



ORIGINAL ARTICLE

Examining Nursing Students' Levels of Diagnosing Symptoms and Risks of Child Abuse and Neglect

Hemşirelik Öğrencilerinin Çocuk İstismarı ve İhmalinin Belirti ve Risklerini Tanılama Düzeylerinin İncelenmesi

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Abstract

Introduction: Nurses have important ethical and legal responsibilities regarding the prevention, diagnosis, and treatment of child abuse and neglect (CAN). This study was conducted to examine nursing students' levels of diagnosing the symptoms and risks of CAN.

Methods: This descriptive study was conducted with 324 nursing students studying at the nursing faculty of a university between April and May 2019. A "Student Information Form" and the "Scale of Diagnosing Symptoms and Risks of CAN" were used for data collection.

Results: Participating in the study the mean age was 20.3 ± 1.5 . There was a statistically significant difference between being a 4th grader, receiving training on CAN, encountering a case or suspicion of CAN, and being aged 20 and over, and the mean score on the scale of diagnosing symptoms and risks of CAN ($p < 0.05$).

Discussion and Conclusion: In this study, it was determined that the level of knowledge of nursing students about defining the symptoms and risks of CAN was not sufficient. It is seen that receiving education on CAN positively affects the ability to identify the symptoms and risks of CAN.

Keywords: Child abuse; Child neglect; Nursing students

Childhood is a period in which growth, development, and learning continue rapidly. Any traumatic event experienced in childhood can have a wide range of consequences that can continue throughout life.^[1–3] To progress in societies, children who represent the future of these so-

cieties require protection and love to develop physically, mentally, and socially.^[2,4,5] Undoubtedly, one of the greatest traumatic events for children is child abuse and neglect (CAN).^[6] CAN as defined by the World Health Organization (WHO) refers to "harmful behaviours which can be the con-

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sequences of physical, emotional, sexual abuse as well as neglect. These actions have a negative impact on the health, growth, and development of children under the age of 18 years, and the sense of trust or relationships of children can be negatively affected." Especially in recent years, efforts have been made to protect and strengthen the interests of children with many legal and international regulations.^[3,7,8] Despite this, cases of abuse and neglect have become a global problem that continues to exist increasingly from the past to the present.^[9–18] According to the research on child abuse and domestic violence conducted by UNICEF in Türkiye, it was determined that emotional abuse, physical abuse, and sexual abuse were seen at rates of 51%, 43%, and 3% respectively, in children aged 7–18. According to the United States Child Maltreatment Report, the number of CAN cases recorded in 2020 was 618,000. It was reported that 76.1% of them were victims of neglect, 16.5% of them were victims of physical abuse, and 9.4% of them were victims of sexual abuse.^[19,20]

According to the relevant literature and reports, cases of CAN can be seen at all economic levels, ethnic origins, and familial situations.^[21] The WHO has classified the risk situations as familial, child originated, social, and parent originated. However, there are some situations where a child may be at higher risk of abuse and neglect. These include cultural differences, inadequate legal regulations, poverty, single-parent or step-parents, parents aged under 18, parents with low education levels, and parents who were abused or neglected or experienced violence when they were children.^[22–24] Furthermore, children living in a house with domestic violence, children born out of wedlock, the child with unexpected gender, premature children, and children with congenital anomalies or mental retardation are also at risk of abuse and neglect due to their parents the increased stress level.^[6,21,24,25] As a result of increased stress on parents, closed and long-term repetitive abuse and neglect may occur.^[26,27] Repetitive abuse and neglect cases can result in more serious injury or even death.^[28] A series of negative long-term developmental problems may occur in children who have been abused and neglected in their 1st years of life.^[15,29] For this reason, it is essential to detect cases of abuse and neglect as early as possible to protect and support the child.^[6]

The process of diagnosing and managing CAN is a difficult task and should be approached with a multidisciplinary method, including medical and legal procedures. It is stated in the literature that there are difficulties in the diagnosis and notification of CAN.^[30] Nurses play an important role in the prevention, diagnosis, and treatment of CAN, and they have significant ethical, moral, and legal responsibilities at

this point. Moreover, a multidisciplinary approach must be addressed for performing these responsibilities successfully.^[31–34] According to the literature, there are deficiencies in the knowledge and skills of all health personnel, including nurses, regarding the diagnosis and reporting of CAN.^[33,35] The WHO has emphasized that nurses have important responsibilities such as being knowledgeable about the developmental periods of children, detecting abnormal situations during growth and development, knowing the procedures to be applied in abnormal cases, and providing necessary training to families and individuals in the prevention of CAN.^[4,5,36,37] For this reason, it is of great importance for nursing students, who will be the nurses of the future, to be able to diagnose the signs and symptoms of CAN and know the risk factors that play a role in CAN.^[7,35,38] This study aimed to examine nursing students' levels of diagnosing the symptoms and risks of CAN.

Materials and Methods

Design and Participants

This descriptive study was conducted between April and May 2019 with nursing students studying at a nursing faculty in Ankara, the capital city of Türkiye. The population of the study consisted of 467 students (1st, 2nd, and 4th grade) pursuing their education at the nursing faculty in the 2018-2019 academic year. Since no student was admitted to the school for one semester in 2016, there were no 3rd grade students. Since the aim was to reach the entire population, sample calculation was not made. The research was carried out with 324 students who willingly volunteered to take part in the study.

Data Collection Tools

For data collection, an 11-question "Student Information Form," which was created by the researchers in line with the literature^[4,12,21–23,26,32,35] and the 67-question "Scale of Diagnosing Symptoms and Risks of CAN," which was developed by Uysal in 1998.^[39] The scale consists of 6 subscales and has a 5-point Likert-type ranking system. On the scale, 19 items measure the physical symptoms of abuse in the child (PSAC); 7 items measure the symptoms of neglect in the child (SNIC); 15 items measure the behavioral symptoms of abuse in the child (BSAC); 13 items measure the parental characteristics prone to abuse and neglect (PCPAN); 5 items measure the characteristics of children prone to abuse and neglect (CCPAN); 8 items measure the familial characteristics in CAN (FCCAN). Questions 3, 5, 8, 10, 12, 14, 16, 27, 28, 30, 32, 34, 41, 42, 46, 49, 54, 56, 59, 61, and 63 are reverse scored. Mean scores of the items were calculated.

Table 1. Descriptive characteristics of nursing students

	Frequency (n)	Percentage (%)
Gender		
Female	291	89.8
Male	33	10.2
Age group		
<20	114	35.2
20 and over	210	64.8
Grade		
1 st grade	113	34.9
2 nd grade	102	31.5
4 th grade	109	33.6
Do you know the concept of child abuse and neglect?		
Yes	319	98.5
No	5	1.5
Have you received training on child abuse and neglect?		
Yes	97	29.9
No	227	70.1
Have you ever encountered a case or suspicion of child abuse and neglect?		
Yes	79	24.4
No	245	75.6
Can you define parental characteristics prone to child abuse and neglect?		
Yes	244	75.3
No	80	24.7
Do you know the characteristics of the child prone to abuse and neglect?		
Yes	231	71.3
No	93	28.7
Can you diagnose the symptoms of child abuse in the child?		
Yes	248	76.5
No	76	23.5
Can you diagnose the symptoms of child neglect in the child?		
Yes	244	75.3
No	80	24.7
Do you find your knowledge about child abuse and neglect sufficient?		
Yes	68	21
No	256	79
Age, Mean±SD; Median (min–max)	20.3±1.5	20 (18–28)

SD: Standard deviation; Min: Minimum; Max: Maximum.

A mean score toward 5 shows that the answer is correct and a decrease from 3 indicates that the answer is wrong. The Cronbach alpha value of the scale is 0.924. In this study, the Cronbach alpha value was found to be 0.904.

In data collection, one-to-one interviews were conducted with the volunteer students who participated in the study, the study and its purpose were explained, they were asked whether they wanted to participate in the study, and data collection forms were applied after obtaining voluntary consent from those who wanted to participate. Data collection took 15–20 minute.

Data Analytic Strategy

The data were analyzed using the SPSS version 23. The conformity of data to a normal distribution was assessed with the Shapiro–Wilk and Kolmogorov–Smirnov tests. To compare the data with the normal distribution, the Independent Samples t-test was utilized, while the Mann–Whitney U test was utilized for comparing data that did not match the normal distribution. The Kruskal–Wallis test was utilized for the comparison of non-normally distributed data across three or more groups and the Dunn’s test was utilized for the examination of multiple comparisons. Results

Table 2. Distribution of overall and subscale scores on the Scale of Diagnosing Symptoms and Risks of Child Abuse and Neglect

	Mean	SD	Median	Minimum	Maximum
Overall score	3.81	0.41	3.77	3	5
PSAC	3.92	0.450	3.95	3	5
SNIC	4.14	0.598	4.14	2	5
BSAC	3.83	0.467	3.87	3	5
PCPAN	3.65	0.561	3.58	2	5
CCPAN	3.39	0.611	3.33	1	5
FCCAN	3.74	0.698	3.63	2	5

SD: Standard deviation; PSAC: Physical symptoms of abuse in the child; SNIC: Symptoms of neglect in the child; BSAC: Behavioral symptoms of abuse in the child; PCPAN: Parental characteristics prone to abuse and neglect; CCPAN: Characteristics of children prone to abuse and neglect; FCCAN: Familial characteristics in child abuse and neglect.

were presented as frequency (percentage) for categorical variables and mean±standard deviation and median (min–max) for quantitative data. The statistical significance level was taken as $p<0.05$.

Statistical Analysis Process

The statistical analysis process was performed using SPSS Statistics for Windows, Version 23.0 (IBM SPSS Statistics for Windows, Version 23.0. Armonk, NY: IBM Corp). Data entry was made by the researchers. Statistics analyses were made with a statistician.

Ethical Considerations

The study obtained approval from the ethics committee of a university (Meeting number: 2019/08 Project/Decision Number: 19/135, 46418926). The procedures accepted in this study adhere to the principles stated in the Declaration of Helsinki. Before their participation, informed consent was obtained from all nursing students who were included in the study.

Results

Of the students participating in the study, 89.8% were female and the rate of those aged 20 and over was 64.8%. The mean age of the students was 20.3 ± 1.5 . The lowest age was 18 years and the highest age was 28. Of the students participating in the study, 34.9% were 1st graders; 31.5% were 2nd graders; 33.6% were 4th grade students 98.5% of the students knew the concept of CAN and 29.9% received training on CAN. The rate of those who had previously encountered a case or suspicion of CAN was 24.4%. The rate of those who found their knowledge of CAN sufficient was 21% (Table 1).

In the study, the mean overall scale score was 3.81 ± 0.41 ; the lowest score obtained from the scale was 3 and the highest score was 5. In terms of subscales, the mean score

was 3.92 ± 0.450 for PSAC, 4.14 ± 0.598 for SNIC, 3.83 ± 0.467 for BSAC, 3.65 ± 0.56 for PCPAN, 3.39 ± 0.611 for CCPAN, and 3.74 ± 0.698 for FCCAN (Table 2).

According to the comparison of the overall score and subscale scores according to the variables, there was no difference between gender and the median values of the overall score and subscale scores ($p>0.050$). There was an important variety between the median values of the overall scale scores according to the grades of the students ($p<0.001$) and this difference was due to the fact that the median score of 4th grade students (3.99) was significantly higher. There was an important variety between the median scores of the students on SNIC ($p=0.001$), BSAC ($p<0.001$), PCPAN ($p<0.001$), and FCCAN ($p<0.001$) subscales according to their grades and the median scores of the 4th grade students were significantly higher than those of 1st and 2nd grades. There was a significant difference between those who had received training on CAN and the median values of the overall scale score ($p=0.012$) and PCCAN ($p=0.006$) and CCPAN ($p<0.001$) subscale scores. Those who had received training had higher scores than those who had not. There was a significant difference between the status of previously encountering cases or suspicion of CAN and the median score on the FCCAN subscale ($p=0.028$). There was also a statistically significant difference between the overall scale scores according to age groups ($p=0.008$) and the median overall scale score was 3.84 for those aged 20 and over. There was an important variety between the median scores on the SNIC ($p=0.001$), PCPAN ($p=0.001$), and CCPAN ($p=0.029$) subscales according to age groups ($p=0.001$). Those aged 20 and over had higher subscale scores (Table 3).

Discussion

This study was conducted to examine the levels of diagnosing the symptoms and risks of CAN among nursing students. Only 29.9% of the student nurses participating in the study

Table 3. Comparison of the overall score and subscale scores according to variables

	Overall score Mean±SD Median (Min–Max)	PSAC Mean±SD Median (Min–Max)	SNIC Mean±SD Median (Min–Max)	BSAC Mean±SD Median (Min–Max)	PCPAN Mean±SD Median (Min–Max)	CCPAN Mean±SD Median (Min–Max)	FCCAN Mean±SD Median (Min–Max)
Gender							
Female	3.81±0.41 3.76 (3–5)	3.92±0.46 3.95 (3–5)	4.15±0.60 4.14 (2–5)	3.83±0.47 3.87 (3–5)	3.66±0.56 3.58 (2–5)	3.41±0.61 3.33 (1–5)	3.74±0.69 3.63 (2–5)
Male	3.80±0.427 3.81 (3–5)	3.96±0.49 3.90 (3–5)	4.13±0.56 4.14 (3–5)	3.84±0.44 3.93 (3–5)	3.63±0.6 3.67 (3–5)	3.28±0.66 3.5 (1–4)	3.72±0.75 3.63 (2–5)
Test statistic	4731.5	4966.5	4731	4776.5	4690	4446.5	4685
p*	0.891	0.746	0.890	0.961	0.827	0.484	0.819
Age							
<20	3.73±0.35 3.69 (3–5)	3.90±0.45 3.89 (3–5)	4±0.59 4 (3–5)	3.77±0.45 3.8 (3–5)	3.51±0.49 3.5 (2–5)	3.31±0.57 3.17 (2–5)	3.64±0.59 3.63 (2–5)
20 and over	3.85±0.43 3.84 (3–5)	3.94±0.45 3.95 (3–5)	4.22±0.59 4.29 (2–5)	3.87±0.47 3.87 (3–5)	3.73±0.58 3.67 (3–5)	3.44±0.63 3.5 (1–5)	3.79±0.75 3.75 (2–5)
Test statistic	14147	12685.5	14707.5	10533.5	9361	10215	10660.5
p*	0.008	0.407	0.001	0.074	0.001	0.029	0.103
Grade							
1 st grade	3.68±0.34 3.66 (3–5) ^b	3.86±0.46 3.84 (3–5)	4±0.58 4 (2–5) ^a	3.7±0.43 3.73 (3–5) ^a	3.47±0.44 3.42 (2–5) ^a	3.26±0.49 3.17 (2–5) ^a	3.55±0.56 3.63 (2–5) ^a
2 nd grade	3.79±0.40 3.69 (3–5) ^b	3.94±0.45 4 (3–5)	4.17±0.61 4.21 (3–5) ^{ab}	3.84±0.44 3.87 (3–5) ^{ab}	3.61±0.58 3.58 (3–5) ^a	3.21±0.67 3 (1–5) ^a	3.69±0.74 3.5 (2–5) ^a
4 th grade	3.96±0.43 3.99 (3–5) ^a	3.97±0.47 3.95 (3–5)	4.28±0.8 4.29 (3–5) ^b	3.96±0.48 4 (3–5) ^b	3.89±0.58 3.92 (3–5) ^b	3.7±0.55 3.67 (3–5) ^b	3.98±0.73 4 (3–5) ^b
Test statistic	26.552	3.596	14.256	18.278	29.423	46.026	18.62
p**	<0.001	0.166	0.001	<0.001	<0.001	<0.001	<0.001
Have you received training on child abuse and neglect?							
Yes	3.89±0.41 3.88 (3–5)	3.95±0.45 4 (3–5)	4.21±0.92 4.29 (3–5)	3.89±0.45 3.93 (3–5)	3.78±0.55 3.75 (3–5)	3.57±0.56 3.5 (3–5)	3.87±0.73 3.88 (3–5)
No	3.77±0.41 3.70 (3–5)	3.92±0.47 3.91 (3–5)	4.12±0.61 4.14 (2–5)	3.81±0.47 3.8 (3–5)	3.6±0.56 3.5 (2–5)	3.32±0.62 3.33 (1–5)	3.68±0.68 3.63 (2–5)
Test statistic	9074.5	10355.5	10046.5	9876.5	8897.5	8238	9526
p*	0.012	0.397	0.210	0.142	0.006	<0.001	0.054
Have you ever encountered a case or suspicion of child abuse and neglect?							
Yes	3.86±0.45 3.81 (3–5)	3.94±0.55 3.95 (3–5)	4.22±0.6 4.29 (3–5)	3.88±0.45 3.87 (3–5)	3.73±0.59 3.67 (3–5)	3.39±0.71 3.33 (1–5)	3.88±0.75 4 (2–5)
No	3.79±0.40 3.76 (3–5)	3.92±0.43 3.89 (3–5)	4.12±0.6 4.14 (2–5)	3.81±0.47 3.8 (3–5)	3.63±0.55 3.5 (2–5)	3.39±0.58 3.33 (1–5)	3.69±0.68 3.63 (2–5)
Test statistic	8778.5	0.334	8745	8934.5	8666.5	9521	8091.5
p	0.214*	0.739***	0.196*	0.304*	0.162*	0.828*	0.028*

SD: Standard deviation; Min: Minimum; Max: Maximum; *: Mann Whitney U Test; **: Kruskal Wallis Test; ***: Independent Samples t Test; PSAC: Physical symptoms of abuse in the child; SNIC: Symptoms of neglect in the child; BSAC: Behavioral symptoms of abuse in the child; PCPAN: Parental characteristics prone to abuse and neglect; CCPAN: Characteristics of children prone to abuse and neglect; FCCAN: Familial characteristics in child abuse and neglect; a, b: There is no difference between groups with the same letter.

stated that they received training on CAN. In the study conducted by Burç and Güdücü^[4] in 2015 with nurses, 52.5% of the nurses received training on CAN during their education; in the study conducted by Salami and Alhalal^[15] in 2019 with nurses, only 35.5% of the nurses were reported to re-

ceive in-service training on CAN; in the study conducted by Uysal et al.^[34] in 2022 with to determine the level of awareness of university students on CAN, it was determined that 30.5% of the students received training on child abuse; in the study conducted by Hae et al.^[40] with nurses in 2017, it

was stated that 90.3% of the nurses did not receive training on CAN. Studies have reported results that are similar to those in the present study. This demonstrates the necessity to give more weight to the subjects related to CAN in nursing curricula. It is extremely important for nursing students, who will practice their profession in the future, to receive training on this subject before starting their professional life so that they can diagnose CAN early due to the possibility of encountering a case of CAN, that legal notifications can be made, and that necessary precautions can be taken.

The rate of nursing students who found their knowledge of CAN sufficient was determined as 21%. In the study conducted by Türk et al.^[27] in 2021, approximately 90% of the participants stated that they needed more information on CAN; in the study conducted by Uysal et al.^[34] with university students in 2022, 72.9% of the students stated that they wanted the inclusion of courses on CAN to the curriculum. In the study conducted by Sathiadas et al.^[41] in 2018 to examine the knowledge, attitudes, practices, and behaviors of health professionals regarding CAN, it was reported that 65.8% of the participants were not satisfied with their knowledge; in the study carried out by Ben Yehuda et al.^[42] with health professionals from different groups in 2020, it was reported that there were educational needs on sexual abuse and neglect. Likewise, in the study conducted by Lee and Chou^[43] in 2017, it was reported that the training given to nurses on CAN improved the reporting of CAN cases and effectively increased nurses' confidence in the diagnosis of cases. The result of the study is consistent with the results reported in the literature. It is thought that it will be necessary and beneficial to include more subjects related to CAN in the curriculum and organize seminars, conferences, and extracurricular training to meet the information needs of students and increase their awareness of CAN.

The mean overall score of the students participating in the study on the scale was 3.81 ± 0.41 ; the lowest score obtained from the scale was 3 and the highest score was 5. In the study of Özbey et al.^[21] in 2018, the score was reported as 3.7 ± 0.3 ; in the study of Türk et al.^[27] in 2021, the score was reported as 3.61 ± 0.34 ; in the study of conducted by Kaya and Köse^[28] with students studying at the faculty of health sciences in 2020, the total mean score obtained from the scale was reported as 3.57 ± 0.32 . The score was reported as 3.55 ± 0.29 in the study conducted by Erkut et al.^[35] in 2021 with nursing students, 3.63 ± 0.34 in the study conducted by Seferoğlu et al.^[36] in 2019, and 2.36 ± 0.50 in the study of Bağdaş and Bozdağ^[44] in 2018. The results of the study are consistent with the literature. It was concluded that the students had an inadequate level of knowledge about CAN.

Although 75.3% of the nursing students taking part in the study stated that they could define the parental characteristics prone to CAN (PCPAN) and 71.3% stated that they could diagnose the CCPAN, their mean score was 3.65 ± 0.561 on the PCPAN subscale and 3.39 ± 0.611 on the CCPAN subscale. Although they stated that they could diagnose PCPAN and CCPAN, they could not get sufficient scores. In the study of Kartal and Bayraktar^[26] in 2020; the mean score on the PCPAN subscale was 3.17 ± 0.40 and the mean score on the CCPAN subscale was 3.67 ± 0.63 ; in the study of Erkut et al.^[35] in 2021, the mean score was 3.46 ± 0.40 on the PCPAN subscale and 2.96 ± 0.38 on the CCPAN subscale; in the study of Seferoğlu et al.^[36] in 2019, the mean score was 3.42 ± 0.45 on the PCPAN subscale and 3.21 ± 0.54 on the CCPAN subscale. Similarly, in the literature, it was seen that the level of students to diagnose parental characteristics prone to CAN (PCPAN) and characteristics of children prone to abuse and neglect (CCPAN) was insufficient.

When the gender of the nursing students participating in the study and their scores on the overall scale and subscales were examined, no significant difference was determined between them. In the study of Erkut et al.^[35] in 2021, it was reported that there was no significant difference between the subscale scores, except for the overall score and the score on the SNIC subscale, and gender. This result is similar to the finding in this study. In the study conducted by Türk et al.^[27] in 2021, the mean overall scale score of women and their scores on the PSAC, SNIC, BSAC, and FCCAN subscales were higher than the scores of men in terms of gender variable. Likewise, in the study of Kaya and Köse^[28] in 2020, the mean score of all female participants was found to be higher than that of the male participants. In the study of Seferoğlu et al.^[36] in 2019, it was reported that female students had higher scores on the overall scale and subscales. In the study conducted by Ok Ha^[45] in 2018 to examine the perceptions of child abuse among nursing students in South Korea and the factors affecting these perceptions, it was reported that the score of the female students on the awareness scale was higher than that of male students. Different results in studies may be due to the difference in sample groups.

In our study, the scores of the 4th-grade students on the overall scale and SNIC, BSAC, PCPAN, CCPAN, and FCCAN subscales were found to be higher than the scores of students in other grades. In the study of Seferoğlu et al.^[36] in 2019, it was stated that 4th-grade students had higher mean scores on the BSAC, CCPAN, and FCCAN subscales and the overall scale. In the study of Poreddi et al.^[46] in 2016,

it was determined that the knowledge and attitude of the 4th grade students were better compared to the 2nd grade students. In line with the results of the study, the findings reported in the literature demonstrate that the education given starting from the 1st grade to the 4th grade significantly increases the awareness of the students on CAN.

The mean scores of the nursing students who had received training on CAN were higher compared to those who had not. In the study of Özbey et al.^[21] in 2018, it was revealed that those who had received training on CAN had higher levels of knowledge; in the study of Türk et al.^[27] in 2021, it was reported that those who had received training on CAN had higher scores compared to those who had not; in the study of Kaya and Köse^[28] in 2020, it was stated that the scale scores of the students who had received training/information about CAN during their education at the university were higher compared to those who had not. The study is consistent with the literature. In line with these results, it is seen that receiving training on CAN significantly increases the knowledge and awareness of nurse students.

Although the overall and subscale scores of the nursing students who previously encountered a case or suspicion of CAN were higher compared to those who did not, no significant difference was found between the overall and subscale scores, except for the FCCAN subscale. Likewise, in the study conducted by Çatık and Çam^[47] in 2006, in which nurses and midwives' levels of diagnosing the symptoms and risks of CAN, it was reported that there was no difference between the group that encountered CAN and that did not in terms of overall scale scores. In the study of Burç and Güdücü^[4] in 2015, it was found that the overall scale score of the nurses who encountered a suspicion of CAN was higher but there was no significant difference between the groups. It is thought that the stage at which students witness a case or suspicion of CAN and how nurses are involved will have different effects on their levels of diagnosing the symptoms and risks of CAN.

The scores of student nurses aged 20 and over on the overall scale, and the SNIC, PCPAN, and CCPAN subscales were higher. In the study of Burç and Güdücü^[4] in 2015, it was reported that the mean overall score of nurses in the 28–37 age group was high; in the study of Özçevik et al.^[23] in 2018, it was found that there was a significant relationship between the mean age of nursing students and their level of awareness on CAN and that awareness scores of the students increased as their age increased. In the study of Cho and Chung^[48] in 2013, it was reported

that in addition to education level, legal awareness of CAN was higher in higher grades; in the study of Bağdaş and Bozdağ^[44] in 2018, it was found that the mean overall score was higher in nurses aged 35 and over; in the study of Elarousy et al.^[49] in 2012, it was reported that nursing students aged over 25 were more knowledgeable on CAN than those aged under 25. The results of previous studies are consistent with the results of this study. On the contrary, in the study of Erkut et al.^[35] in 2021, it was stated that there was no significant relationship between age and the overall and subscale scores. This difference may be due to the characteristics of the sample group. According to the results of the research, it can be suggested that age increases awareness on CAN.

Conclusion

The study has concluded that nursing students had insufficient knowledge about CAN. According to the scale scores of the students, it was seen that they got the highest score from the “symptoms of neglect” subscale and the lowest score from the subscale of the “CCPAN.” It was also determined that the increase in grade level and age, encountering a case or suspicion of CAN, and receiving training on the subject positively affected the ability to diagnose the symptoms and risks of CAN.

According to the results of the study, it is recommended to give more importance to this subject in the undergraduate education curriculum and support the participation of nursing students in conferences, courses, and seminars on CAN to increase their awareness of this subject and keep their knowledge up to date.

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References

- Pirdehghan A, Vakili M, Rajabzadeh Y, Puyandehpour M. Child abuse and neglect epidemiology in secondary school students of yazd province, Iran. *Iran J Psychiatry Behav Sci* 2015;9(4):e2256. [CrossRef]
- Yıldız E, Tanrıverdi D. Child neglect and abuse: a global glimpse within the framework of evidence perspective. *Int Nurs Rev* 2018;65(3):370–380. [CrossRef]
- Zeanah CH, Humphreys KL. Child abuse and neglect. *J Am Acad Child Adolesc Psychiatry* 2018;57(9):637–644. [CrossRef]
- Burç A, Güdücü TF. Occurance of diagnosis by nurses of symptoms and risks of child abuse and neglect, and to identify affecting factors. *ACU Sağlık Bil Derg* 2015;6(3):144–151.
- Rizvi MB, Connors GP, King KC, Lopez RA, Bohlen J, Rabiner J. *Pennsylvania Child Abuse Recognition and Reporting*. Treasure Island: StatPearls; 2023.
- Perrigo JL, Berkovits LD, Cederbaum JA, Williams ME, Hurlburt MS. Child abuse and neglect re-report rates for young children with developmental delays. *Child Abuse Negl* 2018;83:1–9.
- Walsh K, Eggins E, Hine L, Mathews B, Kenny MC, Howard S, et al. Child protection training for professionals to improve reporting of child abuse and neglect. *Cochrane Database Syst Rev* 2022;7(7):CD011775. [CrossRef]
- World Health Organization. Child maltreatment. June 13, 2022. <http://www.who.int/mediacentre/factsheets/fs150/en/>
- Alaggia R, Collin-Vézina D, Lateef R. Facilitators and barriers to child sexual abuse (csa) disclosures: a research update (2000–2016). *Trauma Violence & Abuse* 2019;20(2):260–283. [CrossRef]
- Debowska A, Willmott D, Boduszek D, Jones AD. What do we know about child abuse and neglect patterns of co-occurrence? A systematic review of profiling studies and recommendations for future research. *Child Abuse Negl* 2017;70:100–111.
- Hoft M, Haddad L. Screening children for abuse and neglect: a review of the literature. *J Forensic Nurs* 2017;13(1):26–34.
- Maul KM, Naeem R, Rahim Khan U, Mian AI, Yousafzai AK, Brown N. Child abuse in Pakistan: A qualitative study of knowledge, attitudes and practice amongst health professionals. *Child Abuse Negl* 2019;88:51–57. [CrossRef]
- Oostrom TG, Cullen P, Peters SA. The indirect health impacts of the COVID-19 pandemic on children and adolescents: A review. *J Child Health Care* 2023;27(3):488–508. [CrossRef]
- Qin J, Du Y, Chen C. Psychometric testing of chinese version of ISPCAN child abuse screening tools-retrospective version: a study based on college students. *Journal of Aggression, Maltreatment & Trauma* 2023. [CrossRef]
- Salami S, Alhalal E. Nurses' intention to report child abuse in Saudi Arabia: A cross-sectional study. *Child Abuse Negl* 2020;106:104514. [CrossRef]
- UNICEF. 2020 Technical Note: Protection of Children during the Coronavirus Pandemic. June 13, 2022. [https://www.unicef.org/media/65991/file/Technical%20note:%20Protection%20of%20children%20during%20the%20coronavirus%20disease%202019%20\(COVID-19\)%20pandemic.pdf](https://www.unicef.org/media/65991/file/Technical%20note:%20Protection%20of%20children%20during%20the%20coronavirus%20disease%202019%20(COVID-19)%20pandemic.pdf).
- World Health Organization (WHO). 2020 global status report on preventing violence against children. June 13, 2022. <https://www.who.int/teams/social-determinants-of-health/violence-prevention/global-status-report-on-violence-against-children-2020>
- Adli Tıp Uzmanları Derneği (ATUD). SHÇEK-UNICEF research study on child abuse and domestic violence in Turkey-summary report 2010. June 13, 2022. <http://atud.org.tr/kutuphane/unisefrapor.pdf>
- U.S. Department of Health & Human Services, Administration for Children and Families, Administration on Children, Youth and Families, Children's Bureau. *Child maltreatment 2020*. June 13, 2022. <https://www.acf.hhs.gov/sites/default/files/documents/cb/cm2020.pdf>
- Uysal Toraman A, Kısa Ö. The potential impact of the COVID-19 pandemic on children: The dimension of abuse and neglect. *DEUHFED* 2022;15(1):68–77. [CrossRef]
- Özbey H, Özcelep Ateş G, Gül U, Kahrıman İ. Knowledge and awareness of nursing students about child abuse and neglect. *JNPR* 2018;2(3):21–25.
- Aldukhayel A, Aljarbou E, Alturki FM, Almazyad NS, Alsaqer OM, Almutairi R. knowledge and attitude regarding child abuse among primary healthcare physicians and interns in Al Qassim, Saudi Arabia. *Cureus* 2020;12(12):e12270. [CrossRef]
- Özçevik D, Güneş ÖD, Ocakçı AF. The relationship between socio-cultural and demographic characteristics of student nurses with child abuse and neglect awareness. *Ankara Journal of Health Services* 2018;17(2):16–27.
- World Health Organization (WHO). ISPCAN 2006 Preventing child maltreatment: A guide to taking action and generating evidence. June 13, 2022. https://apps.who.int/iris/bitstream/handle/10665/43499/9241594365_eng.pdf?sequence=1
- Pinheiro PS. (2006) World report on violence against children. June 13, 2022. https://www.dji.de/fileadmin/user_upload/izkk/izkk_UNVAC_World_Report_on_Violence_against_Children.pdf
- Kartal M, Bayraktar M. The effects of undergraduate nursing education in diagnosing the symptoms of child abuse and neglect. *Sakarya Med H J* 2021;11(1):162–169.
- Türk B, Hamzaoğlu N, Yayak A, Şenyuva G. Analysis of the level of knowledge and awareness about child abuse and neglect: cross-sectional research. *Türkiye Klinikleri J Foren Sci Leg Med* 2021;18(3):205–214. [CrossRef]
- Kaya HM, Köse S. The awareness on child abuse and neglect among university students. *Istanbul Journal of Social Sciences* 2020;27:1–14.
- Güler D. Childhood psychological maltreatment and depressive symptoms: Parallel-serial mediating effects of certain psychological factors. *Current Psychology* 2022;41:4183–4193. [CrossRef]
- Akcan A, Demiralay Ş. Perceptions of department of nursing students on child neglect and abuse. *JRET* 2016;5(2):275–281.
- Mkonyi E, Mwakawanga DL, Rosser BRS, Bonilla ZE, Lukumay GG, Mohammed I, et al. The management of childhood sexual abuse by midwifery, nursing and medical providers in Tanzania. *Child Abuse & Neglect* 2021;121:105268. [CrossRef]

32. Özen M, Ramadan H, Vural S, Coşkun F. The evaluation of general knowledge of emergency care providers about child abuse and neglect. *Turk J Clin Lab* 2017;8(1):16–22.
33. Tekin HH, Kaya Kılıç A. A limited research on healthcare professionals' status of encountering with child neglect and abuse cases, their notification obligations and training needs. *STED* 2020;29(2):85–94. [\[CrossRef\]](#)
34. Uysal G, Bozkurt G, Sönmez Düzkaya D. Awareness of child abuse and neglect among students. *J Psy Nurs* 2022;13(1):43–48.
35. Erkut Z, Gözen D, Beşirik Ateş S. Nursing students' knowledge level on identification and risks of child abuse and neglect: a descriptive study. *J Educ Res Nurs* 2021;18(3),231–240. [\[CrossRef\]](#)
36. Seferoğlu E, Sezici E, Yiğit D. Nursing students' level of the diagnosing symptoms and risks of child abuse and neglect. *OPUS* 2019;10(17):257–276.
37. Tweedlie J, Vincent S. Adult student nurses' experiences of encountering perceived child abuse or neglect during their community placement: implications for nurse education. *Nurs Educ Today* 2019;73,60–64. [\[CrossRef\]](#)
38. Akgün Kostak M, Vatansever C. Views and opinions of faculty of health sciences students about child abuse and neglect. *Arch Health Sci Res* 2015;2(1):1–11.
39. Uysal A. Determination of knowledge levels of nurses and midwives in diagnosing symptoms and risks of child abuse and neglect. [Unpublished Master's Thesis]. Ege University Institute of Health Sciences 1998.
40. Hae M, Kim SJ, Jung ML, Kang S, Lee J. A survey of nurses' perceptions on child abuse. *Child Health Nurs Res* 2017;23(2):229–237. [\[CrossRef\]](#)
41. Sathiadas MG, Viswalingam A, Vijayaratnam K. Child abuse and neglect in the jaffna district of Sri Lanka - a study on knowledge attitude practices and behavior of health care professionals. *BMC Pediatrics* 2018;18(1):152. [\[CrossRef\]](#)
42. Ben Yehuda Y, Attar-Schwartz S, Ziv A, Jedwab M, Benbenishty R. Child abuse and neglect: reporting by health professionals and their need for training. *Isr Med Assoc J* 2010;12(10):598–602.
43. Lee PY, Chou FH. A training programme for Taiwan nurses to improve child abuse reporting. *J Clin Nurs* 2017;26(15–16):2297–2306. [\[CrossRef\]](#)
44. Bağdaş Ö, Bozdağ F. Nurses' diagnosis of child abuse and neglect symptoms and risks. *Mersin Univ Sağlık Bilim Derg* 2018;11(3):267–275. [\[CrossRef\]](#)
45. Ha YO. Nursing students' perceptions of child abuse and factors influencing those perceptions. *Child Health Nursing Research* 2018;24:178–185. [\[CrossRef\]](#)
46. Poreddi V, Pashapu DR, Kathyayani BV, Gandhi S, El-Arousy W, Math SB. Nursing students' knowledge of child abuse and neglect in India. *BJN* 2016;25(5):264–268. [\[CrossRef\]](#)
47. Çatık AE, Çam O. Determining nurses' and midwives' level of knowledge on symptoms and risk of child abuse and neglect. *EGEHFD* 2006;22(2):103–119.
48. Cho YH, Chung Y. Child abuse recognition and related factors among korean nursing students. *J Agric Med Community Health* 2013;38(2):85–96. [\[CrossRef\]](#)
49. Elarousy W, Helal H, De Villiers L. Child abuse and neglect: student nurses' knowledge and attitudes. *Journal of American Science* 2012;8(7):665–674. [\[CrossRef\]](#)