (16).

## Results

The mean age of the nurses was  $31.7 \pm 7.1$  years, the total period of professional experience was  $10.4 \pm 7.3$  years, and experience in ICUs was  $5.93 \pm 4.3$  years. Of the participants, 81.2% were female, 65.1% were working in public hospitals, 71.1% were working in general ICUs, and 77.5% were staff nurses (Table 1).

Of the nurses, 89.4% reported that the certificate program content was sufficient, 84.4% noted the program duration was sufficient, and 88.1% mentioned the educational methods were sufficient. In addition, 54.6% stated that they were satisfied with educators in general and 50% noted that they were satisfied with the laboratory and clinical training (Table 2). Nurses evaluated the contributions of the certification program on the scale from 0 to 100 and reported that the level of the training's contribution to professional knowledge and skills ranged from  $67.6 \pm 24.8\%$  to  $70.9 \pm 26.1\%$  (Table 3).

The characteristics that the nurses considered effective and efficient and their recommendations for improvements to the program were categorized into two main themes (design

**Table 1. Sociodemographic and institutional characteristics of nurses (n=218)**

	Mean (min-max)	SD
<b>Age</b>	31.7 (19-50)	7.1
<b>Total professional experience (years)</b>	10.4 (1-32)	7.3
<b>Critical care experience (years)</b>	5.9 (1-20)	4.3
	n	%
<b>Age</b>		
≤30 years old	112	51.4
>30 years old	106	48.6
<b>Gender</b>		
Female	177	81.2
Male	41	18.8
<b>Education center</b>		
EC 1	95	43.6
EC 2	54	24.8
EC 3	53	24.3
EC 4	16	7.3
<b>Hospital</b>		
State	142	65.1
University	44	20.2
Private	32	14.7
<b>Intensive care unit</b>		
General ICU	155	71.1
Coronary care unit	17	7.8
Cardiovascular ICU	16	7.3
Other (surgical, medical, pediatric, emergency ICU)	30	13.8
<b>Position</b>		
Nurse	191	87.6
Nurse manager	27	12.4
<b>Total professional experience</b>		
≤10 years	143	65.6
>10 years	75	34.4
<b>Critical care experience</b>		
≤5 years	125	57.3
>5 years	93	42.7
SD: Standard deviation, ICU: intensive care unit, EC: education center, min: minimum, max: maximum		

and implementation of the program and the achievements of trainees) and six sub-themes (Table 4). In addition, 71.1% of the participants stated that the certificate examinations should continue to be conducted in the current centers while 28.9% said that they should be conducted centrally by an authorized organization.

**Table 2. Views and satisfaction of nurses who attended the intensive care nursing certification program (n=218)**

	n	%
<b>Content of the education program</b>		
Satisfactory	195	89.4
Unsatisfactory	23	10.6
<b>Length of the education program</b>		
Satisfactory	184	84.4
Unsatisfactory	34	15.6
<b>Learning methods and strategies</b>		
Satisfactory	192	88.1
Unsatisfactory	26	11.9
<b>Laboratory &amp; clinical education</b>		
Highly satisfied	51	23.4
Satisfied	109	50.0
Partially satisfied	50	22.9
Completely unsatisfied	8	3.7
<b>Educators</b>		
Highly satisfied	55	25.2
Satisfied	119	54.6
Partially satisfy	41	18.8
Completely unsatisfied	3	1.4

**Table 3. Perceptions of nurses regarding contributions of the intensive care certification program to their professional skills (n=218)**

	Mean (min-max)	SD
Professional knowledge & skills	68.3 (1-100)	23.6
Professional autonomy	69.2 (1-100)	23.7
Critical thinking & decision-making skills	67.6 (1-100)	24.8
Management of critical & emergency situations	69.7 (1-100)	25.6
Providing quality care	70.9 (1-100)	26.1
Ethical decision-making skills	69.3 (1-100)	27.1
Mean	69.2 (1-100)	25.2

SD: Standard deviation, min: minimum, max: maximum

## Discussion

This study was conducted to determine the views of 218 nurses on the design and implementation of intensive care nursing certification programs.

The majority of participants reported that the content and duration of the program design were sufficient. However, when the responses to the open-ended questions were evaluated, participants stated that the content should have been more comprehensive, up-to-date, and case-based as well as more focused on improving clinical skills and competencies. Furthermore, participants wrote that there was too much repetitive information during the course and that the course duration should have been longer despite the content and duration being reported as sufficient. These certification programs are carried out within the scope of the standards set by the Ministry of Health (4). In all education centers; however, the participants' opinions and suggestions indicate that there might be a general lack of or inadequacy in the design process in terms of needs analysis and determining the content and duration. It is necessary to conduct a needs analysis on the basis of knowledge, skills, and attitudes, to determine the desired competencies to be acquired in the program in detail, and to plan the content and duration based on this data during the design and delivery of the education programs, which are the most important issues in the standards for both continuous education in nursing (7,8,17,18).

In this study, the majority of participants stated that they were satisfied with the learning methods that were related to the design and implementation of the education program. According to the data obtained from the open-ended questions, many participants suggested improvements despite the fact that there was positive feedback on the content delivery (learning materials, methods, and environment). These suggestions included topics such as preparing and sharing the training documents in advance, enhancing the training materials, and using more interactive learning methods and simulations. As stated in the literature, education programs should be learner-centered and conducted in simulated environments with an interactive learning approach to ensure that they meet the requirements of adult education philosophy and to provide necessary qualifications (7,9,19,20). In this study, participants have different opinions regarding the learning methods and learning materials due to the lack of any common curriculum or coordination between the centers.

**Table 4. Themes and sub-themes derived from the nurses' positive opinions and suggestions for improvement regarding the intensive care nursing certification program**

Theme	Sub-themes	Positive experiences	Suggestions for improvement
Theme 1: Design and implementation of the program	Design	<p>"In general, it was as detailed as possible in all subjects and increased our knowledge." (Participant no. 100)</p> <p>"Each intensive care nursing issue was addressed." (Participant no. 183)</p> <p>"Its content was developed based on the most recent information." (Participant no. 121)</p>	<p>"There should be more nursing-related topics." (Participant no. 26)</p> <p>"Current issues and issues that might be even more important in the future, such as spiritual care or ethical issues, should be included more, rather than a limited course duration." (Participant no. 169)</p> <p>"The number of case studies should be increased." (Participant no. 91)</p> <p>"Course length was short. I think theoretical knowledge should be given more importance. The desired efficiency could not be achieved from the internships." (Participant no. 61)</p> <p>"Lecture slides should be updated." (Participant no. 117)</p>
	Implementation	<p>"The training methods, environment, and educators were very good, and it was a very useful process." (Participant no. 59)</p> <p>"Providing education with up-to-date information and materials..." (Participant no. 173)</p> <p>"The applications were nice, the slides with more visual content were more memorable." (Participant no. 187)</p> <p>"Simulation practices and midterms." (Participant no. 165)</p>	<p>"It would be better for more effective learning to develop a booklet including the topics and distribute it prior to the program." (Participant no. 10)</p> <p>"... Interactive courses and applications can be added and simulation centers can be established within hospitals to improve the education quality." (Participant no. 7)</p> <p>"The educators should include question and answer sessions rather than reading the content." (Participant no. 32)</p> <p>"Ensure more permanent learning with different methods in lecturing." (Participant no. 113)</p> <p>"All intensive care units should have internship programs. The course area and seats should be comfortable and air conditioning should be good." (Participant no. 160)</p>
	Clinical practice	<p>"We were able to discuss everything together, especially in bedside assessment through one-to-one training." (Participant no. 24)</p>	<p>"It is better to have training in hospitals where there is more patient diversity and full staffing." (Participant no. 80)</p> <p>"The duration of the course can be extended and the training and internship part can be more efficient." (Participant no. 6)</p> <p>"Trainees should not be regarded as a labor force." (Participant no. 76)</p> <p>"Clinical mentors should be trained; their behavior is problematic." (Participant no. 105)</p> <p>"It would be more efficient if the trainees were regarded as intensive care nurses, not as student nurses." (Participant no. 123)</p> <p>"Training in my own unit did not provide extra benefits." (Participant no. 163)</p>
	Educator quality	<p>"Lecturers were experienced and proficient." (Participant no. 13)</p> <p>"Educators had comprehensive knowledge. The descriptions were taken from what we experience and use in our daily working life." (Participant no. 64)</p>	<p>"Training with experienced educators is sufficient; professors are not a requirement." (Participant no. 13)</p> <p>"Educators should be qualified; knowledge and teaching are different things." (Participant no. 70)</p> <p>"Educators should have full knowledge. Practical training should be more emphasized." (Participant no. 73) "Nurse educators should improve their teaching techniques." (Participant no. 95)</p>

**Table 4. Continued**

Theme	Sub-themes	Positive experiences	Suggestions for improvement
Theme 2: The achievements of trainees	Increase in knowledge and skills	<p>"It helped me refresh my knowledge and obtain new information." (Participant no. 21)</p> <p>"I've learned the proper applications of the processes that we have been misapplying." (Participant no. 196)</p> <p>"The program has contributed a lot in terms of professional skills and professionalism. My self-esteem has increased and I have started to understand cause and effect relations much better." (Participant no. 197)</p>	<p>"I participated in the course with five years of intensive care experience. I think that the program would be more efficient within the first two years." (Participant no. 8)</p> <p>"I suggest that a placement test should be held nationally by the Ministry and candidates who receive a passing grade should be able to apply." (Participant no. 96)</p> <p>"I think the information provided to my colleagues who have never worked in intensive care seems to hang in the air; they should experience an intensive care environment and then participate in the program." (Participant no. 125)</p>
	Knowledge-experience sharing and social interaction	<p>"To communicate with my colleagues working in different hospitals and exchange ideas about the different applications in hospitals." (Participant no. 94)</p> <p>"I've gained different perspectives." (Participant no. 91)</p> <p>"I think it helps create a common language in the ICU field." (Participant no. 182)</p> <p>"Some great friendships have been made." (Participant no. 28)</p>	-

Participants' satisfaction levels toward laboratory and clinical practice were found to be high. According to the data obtained from the open-ended questions, some participants reported that they were very satisfied with the training that utilized models and simulation or included practice with medical devices in ICU. However, contrary to these findings, some participants stated that practical training was not effective and efficient, and some of the participants mentioned that they felt as if they were just a labor force in their own workplace. Many participants suggested the clinical training be conducted more effectively and efficiently, its duration be extended, and its theoretical knowledge be more linked within the simulated clinical environment. In clinical training, knowledge and skills learned in the laboratory and theory classes are intensified, and competencies that the participants must acquire are tested. Clinical training in the UK program is implemented in a long-term, sustainable environment with the same nurse educator who

has completed the Nurse Mentor Program for qualifying purposes (7,8). In this three-week clinical practice, within the standards of Intensive Care Nursing Certification Program of the Ministry of Health, participants must practice in different ICUs with several nurse mentors (4). In addition, the number of clinical mentors involved is another remarkable issue related to the standards. This means that one nurse mentor for each application area is considered sufficient and leads to a high number of participants per mentor. The reason that clinical training is not implemented effectively and efficiently may be associated with the short-term clinical application, the participants not practicing with the same mentor, the lack of standardization in mentoring programs, and the high number of participants per a mentor.

In this study, approximately 75% of the participants reported that they were satisfied or very satisfied with the educators. According to the data obtained from the open-ended questions, although there were participants who were

satisfied with receiving training from specialist physicians and nurses, many participants stated that these particular educators' competence on teaching the clinical skills was insufficient as well as their having apathetic and negative attitudes. The role of the educator and the program is very important for reaching the target audience and instilling professional interest and enthusiasm. Therefore, it is necessary for educators to perform a needs analysis and plan and carry out the courses with appropriate training techniques (in harmony with the objectives obtained from the analysis) in order to provide an effective course. Course managers or coordinators should facilitate coordination with educators to achieve course objectives and ensure content integrity (9,14). The Neonatal Resuscitation Program, launched in Turkey in 1996 in cooperation with the Ministry of Health and the Neonatology Association, is considered a well-structured and well-maintained program with its training material and educators (21,22). In this study, dissatisfaction with educators may be related to the lack of a common course training manual, preparatory training for educators, and the different implementations in each center.

The main objective of the critical care nursing certification program is to improve the professional knowledge and skills of nurses and to provide safer care in the clinical field. In this study, it was observed that the contribution level of education programs in terms of professional autonomy, critical thinking and decision-making, critical or emergency situation management, quality care provision, and ethical decision-making skills was lower than the expected value (avg. 69.2%). Data obtained from the open-ended questions also support this result. Participants stated that the program increased and updated their knowledge and created awareness; however, they noted that the practical training was not sufficient for qualification and clinical education and that this should be improved. In addition, assessment is also important in these programs, and approximately 30% of the participants in this study suggested assessment should be centrally organized. In fact, in such special branch nursing training, this is required to ensure that participants fully meet the desired objectives and obtain the necessary skills and to evaluate its contribution to the clinical field (7,8,23).

In this study, participants stated that the certification program provided an opportunity to create common language and strengthen social bonds through information exchange and experience sharing between colleagues. In a

study by Skar (24), nurses stated that they interacted with their colleagues in constantly changing work environments and learned from each other, which is extremely useful for continuous improvement. The positive interaction between the participants of these programs is an important achievement in terms of improving critical care nursing.

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## Conclusion

In this study, which examined the views of 218 nurses on the design and implementation of the intensive care nursing certification program, it was found that the participants were generally satisfied with the program and that the process created an opportunity for positive interaction and experience sharing. However, it was also found that the program was not sufficient in contributing to the professional skills of the participants. The participants recommended that both the theoretical and clinical practice content of the program be improved, the duration extended, the learning materials include a common course training manual, a partnership among educators be more developed, the teaching methods be enhanced through using simulation and interactive methods, and the clinical training be improved.

Policymakers, professional organizations, and employees of education centers have a great responsibility to ensure that these programs, which are an important cost factor for both participants and institutions, be implemented within the same framework in all centers. In this context, a review of relevant standards and disciplines of execution will be effective. In addition, since this study is limited to the opinions of the participants, it is recommended that studies are conducted to include different point of views in terms of the efficiency of trainees in patient care and their contributions to the unit.

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## Ethics

**Ethics Committee Approval:** Ethics committee approval was received from the Koç University before conducting this descriptive, cross-sectional study (decision no: 2018.160. IRB3.116, date: 07.06.2018).

**Informed Consent:** Written consent was obtained from the nurses.

**Peer-review:** Internally peer-reviewed.

## Authorship Contributions

Concept: N.G., E.T., G.B., E.K., Y.A.E., Y.E., Z.G.B., A.K.Y., Design: N.G., E.T., G.B., E.K., Y.A.E., Y.E., Z.G.B., A.K.Y., Data Collection and Process: N.G., E.T., G.B., E.K., Y.A.E., Y.E., Z.G.B., A.K.Y., Analysis or Interpretation: N.G., E.T., G.B., E.K.,

Y.A.E., Y.E., Z.G.B., A.K.Y., Literature Search: N.G., E.T., G.B., E.K., Y.A.E., Y.E., Z.G.B., A.K.Y., Writing: N.G., E.T., G.B.

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