INTRODUCTION

Prevention of healthcare-related errors and reduction or elimination of patient problems caused by such errors is based on formation of the patient safety culture. Therefore, patient safety culture is important in terms of representation of quality healthcare services.\(^1,2\) The patient safety involves all measures and precautions made for reduction or elimination of possible adverse effects of medical care during medical diagnosis and treatment.

According to a report released by the Institute of Medicine (IOM), 44,000 to 98,000 people die every year as a result of a medical error. Number of deaths caused by medical errors is ranked as the eighth, which is followed by Acquired Immune Deficiency Syndrome (AIDS), breast cancer and traffic accidents.\(^3\) The most frequent problems threatening the patient safety are diagnosis errors, medication...
errors, hospital infections, bedsores, complications during and after the operation, errors induced by breakdown of equipments-appliances, falls and ventilator-related errors.\textsuperscript{4,5}

The facilities and properties of the hospital units can also pose serious risks in terms of medical errors which can be threatening to the patient safety. Intensive care units (ICUs) are privileged departments where more serious patients requiring constant monitoring are provided care and many advanced technological life-saving equipment and appliances are used.\textsuperscript{6} It is possible for all patients admitted to ICUs to face a life-threatening error during their hospitalization.\textsuperscript{1}

Nurses working at intensive care units have a crucial role in the establishment of a safe and qualified care for the patients. ICU nurses are the personnel who give constant care, apply complicated medications, use various technological equipments, and offer care to patients in need of advanced life support.\textsuperscript{7,8} For this reason, it is of great significance for the nurses to adopt, defend, and have a critical perspective on the issue of patient safety to offer a prolonged and safe care.\textsuperscript{7,9}

It is required to determine primarily the patient safety culture in the institution in order to enhance the patient safety culture and prevent deficiencies, practices or risk factors causing medical errors.\textsuperscript{10,11} The purpose of this study was to assess perspectives of nurses regarding patient safety culture and their related knowledge and practices.

METHODS

This descriptive study was conducted at intensive care units of Health Practice and Research Center of Erciyes University and Kayseri Education and Research Hospital in the city center of Kayseri in Turkey. The population of the study consisted of 399 nurses working at intensive care units at these hospitals. 316 of these nurses constituted the sample group of this study. No systematic sampling was done and all the voluntary nurses on duty between November 2012 and December 2012 were included in the study. Data were collected by using a questionnaire and Hospital Survey on Patient Safety Culture (HSOPSC)\textsuperscript{12}, developed by The Agency for Healthcare Research and Quality (AHRQ). Developed by the AHRQ\textsuperscript{12} with the aim of determining the patient safety culture in hospitals in USA, HSOPSC was adapted to the Turkish by Bodur and Filiz,\textsuperscript{13} and its validity and reliability study was conducted. The questionnaire, designed by the researchers upon a comprehensive survey of literature, involved socio-demographic characteristics of the nurses and included questions about the patient safety.\textsuperscript{1,9,13}

The HSOPSC has 42 items measuring 12 dimensions of the safety culture. It contains 18 negatively-worded items on safety culture and 7 items on personal information. It measures the dimensions of patient safety culture in hospitals in general as well as in hospital units in particular. For each positively worded item, the percentage of positive responses is calculated by using the percentage of respondents answering the question as “strongly agree”, “agree”, “always” or “most of the time”. Likewise, for each negatively worded item, the percentage of negative responses is calculated by making reverse coding. The obtained scores indicate the percentage of positive responses. Dimension scores are calculated by taking the mean scores of the dimension items. In all cases, the possible range of score is from 0 to 100, with higher scores indicating more positive safety culture.\textsuperscript{12,13} The Cronbach’s alpha reliability coefficient was determined as 0.79 for this study.

Ethics committee approval was received from Erciyes University Clinical Research Ethics Board and official permissions were obtained from the institutions where the study was conducted. In addition, the participating nurses submitted their written and verbal informed consents. In this study, the normal distribution of the data was analyzed through Shapiro-Wilk test. While percentage distribution was used to assess the data, Mann-Whitney U was used to compare difference between two groups. The summary statistics are shown as number of unit (n), percentage (%) and median (25p- 75p). Statistical significance was set at \( p<0.05 \).

RESULTS

The average age of the nurses was 30.4±5.3, 80.4% of them were female, and 65.8% were married. 67.4% of the nurses held a Bachelor degree, and 44.6% had a nursing experience of 2 - 5 years. 25.6% stated that they worked at neonatal intensive care units. About half of the nurses (50.3%) reported that they were satisfied with their jobs. Table-I illustrates knowledge and practices of the nurses about the patient safety. It was observed that a majority of the nurses (69.6%) got training on patient safety, and that 13% encountered an incident of threat to patient safety. In addition, 48.8% assessed falls as the most common case they encountered, and
nearly all of the nurses (93%) indicated that they
shared incidents of patient safety with the medical
team.

Table-II shows the percentages of positive
responses for dimensions of HSOPSC. As indicated
in the table, “teamwork within units” among the
12 dimensions had the highest percentage (80.3%)
whereas “nonpunitive response to error” had the
lowest percentage (25.1%).

When ratings of the nurses of patient safety in
their units were analyzed, it was seen that 43%
assessed their units as “acceptable” in terms of

patient safety. About 13.6% of the nurses working
at intensive care units stated that they encountered
incidents of potential threat to the patient safety
and that 48.8% of these cases were falls. The results
also indicated that a great majority of the nurses
(88%) did not fill out a case report on patient safety
in the last 12 months.

Table-III illustrates a comparison of perceptions
of the nurses regarding the dimensions of the
patient safety culture based on whether they
received training or not. The mean scores obtained
by trained nurses from the dimensions “handoffs
and transitions” ($p=0.017$) and “frequency of events
reported” ($p=0.003$) were higher compared to
the mean scores of those who did not receive any
training on patient safety.

DISCUSSION

In this study, among the 12 dimensions of
HSOPSC, the highest percentage of positive
responses was obtained for “teamwork within
units” and “nonpunitive response to error” had
the lowest percentage. These results supported the
previous studies on the subject$^{13,14}$ (Table-II).

The results of this study revealed that 69.6%
of the nurses stated that they received patient
safety training as part of their in-service training
programs. The percentage of the positive
responses given by the nurses, who received in-
service training for the dimensions “handoffs and
transitions” and “frequency of events reported”,
was found to be higher than percentage of those
who did not receive any training on patient safety
.
Çiftlik et al.,\textsuperscript{15} reported that success rate of the nurses on patient safety increased from 59\% to 91.2\% following a training offered to the medical staff. The findings of this study also indicated that in-service training improved awareness of nurses regarding patient safety.

About 43\% of the nurses considered the patient safety in their units as “acceptable”. This result was similar to other studies conducted in Turkey.\textsuperscript{16,17} However, in a research conducted by the AHRQ,\textsuperscript{14} the nurses’ assessments about their units were determined to be “very good” in terms of patient safety.

Patient safety culture is crucial for prevention and correction of errors.\textsuperscript{18} The results of this study indicated that 88.0\% of the nurses did not fill out a case report on patient safety in the last 12 months. In his study, El-Jardali et al.,\textsuperscript{19} determined that 57.2\% of the nurses did not report any case on patient safety. Similarly, 81.5\% of the nurses in Çakır and Tütüncü’s study were found not to have documented any incident on patient safety.\textsuperscript{17}

The nurses were found to attribute the incidents of potential threat to patient safety due to the following reasons: heavy workload (55.8\%), working in a stressful atmosphere (22.3\%), and dealing with patients who are in need of specialized, complicated care (21.9\%) (Table-I). In other studies conducted on patient safety, the nurses referred to unreadable handwriting, heavy workload, inadequate number of medical staff, long working hours, handling irrelevant tasks, inexperience, negligence, exhaustion, burnout, and stress as the causes of medical errors.\textsuperscript{4,20,21} The results obtained in this study had similarity with results of the previous study and suggested that the working conditions and heavy workload increased tendency of the nurses to make errors.

CONCLUSION

In accordance with the above mentioned results, it is argued that through more frequent in-service trainings, awareness of the nurses regarding patient safety should be raised and their related knowledge should be kept up-to-date. In addition, number of studies on determination of patient safety culture should be increased and more comprehensive practice-based studies should be undertaken.

Declaration of interest: The authors have no of interest to declare.

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Authors’ Contribution:
The data was collected by Zuhal Yilmaz. It was analyzed by Songul Goris. The literature research was done by Zuhal Yilmaz and Songul Goris and all authors have contributed in preparation of final manuscript.