



# Comparison of the levels of knowledge and approaches in relation with child abuse and neglect in residents of pediatrics, pediatricians and practitioners working in the province of Ankara

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## Abstract

**Aim:** In this study, it was aimed to evaluate the levels of knowledge and approaches related with child abuse and neglect in pediatricians and practitioners who have a significant role in recognition and prevention of child abuse and neglect.

**Material and Methods:** Two hundred residents of pediatrics and 100 pediatricians working in university and education and research hospitals in the center of Ankara province and 250 practitioners working in primary health care centers were included in the study. A scale composed of five parts including history, physical examination, radiology, risk groups and symptoms was prepared to determine the level of knowledge of physician related with child abuse and neglect. The correct answers given to the questions included in the scale were added and knowledge scores for the subscales and the total score were calculated. Approval was obtained from Ankara University, Medical Faculty Ethics Committee for the study. The data were evaluated using Mann-Whitney U and Kruskal Wallis test.

**Results:** A total of 550 physicians (339 female and 221 male) were included in the study. The mean total knowledge score related with child abuse and neglect was found to be 12.4±4.5 in residents of pediatrics, 13.7±2.8 in pediatricians and 13.6±2.8 in practitioners. The level of knowledge was found to be significantly higher in women, married physicians, physicians who received education before and after graduation, physician who confronted with cases of abuse or suspicious abuse and made a legal notice.

**Conclusion:** In the light of these findings, child abuse and neglect should be included in education programs before and after graduation for physicians who have a key role in the subject of child abuse and neglect. (Türk Ped Arş 2014; 49: 57-65)

**Key words:** Level of knowledge, pediatrician, child abuse and neglect, physician, practitioner

## Introduction

Child abuse is a type of trauma which is diagnosed and treated with the highest level of difficulty because it can recur, is generally exerted by individuals who have the closest contact with the child and has long-term effects which may have an impact on the child's life (1).

In a study performed in USA, it was reported that approximately 1% of the children were exposed to abuse, 1.5% were exposed to neglect and this rate was only 10% of the actual frequency in the population (2). In the study conducted by Bilir et al. (3) including 16 100 children, the rate of abuse was found to be 33%. It has been reported that 61% of the deaths related with child abuse can be prevented (4).

Physicians have a very important place in recognition and treatment of child abuse (5). When the dimensions of trauma are massive, the possibility of child abuse should be immediately considered. If mild signs (including skin lesions) related with abuse are missed, more severe abuse types may develop in the child. Therefore, all signs and symptoms of abuse should be known by physicians (2).

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When mild signs indicating abuse are missed or not reported, more negative outcomes with vital importance may develop.

Since very few people evaluate child abuse and neglect as an unacceptable behavior, abuse and neglect are ignored most of the time. Although physicians have a very important role in the diagnosis of child abuse and neglect, they report that their notion, ability and legal notices related with the subject are not sufficient (6-10). Limited number of studies related with child abuse and neglect in our country and the fact that child abuse and neglect has been only recently included in pre- and post-graduate education programs cause deficiency of knowledge and experience in healthcare workers including mainly physicians and cases which present to healthcare institutions may be missed.

With all these reasons, this study aimed to evaluate the levels of knowledge and approaches of physicians related with child abuse and neglect in the center of the province of Ankara.

### Material and Methods

The study was planned as a descriptive study and was conducted between July the 1<sup>st</sup>, 2009 and January the 31<sup>st</sup>, 2010.

The population of the study was composed of residences of pediatrics and pediatricians working in university and education and research hospitals and practitioners working in primary health-care centers. The lists of physicians included in the population were obtained from the relevant institutions. The total number of residents of pediatrics was 343 and the total number of pediatricians was 267 in four universities (Ankara, Başkent, Gazi, Hacettepe Universities) and two education and research hospitals (Dışkapı Education and Research Hospital and Dr. Sami Ulus Child Hospital) in the province of Ankara. A total of 323 practitioners were working in the primary health care centers in relation with Çankaya, Mamak and Altındağ Health Group Directorate.

As the representative of the population, 200 residents of pediatrics, 100 pediatricians and 250 practitioners were selected by simple random sampling method.

The first part of the data collection form which was consisted of two parts included 18 questions related with the demographic properties of the physicians and their point of views and approaches in relation with child abuse and neglect. The second part included the child abuse and neglect knowledge scale which was consisted of 25 questions. The questions in the knowledge scale were selected by the investigators among the questions used in different studies by reviewing the literature (Table 1).

In the knowledge scale, there were three answers as "yes", "no" and "I have no idea" for each question. The 14<sup>th</sup>, 16<sup>th</sup>, 21<sup>st</sup> and 23<sup>rd</sup> questions were expected to be answered as "no" and the other questions were expected to be answered as "yes". Each right answer was considered 1 point and knowledge scores were calculated separately for five parts including "History", "Examination", "Radiology", "Risk groups" and "Symptoms". In addition, the to-

tal knowledge score for child abuse and neglect was obtained by adding the scores of these five parts.

Internal consistency coefficients and Cronbach alpha values related with the parts of the scale were calculated. The Cronbach alpha values were calculated to be 0.77, 0.72 and 0.68 for "Examination", "History" and "Symptoms", respectively. The Cronbach alpha values for 'Risk Groups' and 'Radiology' were found to be 0.48-0.46 and these parts were excluded from the assessment, since the internal consistencies were found to be low (Table 1).

Approval was obtained from the ethics committee of Ankara University, Medical Faculty for the study (25.05.2009-152-4771). The question form was filled in by the investigator by face to face interview after obtaining written informed consent from the physicians included in the population.

### Statistical analysis

Analysis of the data was performed using SPSS (Statistical Package for the Social Sciences) for Windows 11,5 package program. The compatibility of the distribution of the scale scores to normal distribution was tested using Shapiro Wilk test. In inter-group comparisons, Mann-Whitney U test was used when the number of independent groups was 2 and Kruskal Wallis test was used when the number of independent groups was more than 2. Pearson's chi-square test was used to analyse the categorical variables. A p value of <0,05 was considered statistically significant.

### Results

36.3% of the physicians included in the study were residents of pediatrics, 18.3% were pediatricians and 45.4% were practitioners.

As shown in Table 2, 2/3 of the physicians were female and 77.5% of the residents of pediatrics were in the 25-29 age group. In parallel with the age group distribution, the majority (81.5%) of the residents of pediatrics had been working for a period shorter than 4 years and most practitioners had been working for a period longer than 10 years. 60.9% of the physicians were married and 77.3% of them had children.

The rate of education related with the subject of child abuse and neglect before graduation (55.5%) was higher in residents of pediatrics compared to the other groups (Table 3,  $p<0.001$ ). Only 37.4% of the physicians who reported that they received education before graduation found this education sufficient. The knowledge and rate of education related with the subject of child abuse and neglect after graduation were found to be higher in practitioners (61.2%) ( $p<0.01$ ). The rate of finding post-graduate education sufficient (52.1%) was found to be higher compared to the rate of finding education before graduation sufficient. Pediatricians and residents of pediatrics reported that forms related with child abuse and neglect were available in the institutions they worked with a higher rate ( $p<0.001$ ). 74.6% of the physicians found these forms sufficient. 84.9% of the physicians reported that they would consider legal notice if they confronted with a

**Table 1. The parts included in the scale of knowledge of physicians related with child abuse and neglect, the sentences included, percentages of the correct answers and Cronbach Alpha values**

| Scope of the parts                                                                                   | Sentences included in the part by the number of question in the scale                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Percentage of the correct answers | Cronbach Alpha value |
|------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|----------------------|
| 1. Findings suggesting sexual abuse and battered baby syndrome in the history                        | 1. Presence of inconsistency between the child and family in expressing the reason of injury suggests child abuse.<br>2. Presence of unexplained delay in presentation of the child to the hospital suggests child abuse.<br>3. Presence of multiple suspicious traumas in the history of the child suggests child abuse.<br>10. Pregnancy in the adolescence suggests child abuse.<br>11. A 6-year old girl is brought to emergency department by her mother. She expresses that she has introverted and aggressive behaviors recently and has noticed blood on her underwear. In such a case, sexual abuse should be considered in the differential diagnosis.<br>13. Signs including tenesmus, constipation, bloody stool and proctitis may be observed as a result of sexual abuse.                                                                                                                                                                                                                                                           | 81.6                              | 0.72                 |
| 2. Findings suggesting sexual abuse and battered baby syndrome on physical examination               | 4. Detection of multiple fractures in a child younger than 2 years of age suggests physical abuse.<br>5. Presence of ecchymosis on sheltered regions of the body including the hip, abdomen, chest, genital region and back on the first evaluation suggests physical abuse.<br>6. Intraoral injury, subconjunctival hemorrhage and bilateral orbital ecchymoses on physical examination suggest physical abuse.<br>7. Presence of bilateral symmetrical burns in the hands and feet (stocking-glove type) suggests physical abuse.<br>12. Observation of verruca acuminata in the anogenital region in children younger than 3 years of age suggests sexual abuse.<br>15. A four-month old baby is brought to the emergency department by his mother with vomiting and change in consciousness. It is expressed that there has been no problem before. On physical examination, he is observed to be lethargic and he has bulging anterior fontanelle and ecchymoses on both arms. Such a case suggests the possibility of shaken baby syndrome. | 79                                | 0.77                 |
| 3. Findings suggesting sexual abuse and battered baby syndrome on radiological evaluation            | 8. Presence of head trauma together with findings related with old fractures on radiological examination of the child suggests physical abuse.<br>9. Presence of corner fractures including metaphysis and epiphysis on radiological examination of the child suggests physical abuse.<br>16. In shaken baby syndrome, skull fracture and another traumatic lesion is found together with intracranial hemorrhage in shaken baby syndrome.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 56.6                              | 0.46                 |
| 4. Risk groups, in child abuse and neglect<br>Properties of the child, family, parents and exploiter | 14. In cases of sexual abuse, the exploiter is generally old and strange individuals outside the family.<br>19. The risk of exposure to abuse in a child who is very restless and crying is higher compared to other children.<br>20. The risk of exposure to abuse in a child with anomaly and disability is higher compared to other children.<br>21. Child abuse is not observed in families with a high socioeconomic level.<br>22. The fact that the parents were exposed to abuse in the childhood is a factor for being an exploiter.<br>23. Child abuse is not observed in parents with a high education level.                                                                                                                                                                                                                                                                                                                                                                                                                           | 61                                | 0.48                 |
| 5. Findings suggesting child abuse and neglect and behavioral symptoms in the child                  | 17. Delayed vaccination or lack of vaccination suggests neglect.<br>18. Clothing the child with clothes which are inappropriate for the season suggests neglect.<br>24. If a child who has gained toilet education starts to wet his/her bed again, this may be a finding of child abuse.<br>25. A child who is exposed to abuse is introverted and academically unsuccessful.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 70.5                              | 0.68                 |

\*In the other stages of the study, the titles with number 3 and 4 were excluded from the assessment because of low internal consistency coefficients.

**Table 2. Some demographic properties of the physicians included in the study**

|                            | Resident n (%) | Specialist n (%) | Practitioner n (%) | Total n (%) |
|----------------------------|----------------|------------------|--------------------|-------------|
| <b>Gender<sup>NS</sup></b> |                |                  |                    |             |
| Female                     | 126 (63)       | 66 (66)          | 147 (58.8)         | 339 (61.6)  |
| Male                       | 74 (37)        | 34 (34)          | 103 (41.2)         | 211 (38.4)  |
| <b>Age groups*</b>         |                |                  |                    |             |
| 20-24 Years                | 20 (10)        | 0 (0)            | 0 (0)              | 20 (3.6)    |
| 25-29 Years                | 155 (77.5)     | 19 (19)          | 14 (5.6)           | 188 (34.2)  |
| 30-39 Years                | 24 (12)        | 51 (51)          | 95 (38)            | 170 (30.9)  |
| ≥40 Years                  | 1 (0.5)        | 30 (30)          | 141 (56.4)         | 172 (31.3)  |
| <b>Working period*</b>     |                |                  |                    |             |
| ≤1 Years                   | 45 (22.5)      | 8 (8)            | 4 (1.6)            | 57 (10.4)   |
| 2-4 Years                  | 118 (59)       | 50 (50)          | 16 (6.4)           | 145 (26.4)  |
| 5-9 Years                  | 37 (18.5)      | 16 (16)          | 47 (18.8)          | 13 (25.2)   |
| >10 Years                  | 0 (0)          | 26 (26)          | 183 (73.2)         | 209 (38.0)  |
| <b>Marital status*</b>     |                |                  |                    |             |
| Single                     | 139 (69.5)     | 34 (34)          | 42 (16.8)          | 215 (39.1)  |
| Married                    | 61 (30.5)      | 66 (66)          | 208 (83.2)         | 335 (60.9)  |
| <b>Having children*</b>    |                |                  |                    |             |
| Has children               | 19 (31.1)      | 56 (84.8)        | 184 (88.5)         | 259 (77.3)  |
| Total                      | 200 (100)      | 100 (100)        | 250 (100)          | 550 (100)   |

<sup>NS</sup>p>0.05 Insignificant, \*p<0.001

case or suspicious case of child abuse and neglect. Pediatricians and residents of pediatrics reported that they confronted with more cases compared to practitioners (p<0.001). Neglect was in the first order (42.5%) among the cases confronted. This was followed by emotional (23.6%), physical (29.8%) and sexual abuse (10.5%) (p<0.05).

As shown in Table 4, approximately 2/3 of 360 physicians who reported that they confronted with cases of child abuse and neglect reported that they had difficulties in communication/legal process with institutions. The second problematic issue was taking history (41.1%). 60.2% of the physicians reported that they would keep a forensic report and 38.5% reported that they would make a legal notice if they confronted with a case or suspicious case of child abuse and neglect. 17.0% of the residents of pediatrics, 13% of the pediatricians and 14.4% of the practitioners reported that they would not make a legal notice if they confronted with a case or suspicious case of child abuse and neglect. The main reason of not making a legal notice for the physicians was insufficient knowledge about child abuse and neglect (78.3%). This was followed by lack of knowledge of where to make a legal notice (68.7%).

The total score of knowledge of child abuse and neglect was 12.4±4.5 in residents of pediatrics, 13.7±2.8 in pediatricians and 13.6±2.8 in practitioners. Although the score of knowledge of residents of pediatrics was lower compared to the other groups, the difference was not statistically significant (Table 5, p>0.05).

Both the mean total score of knowledge about child abuse and neglect and the mean values of all parts were found to be higher in female physicians (p<0.001), in married physicians (p<0.001), in older physicians (p<0.001), in physicians with a working period of 10 years and longer (p<0.001), in physicians who received education before (p<0.01) and after graduation (p<0.001), in physicians who confronted with other cases before (p<0.001) and in physicians who made a legal notice before (p<0.001) compared to the other groups (Table 5).

## Discussion

In the study, 82% of the pediatricians, 70.5% of the residents of pediatrics and 54.8% of the practitioners reported that they confronted with cases of child abuse and neglect or suspicious cases of child abuse and neglect (Table 3). In the study of Borres et al. (11), cases of child abuse and neglect were found with a more lower rate in primary health care units. This was interpreted such that primary care physicians who are in close relation with families showed more tolerance to physical abuse compared to pediatricians.

The most common cases confronted by the study group included neglect with a rate of 45.8%, physical abuse with a rate of 29.8%, emotional abuse with a rate of 23.6% and sexual abuse with a rate of 10.5% (Table 3). In the study of Canbaz et al. (12), it was reported that the most common type of abuse confronted by physi-

**Table 3. Distribution of some characteristics related with child abuse and neglect in physicans included in the study by their titles**

| Variables                                    | Resident<br>n=200 (%) | Specialist<br>n=100 (%) | Practitioner<br>n=250 (%) | Total<br>n=550 (%) |
|----------------------------------------------|-----------------------|-------------------------|---------------------------|--------------------|
| <b>Education before graduation**</b>         |                       |                         |                           |                    |
| Received                                     | 89 (44.5)             | 59 (59)                 | 196 (78.4)                | 344 (62.5)         |
| Not received                                 | 111 (55.5)            | 41 (41)                 | 54 (21.6)                 | 206 (37.5)         |
| <b>Sufficiency of education<sup>NS</sup></b> |                       |                         |                           |                    |
| Not sufficient                               | 74 (66.7)             | 19 (46.3)               | 36 (66.7)                 | 129 (62.6)         |
| Sufficient                                   | 37 (33.3)             | 22 (53.7)               | 18 (33.3)                 | 77 (37.4)          |
| <b>Education after graduation*</b>           |                       |                         |                           |                    |
| Received                                     | 108 (54)              | 40 (40)                 | 97 (38.8)                 | 245 (44.5)         |
| Not received                                 | 92 (46)               | 60 (60)                 | 153 (61.2)                | 305 (55.5)         |
| <b>Sufficiency of education<sup>NS</sup></b> |                       |                         |                           |                    |
| Not sufficient                               | 49 (53.3)             | 22 (36.7)               | 75 (49)                   | 146 (47.9)         |
| Sufficient                                   | 43 (46.7)             | 38 (63.3)               | 78 (51)                   | 159 (52.1)         |
| <b>Presence of method**</b>                  |                       |                         |                           |                    |
| No                                           | 34 (17)               | 12 (12)                 | 117 (46.8)                | 163 (29.6)         |
| Not known                                    | 84 (42)               | 46 (46)                 | 68 (27.2)                 | 198 (36)           |
| Yes                                          | 82 (41)               | 42 (42)                 | 65 (26)                   | 189 (34.4)         |
| <b>Sufficiency of method<sup>NS</sup></b>    |                       |                         |                           |                    |
| Not sufficient                               | 27 (32.9)             | 8 (19)                  | 13 (20)                   | 48 (25.4)          |
| Sufficient                                   | 55 (67.1)             | 34 (81)                 | 52 (80)                   | 141 (74.6)         |
| <b>Making a notice<sup>NS</sup></b>          |                       |                         |                           |                    |
| No                                           | 34 (17)               | 13 (13)                 | 36 (14.4)                 | 83 (15.1)          |
| Yes                                          | 166 (83)              | 87 (87)                 | 214 (85.6)                | 467 (84.9)         |
| <b>Confrontation with a case*</b>            |                       |                         |                           |                    |
| Not Confronted                               | 59 (29.5)             | 18 (18)                 | 113 (45.2)                | 190 (34.5)         |
| Confronted                                   | 141 (70.5)            | 82 (82)                 | 137 (54.8)                | 360 (65.5)         |
| <b>Types of abuse**</b>                      |                       |                         |                           |                    |
| Neglect                                      | 101 (50.5)            | 46 (46)                 | 105 (42)                  | 252 (45.8)         |
| Emotional abuse                              | 39 (19.5)             | 19 (19)                 | 72 (28.8)                 | 130 (23.6)         |
| Physical abuse                               | 52 (26)               | 28 (28)                 | 84 (33.6)                 | 164 (29.8)         |
| Sexual abuse                                 | 17 (8.5)              | 18 (18)                 | 23 (9.2)                  | 58 (10.5)          |

<sup>NS</sup>p>0.05 Insignificant, \*p<0.05, \*\*p<0.01, \*\*\*p<0.001,

\*one person could give more than one answer, the percentages were obtained according to the answers given.

cians in the community was neglect. In the study of Şanyüz (13) in which the approach of physicans to child abuse was examined, the most common type of abuse confronted by physican throughout their lives was found to be physical abuse. It has been reported that physical abuse is recognized more frequently compared to the other types of abuse because of a relatively higher number of findings and the rate of recognition of neglect and emotional abuse where physical symptoms are not prominent is lower.

In the study, the main difficulties of the physicans who confronted with cases or suspicious cases of child abuse and neglect in-

cluded communication with relevant institutions/legal processes, history taking, recording and physical examination (Table 3). In the study of Kocaer (14), the main difficulty of physicans and nurses who confronted with cases of child abuse and neglect was legal processes. In the study conducted by Al-Moosa et al (15) with 117 pediatricians in Kuwait, more than 80% of the physicans reported that they did not know what to do in the legal process in case of child abuse and neglect.

85% of the physicans reported that they would consider legal notice if they confronted with a case or suspicious case of neglect

**Table 4. Distribution of states of difficulty of physicians who confronted with a case before in child abuse and neglect**

| Variables                                                  | Resident<br>n=200 (%) <sup>#</sup> | Specialist<br>n=100 (%) <sup>#</sup> | Practitioner<br>n=250 (%) <sup>#</sup> | Total<br>n=550 (%) <sup>#</sup> |
|------------------------------------------------------------|------------------------------------|--------------------------------------|----------------------------------------|---------------------------------|
| <b>States of difficulty (n=360)<sup>NS</sup></b>           |                                    |                                      |                                        |                                 |
| History                                                    | 61 (43.3)                          | 23 (28)                              | 64 (46.7)                              | 148 (41.1)                      |
| Physical examination                                       | 56 (39.7)                          | 30 (36.6)                            | 39 (28.5)                              | 125 (34.7)                      |
| Keeping record                                             | 49 (34.8)                          | 28 (34.1)                            | 53 (38.7)                              | 130 (36.1)                      |
| Communication with institutions/legal process              | 73 (51.8)                          | 44 (53.7)                            | 92 (67.2)                              | 209 (58.1)                      |
| Other                                                      | 1 (0.7)                            | 2 (2.4)                              | 0 (0)                                  | 3 (0.8)                         |
| <b>Type of notice (n=467)*</b>                             |                                    |                                      |                                        |                                 |
| Keeping a legal report                                     | 130 (78.3)                         | 58 (66.7)                            | 93 (43.5)                              | 281 (60.2)                      |
| Written notice to prosecution                              | 12 (7.2)                           | 4 (4.6)                              | 33 (15.4)                              | 49 (10.5)                       |
| Written notice to SSCPI                                    | 51 (30.7)                          | 32 (36.8)                            | 59 (27.6)                              | 142 (30.4)                      |
| Reporting the police                                       | 31 (18.7)                          | 18 (20.7)                            | 131 (61.2)                             | 180 (38.5)                      |
| Other                                                      | 8 (4.8)                            | 5 (5.7)                              | 0 (0)                                  | 13 (2.8)                        |
| <b>Reasons for not making a notice (n=83)<sup>NS</sup></b> |                                    |                                      |                                        |                                 |
| Lack of sufficient knowledge                               | 31 (91.2)                          | 10 (76.9)                            | 24 (66.7)                              | 65 (78.3)                       |
| Lack of knowledge of where to make the notice              | 26 (76.5)                          | 8 (61.5)                             | 23 (63.9)                              | 57 (68.7)                       |
| Lack of time                                               | 4 (11.8)                           | 5 (38.5)                             | 7 (19.4)                               | 16 (19.3)                       |
| Other                                                      | 0 (0)                              | 0 (0)                                | 12 (33.3)                              | 12 (14.4)                       |

<sup>#</sup>Since a person can mark more than one option, the percentage is obtained according to the answers given. In statistical analysis, the people who marked the answer "Other" were excluded and the chi-square test was performed, <sup>NS</sup>p>0.05 Insignificant, \*p<0.001

SSCPI: Social service and Children Protection Institution

(Table 3). Garrusi et al. (16) reported that 65% of the physicians confronted with cases of neglect, but only 4.5% made a legal notice. In the study performed by Lazenbatt et al. (17) related with physical abuse including 419 healthcare workers including nurses, physicians and dentists in Ireland, the rate of confronting with physical abuse throughout the occupational life was 60% and the rate of legal notice was 47%. In our study, 15.1% of the physicians reported that they did not consider making a legal notice (Table 3). Borres et al. (11) reported that 21% of the physicians never made a legal notice. In the study of Van et al. (18), it was shown that 43% of the physicians avoided making a legal notice for suspicious cases. The concerns of the physicians who avoided making a legal notice were mostly related with the problems which the child and family would confront subsequently. It is known that physicians do not make a legal notice especially for suspicious cases, although legal notice is mandatory legally. In the study performed by Jenny et al. (19), it was found that a legal notice was not made for 33% of the cases of abuse examined by physicians because of head trauma.

In the study, the main reasons for physicians for not making a legal notice included insufficient knowledge about child abuse and neglect, lack of knowledge of where to make the legal notice, lack of time to spend for this issue, safety concern, the thought that the child would be harmed subsequently and the thought that the child would be separated from the family etc. (Table 4). In the study performed by Flaherty et al. (20), the main reason for

physicians for not making a legal notice was the belief that the problem would be solved inside the family. The common reasons for physicians for not making a legal notice for child abuse and neglect include fear of attack by the relatives of the victim, difficulty in describing and expressing their observations, lack of enough time, feeling that their education is insufficient and the thought that their legal notice would not make a difference in the status of the children and their families (11). In the study of Açık et al. (21), the requirements for education for practitioners working in the Eastern Anatolia Region were determined and interventions to increase knowledge/ability were recommended for recognition, notice and prevention of child abuse and neglect.

The mean scores of knowledge about child abuse and neglect were lower in residents of pediatrics compared to pediatricians and practitioners, though the difference was not statistically significant (Table 5). In the study of Van et al. (18) including 124 pediatricians and 100 practitioners in Australia which attempted to determine signs and symptoms of physical abuse, the rate of giving right answers to all questions was 40% in the practitioners and 80% in pediatricians. In the study of Socolar (22) related with sexual abuse including 113 physicians in North Carolina, it was reported that pediatricians were better, though all physicians had inadequacy in the subject of child abuse and neglect.

In this study, the score of knowledge of female physicians about child abuse and neglect was found to be higher compared to male

**Table 5. Evaluation of child abuse and neglect knowledge scores of the physicians included in the study by some characteristics**

| Characteristics                                 | Part 1. History<br>X±SS<br>(The lowest-the<br>highest) | Part 2. Examination<br>X±SS<br>(The lowest-the<br>highest) | Part 3. Symptoms<br>X±SS<br>(The lowest-the<br>highest) | Total knowledge score<br>X±SS<br>(The lowest-the<br>highest) |
|-------------------------------------------------|--------------------------------------------------------|------------------------------------------------------------|---------------------------------------------------------|--------------------------------------------------------------|
| <b>Title<sup>NS</sup></b>                       |                                                        |                                                            |                                                         |                                                              |
| Resident (n=200)                                | 5.1±1.5 (2-6)                                          | 4.5±1.8 (0-6)                                              | 2.7±1.5 (0-4)                                           | 12.4±4.5 (3-16)                                              |
| Specialist (n=100)                              | 5.4±1.1 (2-6)                                          | 5.2±1.2 (2-6)                                              | 3.1±1.2 (0-4)                                           | 13.7±2.8 (5-16)                                              |
| Practitioner (n=250)                            | 5.4±1 (1-6)                                            | 5.0±1.3 (0-6)                                              | 3.2±1 (0-4)                                             | 13.6±2.8 (4-16)                                              |
| <b>Gender**</b>                                 |                                                        |                                                            |                                                         |                                                              |
| Male (n=211)                                    | 5.0±1.4 (2-6)                                          | 4.6±1.7 (0-6)                                              | 2.8±1.4 (0-4)                                           | 12.4±4.1 (3-16)                                              |
| Female (n=339)                                  | 5.4±1 (1-6)                                            | 5.1±1.4 (0-6)                                              | 3.1±1.1 (0-4)                                           | 13.6±3.1 (3-16)                                              |
| <b>Marital status**</b>                         |                                                        |                                                            |                                                         |                                                              |
| Married (n=335)                                 | 5.5±0.9 (1-6)                                          | 5.1±1.3 (0-6)                                              | 3.2±1 (0-4)                                             | 13.8±2.7 (4-16)                                              |
| Single (n=215)                                  | 5.0±1.5 (2-6)                                          | 4.5±1.8 (0-6)                                              | 2.6±1.5 (0-4)                                           | 12.1±4.4 (3-16)                                              |
| <b>Age**</b>                                    |                                                        |                                                            |                                                         |                                                              |
| 20-24 (n=20)                                    | 5.6±0.9 (3-6)                                          | 4.9±1.7 (0-6)                                              | 3.2±1.1 (1-4)                                           | 13.7±3.5 (5-16)                                              |
| 25-29 (n=188)                                   | 4.9±1.6 (2-6)                                          | 4.4±1.8 (1-6)                                              | 2.6±1.5 (0-4)                                           | 11.9±4.5 (3-16)                                              |
| 30-39 (n=170)                                   | 5.3±1.1 (1-6)                                          | 5.0±1.5 (0-6)                                              | 3.1±1.2 (0-4)                                           | 13.4±3.2 (4-16)                                              |
| ≥40 (n=172)                                     | 5.6±0.8 (2-6)                                          | 5.2±1.1 (1-6)                                              | 3.3±0.9 (1-4)                                           | 14.2±2.1 (7-16)                                              |
| <b>Working period**</b>                         |                                                        |                                                            |                                                         |                                                              |
| ≤1 Years (n=57)                                 | 4.3±1.8 (2-6)                                          | 3.8±2.1 (1-6)                                              | 2.2±1.7 (0-4)                                           | 10.3±5.4 (3-16)                                              |
| 2-4 Years (n=145)                               | 5.1±1.3 (2-6)                                          | 4.6±1.7 (0-6)                                              | 2.6±1.4 (0-4)                                           | 12.3±3.9 (3-16)                                              |
| 5-9 Years (n=139)                               | 5.3±1.2 (1-6)                                          | 4.9±1.5 (0-6)                                              | 3.1±1.2 (0-4)                                           | 13.3±3.6 (4-16)                                              |
| ≥10 Years (n=209)                               | 5.6±0.7 (2-6)                                          | 5.3±1.1 (1-6)                                              | 3.4±0.8 (1-4)                                           | 14.3±1.1 (6-16)                                              |
| <b>Education before graduation*</b>             |                                                        |                                                            |                                                         |                                                              |
| Received (n=206)                                | 5.5±1.2 (2-6)                                          | 5.0±1.5 (1-6)                                              | 3.1±1.3 (0-4)                                           | 13.6±3.6 (3-16)                                              |
| Not received (n=344)                            | 5.2±1.2 (1-6)                                          | 4.8±1.5 (0-6)                                              | 2.9±1.3 (0-4)                                           | 12.9±3.5 (3-16)                                              |
| <b>Education after graduation **</b>            |                                                        |                                                            |                                                         |                                                              |
| Received (n=305)                                | 5.7±0.8 (1-6)                                          | 5.3±1.1 (0-6)                                              | 3.3±1.0 (0-4)                                           | 14.3±2.4 (5-16)                                              |
| Not received (n=245)                            | 4.8±1.5 (2-6)                                          | 4.3±1.8 (0-6)                                              | 2.6±1.4 (0-4)                                           | 11.7±4.2 (3-16)                                              |
| <b>State of having confronted with a case**</b> |                                                        |                                                            |                                                         |                                                              |
| Confronted (n=360)                              | 5.5±1 (2-6)                                            | 5.2±1.3 (0-6)                                              | 3.2±1.1 (0-4)                                           | 13.9±2.9 (3-16)                                              |
| Not confronted (n=190)                          | 4.8±1.5 (1-6)                                          | 4.3±1.8 (0-6)                                              | 2.6±1.4 (0-4)                                           | 11.7±4.3 (3-16)                                              |
| <b>State of making a legal notice**</b>         |                                                        |                                                            |                                                         |                                                              |
| Made (n=467)                                    | 5.6±0.8 (2-6)                                          | 5.2±1.2 (0-6)                                              | 3.2±1 (0-4)                                             | 14.0±2.6 (3-16)                                              |
| Not made (n=83)                                 | 3.6±1.6 (1-6)                                          | 3.1±1.9 (0-6)                                              | 1.6±1.6 (0-4)                                           | 8.3±4.6 (3-16)                                               |
| Total                                           | 5.3±1.2 (1-6)                                          | 4.9±1.5 (0-6)                                              | 3.0±1.3 (0-4)                                           | 13.2±3.6 (3-16)                                              |

NS:p&gt;0.05 insignificant.\*p&lt;0.01. \*\*p&lt;0.001

physicians (Table 5). In the study of Şanyüz (13), 73% of the physicians who reported that they made a diagnosis of abuse were female. In the study of Segal and Iwa (23), it was found that the difference between social workers, lawyers and physicians in terms of the point of view related with child abuse was affected by factors

including age and gender rather than occupation. In our study, the levels of knowledge of physicians related with child abuse and neglect were examined by age groups (Table 5) and a statistically significant difference was found which was thought to arise from the residents of pediatrics in the 25-29 age group.

The knowledge score of the physicians who confronted with a case of abuse was significantly higher compared to the ones who did not confront with any case of abuse (Table 5). The main factor which affected the level of knowledge was previous confrontation with a case. In the study of Shor related with the factors affecting the diagnoses and reports of pediatricians related with child abuse, occupational experience was shown to be the most important factor. It was reported that physicians with a low level of awareness noticed the issue of child abuse and neglect with a lower rate (24).

The most important ways in preventing child abuse and neglect include predetermination of the risk factors which lead to child abuse and neglect, elimination of the risk factors and prevention of occurrence of abuse. If the process of prevention is insufficient and abuse and neglect occurs, it should be recognized at this point and recurrence should be prevented. Therefore, physicians should keep abuse in mind in the differential diagnosis in each case they confront with. In cases of abuse, victims, families or caretakers frequently do not give an elucidatory history in contrast to other health problems. There is no specific diagnostic physical finding or diagnostic test which indicates abuse. Ignorance and concealing of abuse predispose to recurrence and chronicity or more severe conditions including mortality (25).

The right approach in suspicious cases of abuse and neglect include legal notice and providing the child to be put under protection. If abuse and neglect is not considered at the first presentation, the child would be left to his/her fate and may not have a chance to present to a healthcare institution for the second time.

## Conclusion

The main result obtained in the study is the fact that there are differences between physicians in terms of the levels of knowledge and approaches related with child abuse and neglect. The male physicians, single physicians, physicians in the 25-29 age group, the ones who reported that they did not receive education about child abuse and neglect before/after graduation, the ones who reported that they never confronted with any case and made a legal notice were found to have a lower level of knowledge in relation with child abuse and neglect compared to the other groups. 15% of the physicians reported that they would not consider a legal notice if they confronted with a case or suspicious case of child abuse and neglect. The main reason for not making a legal notice was lack of sufficient knowledge. Therefore, systematic and continuous education programs should be arranged in order to increase the level of knowledge about child abuse and neglect for all physicians including mainly the ones working in the area of pediatrics.

All health institutions including mainly primary health care centers should be included in the child abuse and neglect national surveillance system which will be established.

The children who are in the high risk group in terms of abuse should be followed up by social service specialists with certain intervals. The high benefit of the child should be considered in

evaluation and decisions related with cases of child abuse and neglect. The best approach to cases of abuse can be presented by a multi-center team including different specialists. In this context, the cases which are detected should be directed to Child Follow-up Centers and abuse should be evaluated medically, socially and legally by specialists and the child should be protected. Child abuse and neglect is not a problem which can be solved with maturation of a single occupational group in this area. All disciplines should discharge their responsibilities in the framework of public social politics and a close inter-disciplinary communication-collaboration should be provided.

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**Informed Consent:** Written informed consent of the participants were taken.

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## References

1. Johnson CF. Abuse and neglect of children. In: Behrman RE, Kliegman RM, Arvin AM, (eds). Nelson textbook of pediatrics. 18th ed. Philadelphia: WB Saunders, 2007: 171-2.
2. Dubowitz H. Preventing child neglect and physical abuse. *Pediatr Rev* 2002; 23: 191-6.
3. Bilir Ş, Arı M, Dönmez N, ve ark. 4-12 yaşları arasında 16 100 çocukta örselenme durumları ile ilgili bir inceleme. Çocuk istismarı ve ihmali, çocukların kötü muameleden korunması 1. Ulusal Kongresi, Gözde Repo Ofset, Ankara, 1991.
4. Rimsza ME, Schackner RA, Bowen KA, Marshall W. Can child deaths be prevented? The Arizona child fatality review program experience. *Pediatrics* 2002; 110: 11.
5. Starling SP, Heisler KW, Paulson JF, Youmans E. Child abuse training and knowledge: a national survey of emergency medicine, family medicine and pediatric residents and program directors. *Pediatrics* 2009; 123: 595-602.
6. Woolf A, Taylor L, Melnicoe L, et al. What residents know about child abuse: implications of a survey of knowledge and attitudes. *Am J Dis Child* 1988; 142: 668-72.
7. Dubowitz H. Child abuse programs and pediatric residency training. *Pediatrics* 1988; 82: 477-80.
8. Socolar RR. Physician knowledge of child sexual abuse. *Child Abuse Negl* 1996; 20: 783-90.
9. Ward MG, Bennett S, Plint AC, King WJ, Jabbour M, Gaboury I. Child protection: a neglected area of pediatric residency training. *Child Abuse Negl* 2004; 28: 1113-22.
10. Arnold DH, Spiro DM, Nichols MH, King WD. Availability and perceived competence of pediatricians to serve as child protection team medical consultants: a survey of practicing pediatricians. *South Med J* 2005; 98: 423-8.
11. Borres MP, Hagg A. Child abuse study among swedish physicians and medical students. *Pediatr Int* 2007; 49: 177-82.



12. Canbaz S, Turla A, Aker S. Samsun merkez sağlık ocaklarında görev yapan pratisyen hekimlerin çocuk istismarı ve ihmali konusunda bilgi ve tutumları. *Step* 2005; 14: 241.
13. Şanyüz Ö. Çocuk istismarına hekimlerin yaklaşımı, İstanbul Üniversitesi, Cerrahpaşa Tıp Fakültesi, Adli Tıp ABD Yüksek Lisans Tezi, İstanbul, 2009.
14. Kocaer Ü. Hekim ve hemşirelerin çocuk istismarı ve ihmaline yönelik farkındalık düzeyleri, Marmara Üniversitesi, Sağlık Bilimleri Enstitüsü, Yüksek Lisans Tezi, İstanbul, 2006.
15. Al-Moosa A, Al-Shaiji J, Al-Fadhli A, Al-Bayed K, Adib SM. Pediatricians' knowledge, attitudes and experience regarding child maltreatment in Kuwait. *Child Abuse & Negl* 2003; 27: 1161-78.
16. Garrusi B, Safizadeh H, Bahramnejad B. Physicians' perception regarding child maltreatment in Iran (IR). *The Internet Journal of Health* 2007; 6: 7.
17. Lazenbatt A, Freeman R. Recognizing and reporting child physical abuse: a survey of primary healthcare professionals. *J Adv Nurs* 2006; 56: 227-36.
18. Van Haeringen AR, Dadds M, Armstrong KL. The child abuse lottery--the doctor suspect and report? Physician attitudes towards and reporting suspected child abuse and neglect. *Child Abuse Negl* 1998; 22: 159-69.
19. Jenny C, Hymel KP, Ritzen A, Reinert A, Hay TC. Analysis of missed case of abusive head trauma. *JAMA* 1999; 281: 621-6.
20. Flaherty E, Price LL, Wasserman R, Trowbridge M, OConnor K, Sege R. See no evil: Education and experience in child abuse. *Pediatrics*, ([www.aap.org/research/abstracts/04abstract23.htm](http://www.aap.org/research/abstracts/04abstract23.htm)).
21. Açık Y, Deveci SE, Oral R. Level of knowledge and attitude of primary care physicians in Eastern Anatolian cities in relation to child abuse and neglect. *Prev Med* 2004; 39: 791-7.
22. Socolar RR. Physician knowledge of child sexual abuse. *Child Abuse Negl* 1996; 20: 783-90.
23. Segal UA, Iwa Y. Perceptions of child abuse: A comparison of three professional groups in Japan. *Children Society* 2006; 18: 16-29.
24. Shor R. Pediatricians in Israel: factors which affect the diagnosis and reporting of maltreated children. *Child Abuse Negl* 1998; 22: 143-53.
25. Orhon Simsek F, Ulukol B, Bingoler B, Gulnar Baskan S. Attitudes of Turkish parents, pediatric residents, and medical students toward child disciplinary practices. *Child Abuse Negl* 2006; 30: 1081-92.