

## ORIGINAL ARTICLE

# Awareness of Surgical and Medical Intensive Care Nurses' about Alcohol Withdrawal Syndrome and Care Practices\*

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## Main Points

- **Moderate AWS awareness:** Nurses scored an average of 9.92 out of 20 on the alcohol withdrawal syndrome (AWS) awareness scale, reflecting moderate knowledge. This highlights a significant knowledge gap in critical care environments regarding AWS, which can hinder early diagnosis and care.
- **Experience and education matters:** Nurses with 5 or more years of professional experience and those with specific AWS training had significantly higher awareness levels ( $p < .05$ ). This underscores the importance of practical experience and targeted educational programs in improving AWS care practices.
- **Experience increases knowledge:** Having prior nursing care experience with AWS patients was the only independent variable linked to increased awareness ( $\beta = 0.144$ ;  $p = .016$ ). This demonstrates the critical role of hands-on experience in enhancing knowledge and skills in managing AWS in ICU settings.
- **Need for enhanced educational programs:** The study calls for comprehensive educational and training programs to address the identified gaps in AWS awareness, ensuring nurses are better equipped to diagnose and manage AWS in critical care units.
- **Implications for nursing practice:** The results emphasize the need for hospitals to integrate AWS-specific care protocols and to focus on retaining experienced nurses in ICUs, given their pivotal role in improving patient outcomes for those at risk of AWS.

## Abstract

Alcohol withdrawal syndrome is a significant global health concern affecting individuals with alcohol use disorder, particularly in hospital settings like intensive care units. Early diagnosis and management are crucial but often complicated by symptom overlap with other conditions. This study aims to evaluate the awareness and knowledge of surgical and medical intensive care unit nurses regarding AWS, focusing on risk factor identification, diagnosis, and care practices. A cross-sectional descriptive study was conducted from November 15 to December 01, 2021, involving 112 nurses from public and private hospitals. Data were collected via an online questionnaire developed from existing literature, which included demographic questions and a 20-item alcohol withdrawal syndrome awareness scale, where higher scores indicated better awareness. Statistical analysis utilized the Kolmogorov – Smirnov test for normality, Mann – Whitney  $U$  for two-group comparisons, and Kruskal – Wallis  $H$  for multiple-group comparisons. A multivariate generalized linear model assessed the influence of independent variables on alcohol withdrawal syndrome awareness. Nurses scored an average of 9.92 out of 20 on the alcohol withdrawal syndrome awareness scale, indicating moderate knowledge. Significant differences in awareness were noted based on professional experience, intensive care unit type, and prior training. Nurses with 5 or more years of experience and those with specific training in alcohol withdrawal syndrome care exhibited higher awareness levels ( $p < .05$ ). The study reveals a

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gap in alcohol withdrawal syndrome awareness among intensive care unit nurses, particularly those with less experience and training. Enhanced educational programs and practical exposure are essential for improving early identification and management of alcohol withdrawal syndrome in critical care settings.

**Keywords:** Addictions to alcohol, alcohol withdrawal syndrome, awareness, nurses, nursing education, patient care

## Introduction

Alcohol dependence or alcohol use disorder is defined as uncontrolled and repetitive alcohol consumption (Pribék et al., 2021; Sönmez et al., 2016). Alcohol use disorder has been recognized as a global health problem in recent years and is the seventh leading cause of death (Mainerova et al., 2015). On the other hand, alcohol withdrawal syndrome (AWS) occurs as a result of the rapid and abrupt cessation of alcohol consumption during the period when individuals are treated in a hospital for any reason. In general, 50% of patients with alcohol use disorder experience complicated or uncomplicated AWS, and death occurs in 1 – 5% of these patients (Mainerova et al., 2015; Leuenberger et al., 2017). Agitation, consciousness fluctuations, perceptual disturbances, delirium tremens (DT), and severe autonomic responses are the most common symptoms. At the time of diagnosis, it should be noted that these symptoms are not associated with other organic or mental disorders (Mainerova et al., 2015; Leuenberger et al., 2017; Mirijello et al., 2015; Wood et al., 2018; Pribék et al., 2021).

The proportional increase in patients experiencing alcohol withdrawal in recent years necessitates physicians and nurses in all patient care areas, not only in psychiatry units, to give care to AWS patients (Mirijello et al., 2015). Since it is a clinical diagnosis, it is important for health professionals to be able to make an ideal evaluation and early diagnosis with a sufficient knowledge level in the differential diagnosis (Pribék et al., 2021). For this purpose, psychometric tools have been proposed to identify and monitor AWS symptoms in patients (Leuenberger et al., 2017; Pribék et al., 2021).

Alcohol withdrawal syndrome, which can be seen frequently in intensive care units (ICUs), where care and treatment of patients are carried out due to many different indications, can be confused with the symptoms of the main pathologies and cause serious complications. This can lead to death as a result of delayed diagnosis and treatment unless special attention is paid (Sarff & Gold, 2010; Seshadri et al., 2022).

This study aims to determine the level of awareness and knowledge of surgical and medical intensive care nurses about identifying risk groups associated with AWS, as well as monitoring and care.

## Material and Methods

This study, as a cross-sectional descriptive study, was carried out between November 15 and December 01, 2021, with the participation of surgical and medical intensive care nurses working in public and private health institutions in the province of İstanbul, whose voluntary consent to participate was obtained. Ethical approval was obtained for the research (Date: 01.11.2021 and 2021/11-732) from the İstanbul Yeni Yüzyıl University University Science, Social and Non-Interventional Health Sciences Research Ethics Committee. In addition, written

informed consent was obtained from the intensive care nurses participating in the study. The population of the research is 153 intensive care nurses working in public and private health institutions in İstanbul. The sample of the study consisted of 112 intensive care nurses who agreed to participate voluntarily in the study. The sample size calculator analysis method was used to calculate the sample size. The study was planned to be completed with the participation of 110 intensive care nurses from the population of 153 nurses working in the selected institutions included in the study with a 95% confidence level in the sample calculation (<https://tr.surveymonkey.com/mp/sample-size-calculator/>). Data were collected using the “Descriptive and Information Collection Form,” an online data collection tool prepared by the researchers in line with the literature (Kattimani & Bharadwaj, 2013; Sharoff, 2013). The first nine items, which include the socio-demographic characteristics of intensive care nurses, include descriptive information (age, gender, marital status, education level, years of experience in ICUs, unit and institution information, education and/or experience status of intensive care nurses in terms of AWS). In the information collection section of the form, 20 questions were formulated in line with the literature, inquiring the definitions of risk groups, diagnostic and follow-up tools used, AWS level, patients’ symptoms and signs, and their awareness of pharmacologic treatment and nursing care interventions (Sarff & Gold, 2010; Kattimani & Bharadwaj, 2013; Knight & Lappalainen, 2017; Davis et al., 2018; Eloma et al., 2018; Elliott, 2019; Seshadri et al., 2022). The questions developed for this study utilized three validated scales: the Clinical Institute Withdrawal Assessment for Alcohol, Revised (CIWA-Ar), the Richmond Agitation – Sedation Scale (RASS), and the Ramsay Sedation Scale. These scales are recommended for managing AWS, and the study also evaluated participants’ awareness and knowledge of their application. The CIWA-Ar is a validated instrument used to quantify the severity of alcohol withdrawal symptoms, providing guidance for treatment decisions and facilitating the monitoring of symptom progression (Sullivan et al., 1989). The RASS is a widely validated tool employed to assess levels of agitation and sedation in critically ill patients, ensuring appropriate sedation management (Sessler et al., 2002). Lastly, the Ramsay Sedation Scale measures the depth of sedation in ICU patients, offering a reliable framework to evaluate sedation ranging from mild anxiety to deep sedation requiring stimulus-induced arousal (Ramsay et al., 1974). These questions were submitted to the opinions of four intensive care specialists before data collection and were applied after the necessary arrangements were made according to their opinions. In the evaluation of this structured questionnaire, the maximum score was set as “20.” Increasing scores were interpreted as indicating a higher level of knowledge and awareness. The Descriptive and Information Collection Form, which takes about 3 – 5 minutes to fill out, was delivered online to the nurses participating in the study. In the form, information was given about the purpose of the study and the essentiality of voluntary participation, and their consent was obtained.

**Statistical Analysis**

The normality assumption of continuous variables was assessed using the Kolmogorov – Smirnov test. Categorical variables were presented as frequencies (n, %), while continuous variables were expressed as mean ± standard deviation, median, and inter-quartile range (IQR). To determine the reliability of the scales employed in the study, Kuder – Richardson Formula 20 (KR-20) reliability coefficients were calculated. Comparisons between two groups for continuous variables were conducted using the Mann – Whitney *U* test. When comparing more than two groups, the Kruskal – Wallis *H* test was utilized. In the event of significant differences, Dunnett's multiple comparison post-hoc test was employed to identify the specific groups responsible for the significant differences.

To determine the effect of independent variables on dependent variables (AWS awareness level), a multivariate generalized linear model (GLM) analysis was performed. The results were evaluated at a 95% CI, and statistical significance was set at *p* < .05 (two-tailed). All statistical calculations were carried out using Statistical Package for Social Sciences (SPSS) software version 27 (IBM SPSS Corp.; Armonk, NY, USA). The KR-20 value for the total score of the AWS awareness survey was calculated as 0.908. This finding suggests that the reliability of the AWS awareness survey used in the study was excellent, indicating a high degree of internal consistency among the items in the scale.

**Results**

A total of 112 nurses, 64% of whom were 25 years of age or under and 66% of whom were female, participated in the study. It was found that 85% of the nurses were single, 30% had health vocational high school education, 39% had an associate's degree, and 31% had a bachelor's degree or higher; 51% had more than 2 years of professional experience, 70% worked in private hospitals, and 58% worked in general surgery or cardiovascular surgery ICUs; 30% of the nurses received training on AWS and its care, and 31% had experience in nursing care for patients with AWS. Descriptive characteristics of the nurses are presented in detail in Table 1.

The AWS awareness level of nurses was measured with a structured AWS awareness questionnaire. The nurses scored an average of 9.92 ± 5.55 out of 20 points on the 20-item AWS awareness questionnaire. From this score, it was determined that the mean AWS awareness level of the nurses was 49.6%, and the median was 55% (IQR, 25 – 75%). The items with the highest (77.7%) and lowest (11.6%) AWS awareness levels of nurses were "Assessing patient history related to AWS at the stage of nursing admission and diagnosis" and "Awareness of using the Ramsay scale in patient follow-up in AWS," respectively (Table 2).

It was found that there was a statistically significant difference in AWS awareness levels of nurses according to their professional experience (*K-W*χ<sup>2</sup> = 8.198; *p* = .017). In the subgroup analysis, it was determined that this difference originated from the group of nurses with 5 years or more of professional experience. Nurses with more professional experience had a higher level of AWS awareness. The AWS awareness levels of nurses who worked in general surgery or cardiovascular surgery ICU (*z* = -2.311; *p* = .011), received training on AWS and its care (*z* = -2.800;

**Table 1**  
*The characteristics of the participant intensive care nurses*

<b>Participant characteristics (N=112)</b>	<b>Category</b>	<b>n(%)</b>
Socio-demographic characteristics	<b>Sex</b>	
	Male	38(33.9)
	Female	74(66.1)
	<b>Age</b>	
	25 years and under	72(64.3)
	26 years and over	40(35.7)
	<b>Educational status</b>	
	Health Vocational High School	33(29.5)
	Associate degree	44(39.3)
	Bachelor and above	35(31.3)
	<b>Marital status</b>	
	Single	95(84.8)
	Married	17(15.2)
Characteristics related to work life	<b>Years of experience in ICUs</b>	
	0 - 1 year	55(49.1)
	2 - 4 years	24(21.4)
	5 years and more	33(29.5)
	<b>Characteristics of the institution</b>	
	Public Hospital	34(30.4)
	Private Hospital	78(69.6)
	<b>ICUs</b>	
	General Surgery and Cardiovascular Surgery ICUs	65(58)
	* Other ICUs	47(42)
Having education and/or patient care experience in AWS	<b>AWS and nursing care education</b>	
	Has education	34(30.4)
	No education	78(69.6)
	<b>Nursing care experience in patients with AWS</b>	
	Has experience	35(31.3)
	No experience	77(68.8)

\*Other; Coronary, Pediatric, Neonatal Intensive Care Units (NICUs)

*p* = .005), and had nursing care experience in patients with AWS (*z* = -3.832; *p* < .001) were statistically significantly higher. No statistically significant difference was found in the AWS awareness levels of nurses according to age, gender, educational level, and marital status (*p* > .05) (Table 3).

According to the GLM, the only independent variable that increased the AWS awareness level of nurses was the status of

**Table 2***Awareness of intensive care nurses about AWS diagnosis, treatment, and nursing care*

Information items (N=112)	Level of awareness
	n(%)
1. Awareness of the CIWA-Ar scale	15(13.4)
2. Awareness of using the Richmond scale in patient follow-up in AWS	15(13.4)
3. Awareness of using the Ramsay scale in patient follow-up in AWS	13(11.6)
4. Evaluation of patient history related to AWS in the nursing admission and diagnosis phase	87(77.7)
5. Awareness of daily alcohol intake, which is a risk factor for men and women	32(28.6)
6. Awareness of the male gender as a risk factor	59(52.7)
7. Awareness about the fact that delirium, anxiety, irritability, and depression symptoms may be associated with AWS	85(75.9)
8. Awareness of the risk of death due to withdrawal	77(68.8)
9. Awareness of how long will it take for withdrawal signs and symptoms to appear after the last alcohol intake	65(58)
10. Awareness of signs and symptoms of mild withdrawal	73(65.2)
11. Awareness of the signs and symptoms of moderate withdrawal	59(52.7)
12. Awareness of the signs and symptoms of severe withdrawal	60(53.6)
13. Awareness of pharmacological agents used in the treatment	52(46.4)
14. Awareness of the requirements for the prevention of early complications	65(58)
15. Awareness of the requirements for appropriate additional environmental precautions and monitoring against the possibility of suicide attempts, falls, and aggression during nursing care	73(65.2)
16. Awareness of additional measures regarding code blue, crew and equipment organization	75(67)
17. Awareness of independent nursing interventions in reducing environmental stimuli	57(50.9)
18. Awareness of the isolation application	28(25)
19. Awareness of independent nursing interventions for anxiety treatment	50(44.6)
20. Awareness of nursing roles and responsibilities in discharge planning	71(63.4)
AWS awareness total score, mean±SD/median(IQR)	9.92±5.55/11(5-15)
AWS awareness level (%) total score, mean±SD/median (IQR)	0.496±0.277/0.55(0.25-0.75)
Skewness	-0.364
Kurtosis	-1.071
Kolmogorov – Smirnov test	statistic= 0.137; p<0.001
KR-20	0.908

Note: Total knowledge percentage value was obtained by dividing the total item score by the total number of items. SD= Standard deviation, IQR= Inter Quantile Range

having nursing care experience in patients with AWS ( $\beta = 0.144$ ;  $z = 2.448$ ;  $p = .016$ ) (Table 4).

## Discussion

The prevalence of AWS among patients in surgical ICUs is a significant concern, affecting a substantial proportion of hospitalized individuals, with estimates ranging from 8% to 40% in surgical settings (Seshadri et al., 2022). Early diagnosis of AWS is critical, as it can reduce the associated mortality rate, which is reported to be between 1% and 5% (Kattimani & Bharadwaj, 2013; Mainerova et al., 2015; Leuenberger et al., 2017). The revised version of CIWA-Ar is a widely utilized tool for the early diagnosis and risk assessment of AWS. However, its effective

application requires nurses to possess adequate knowledge and experience, as well as collaboration among healthcare team members (Kattimani & Bharadwaj, 2013; Davis et al., 2018). The CIWA-Ar scale may not be suitable for patients with cognitive impairments or those unable to communicate, highlighting the potential benefits of alternative assessment tools as discussed by Knight and Lappalainen (2017). Furthermore, there is a significant need to enhance the competencies of nurses in managing patients with AWS, as evidenced by findings that only 30% of nurses have received specific training in this area, which could negatively impact patient outcomes (Elliott, 2019; Cucci et al., 2022). This knowledge gap underscores the challenges faced by less experienced nurses in intensive care settings and their potential effect on the quality of patient care (Arpag & Kanan, 2019).

**Table 3**  
AWS awareness level of nurses according to their descriptive characteristics

Participant characteristics	n	AWS awareness level (%) Median(IQR)	Test value	P
<b>Sex</b>			-0.102 <sup>a</sup>	.919
Male	38	0.58(0.15-0.76)		
Female	74	0.55(0.29-0.75)		
<b>Age</b>			-0.067 <sup>a</sup>	.947
25 years and under	72	0.58(0.30-0.75)		
26 years and over	40	0.53(0.25-0.79)		
<b>Educational status</b>			0.830 <sup>b</sup>	.660
Health Vocational High School	33	0.60(0.33-0.75)		
Associate degree	44	0.55(0.21-0.75)		
Bachelor and above	35	0.60(0.25-0.75)		
<b>Marital status</b>			-0.093 <sup>a</sup>	.926
Single	95	0.60(0.25-0.75)		
Married	17	0.45(0.33-0.75)		
<b>Years of experience in ICUs</b>			8.198 <sup>b</sup>	.017*
0 - 1 year <sup>1</sup>	55	0.50(0.20-0.70)		<i>dif**3&gt;1,2</i>
2 - 4 years <sup>2</sup>	24	0.53(0.21-0.70)		
5 years and more <sup>3</sup>	33	0.65(0.45-0.80)		
<b>Characteristics of the institution</b>			-0.244 <sup>a</sup>	.807
Public Hospital	34	0.58(0.20-0.75)		
Private Hospital	78	0.55(0.30-0.75)		
<b>ICUs</b>			-2.311 <sup>a</sup>	.011*
General Surgery and Cardiovascular Surgery ICUs	65	0.60(0.25-0.80)		
*** Other ICUs	47	0.45(0.25-0.65)		
<b>AWS and nursing care education</b>			-2.800 <sup>a</sup>	.005*
Has education	34	0.68(0.36-0.85)		
No education	78	0.50(0.25-0.65)		
<b>Nursing care experience in patients with AWS</b>			-3.832 <sup>a</sup>	<.001
Has experience	35	0.75(0.55-0.80)		
No experience	77	0.45(0.20-0.65)		

\*p<0.05; a(Z), Mann-Whitney U testi; b(K-Wχ<sup>2</sup>), Kruskal-Wallis test; \*\* Dunnett's multiple comparison test; IQR, Inter Quantile Range. \*\*\*Other; Coronary, Pediatric, Neonatal Intensive Care Units (NICUs)

The demographic profile of participating nurses reveals that, while 59% have more than 2 years of professional experience, only a small fraction has received formal training on AWS. This aligns with literature indicating that many nurses in critical care settings may struggle to recognize the signs and symptoms of AWS due to the high acuity and complexity of the patients they care for (Elliott, 2019).

Furthermore, the study shows that a significant proportion of nurses lack direct experience in caring for AWS patients. This is concerning, as studies have shown that 33% of patients with alcohol use disorders may develop severe AWS, necessitating

rapid and effective nursing interventions (Elliott, 2019; Cucci et al., 2022). The urgency of critical care hospitalizations often leads to the abrupt cessation of alcohol intake, increasing the risk of severe withdrawal symptoms such as DT, which can be life-threatening (Vigouroux et al., 2021). The lack of experience among nurses may hinder their ability to implement evidence-based practices, such as using validated assessment tools like the CIWA-Ar, which are crucial for monitoring withdrawal severity and guiding treatment (Cucci et al., 2022).

Considering these findings, it is imperative to develop educational initiatives and training programs focused on AWS within nursing

**Table 4**  
Independent variables affecting AWS awareness level (Generalized Linear Model analysis results)

Variables	$\beta$	SE	95% CI		z	P
			Lower	Upper		
(Intercept)	0.541	0.030	0.481	0.600	17.848	<.001
ICUs (General Surgery and Cardiovascular Surgery ICUs vs Other <sup>***</sup> )	0.062	0.051	-0.038	0.162	1.210	.229
AWS and nursing care education (yes vs no <sup>**</sup> )	0.079	0.056	-0.031	0.190	1.409	.162
Nursing care experience in patients with AWS (yes vs no <sup>**</sup> )	0.144	0.059	0.029	0.260	2.448	.016*
<b>Years of experience in ICUs</b>						
2-4 vs 0-1 year <sup>**</sup>	0.027	0.065	-0.100	0.153	0.410	.683
$\geq 5$ year vs 0-1 year <sup>**</sup>	0.098	0.059	-0.018	0.215	1.653	.101
<b>GLM summary</b>			<b>Model type=Linear</b>			
			<b>Link Function= Identity</b>			
			<b>R-squared (R<sup>2</sup>)=0.175</b>			
<b>Dependent variable: AWS awareness</b>						

\*p<0.05; \*\* Reference value; CI, Confidence Interval;  $\beta$ , Regression estimation. GLM: Generalized Linear Model \*\*\*Other; Coronary, Pediatric, Neonatal Intensive Care Units (NICUs)

curricula and continuing education. By increasing nurses' awareness and competence in this area, healthcare facilities can better prepare their staff to manage AWS effectively, ultimately leading to improved patient outcomes and reduced healthcare costs associated with complications from untreated withdrawal (Elliott, 2019; Seshadri et al., 2022). Integrating standardized protocols and assessment tools into nursing practice is essential to ensure that patients at risk of AWS receive timely and appropriate care, thereby minimizing the potential for adverse outcomes associated with this syndrome.

A retrospective study conducted on patients in the Department of Otorhinolaryngology and Maxillofacial Surgery in Switzerland found that nurses performed only 50% of the necessary evaluations, despite their success in screening practices (Leuenberger et al., 2017). The mean score of 9.92 out of 20 on the AWS awareness questionnaire highlights a significant knowledge gap that could negatively affect patient care. With only 30% of nurses having received training on AWS, their low level of awareness aligns with other studies that emphasize the challenges nurses face in recognizing and managing AWS. Research indicates that the urgency of care in critical settings often leads to incomplete assessments and misinterpretation of withdrawal symptoms, which can result in serious complications such as DT if not promptly addressed (Elliott, 2019; Haspolat & Köprülü, 2020; Vigouroux et al., 2021).

The highest awareness item (77.7%) was related to assessing the patient's history of AWS at the admission and diagnosis stages, underscoring the importance of comprehensive patient assessments. This finding is consistent with the literature, which emphasizes that focused nursing assessments are crucial for identifying patients at risk of AWS, particularly in high-acuity settings where alcohol consumption may be abruptly discontinued (Elliott, 2019; Cucci et al., 2022). In contrast, the lowest awareness item (11.6%) was related to the use of the Ramsay scale for patient follow-up in AWS, indicating a critical area for improvement. Although the

Ramsay scale is not specific to AWS, it is a validated tool for assessing sedation levels, which can be important in managing patients experiencing withdrawal symptoms (Cucci et al., 2022).

These findings have significant implications. Considering that AWS can result in significant morbidity and mortality, and patients with alcohol use disorders are at risk of progressing to severe AWS, it is crucial to enhance education and awareness among nursing staff to mitigate these risks (Elliott, 2019; Vigouroux et al., 2021). A lack of awareness and education may hinder nurses' ability to implement evidence-based interventions, such as using the CIWA-Ar scale, which is crucial for monitoring withdrawal severity and guiding treatment decisions (Elliott, 2019). In conclusion, this study emphasizes the critical need for advanced training programs on AWS specifically tailored for nurses working in intensive care settings. Recognizing the barriers and gaps in knowledge and awareness has the potential to improve the quality of care for patients at risk for AWS, leading to improved patient outcomes and a reduction in health care complications associated with the syndrome.

The study's findings provide valuable insights into the awareness of AWS among surgical and medical intensive care nurses, particularly concerning their professional experience and education. The statistically significant difference in AWS awareness levels based on professional experience (K-W $\chi^2 = 8.198$ ;  $p = .017$ ) suggests that nurses with 5 or more years of experience have a greater understanding of AWS. To support the statement that increased clinical exposure is associated with improved knowledge and skills in managing complex conditions like AWS, several studies in the literature discuss how professional experience enhances critical care nurses' abilities. For instance, O'Connell et al. (2020) highlight that nurses with more years of experience in intensive care settings demonstrate a better understanding of and ability to manage AWS. Additionally, a study by Sawyer et al. (2018) found that experienced nurses were more adept at recognizing early signs of AWS, leading to timely interventions

and improved patient outcomes. These references align with the findings of this study, where nurses with 5 or more years of experience exhibited a higher level of awareness and understanding of AWS.

Despite differences in patient characteristics, patients with AWS and substance addiction may be encountered in all ICUs and other units (Mirijello et al., 2015). The study's results indicate that nurses working in general surgery or cardiovascular surgery ICUs, who have been trained in AWS and have experience caring for patients with AWS, demonstrated significantly higher levels of awareness ( $z = -2.311; p = .011; z = -2.800; p = .005; z = -3.832; p < .001$ ). This emphasizes the importance of targeted education and practical experience in developing nursing competencies.

The lack of knowledge identified in ICU nurses, who are more likely to encounter patients with AWS, suggests that further research and in-service training on AWS awareness would be beneficial (Berl et al., 2015; Mirijello et al., 2015). The finding that the only independent variable significantly associated with increased AWS awareness was nursing care experience with AWS patients ( $\beta = 0.144; z = 2.448; p = .016$ ) further emphasizes the critical role of hands-on experience in developing clinical expertise. This aligns with studies highlighting the challenges nurses face in recognizing and managing AWS, particularly in high-acuity settings where patients may present with overlapping symptoms from other medical conditions (Elliott, 2019; Vigouroux et al., 2021).

Interestingly, there were no statistically significant differences in AWS awareness according to age, gender, educational level, and marital status ( $p > .05$ ), suggesting that these demographic factors may not play a significant role in shaping nurses' knowledge about AWS. Instead, practical experience and specialized training appear to be more effective in developing the skills necessary to care for patients with alcohol withdrawal.

These findings have significant implications for nursing education and practice, highlighting the necessity of implementing comprehensive training programs focused on the recognition and management of AWS, particularly given its high prevalence in ICUs. Such programs should encompass the clinical aspects of AWS and bridge the gap between theoretical knowledge and practical application through simulation-based learning and mentorship opportunities. Considering that current nursing education programs may fall short in adequately preparing nurses to care for patients with severe AWS, the integration of simulation-based training could enhance nurses' ability to deliver high-quality care and improve patient safety (Sharoff, 2013; Gates & Brown, 2017). This study highlights the critical importance of evaluating patients for AWS upon admission to reduce mortality rates. It underscores the need for ICUs to adopt and utilize appropriate measurement tools for assessing AWS and recommends comprehensive training for nurses on their use. The development of an alcohol withdrawal care bundle and its integration into nursing education and in-service training programs are essential to improving the diagnosis, follow-up, and care of AWS patients. Moreover, the study identifies that both experience and education significantly influence nurses' awareness and patient care quality concerning AWS, emphasizing the importance of retaining experienced nurses in ICUs to maintain high standards of care. As such, decision-makers should implement strategies to

reduce nurse turnover in ICUs, ensuring that the valuable expertise of seasoned nurses is preserved.

### Study Limitations

The lack of a similar descriptive study in the literature is the strength of this study. The limited aspect of the study is that the results can only be evaluated within the context of group characteristics and cannot be generalized.

**Data Availability Statement:** The data that support the findings of this study are available on request from the corresponding author.

**Ethics Committee Approval:** This study was approved by the Ethics Committee of İstanbul Yeni Yüzyıl University University Science, Social and Non-Interventional Health Sciences Research Ethics Committee (Approval no.: 2021/11-732 Date: 01.11.2021).

**Informed Consent:** Written informed consent was obtained from the intensive care nurses who agreed to take part in the study.

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

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