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# Organizational Solution Recommendations to the Problem of Child Pornography on the Internet

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**ABSTRACT**

The purpose of this study is to measure the level of awareness and perception of Turkish public personnel working in public institutions regarding the problem of online child pornography. Participants include 100 public officials positioned in various ministries. Quantitative research method was used in order to obtain information from participants. A questionnaire was submitted to the participants with meetings in person or via the Internet and data were collected. In order to ensure reliability and validity issues, expert opinion was sought as a means to measure validity and reliability. Necessary corrections were made based on the feedback provided. Outputs from the questionnaire were analyzed using the SPSS and the findings were evaluated. The results showed that participants who are rather young with high education levels, well-versed in national regulations, they have the knowledge about digital citizenship; however, it was found that they were not informed about technical issues such as international activities related to child pornography (CP), online child pornography, Darknet, p2p networks and hash databases. The findings showed that the reason behind the lack of awareness on some of these phenomena was the inherent problems in the education system and the insufficiency of the curriculum. Findings clearly show that it is necessary to establish an organic network among several ministries which are responsible for the fight with child pornography. Furthermore, to create a national CP images (Hash) database which can detect the IP number and other information of the ones who share such images online using a national analysis software is another solution proposed.

***Keywords:*** *child pornography, Darknet, Deepnet, internet, P2P networks*

## INTRODUCTION

In our time, as parents it is of utmost importance to be aware of the dangers which may be waiting for our children on the Internet. Awareness of the ways to protect children against such harmful environments has become a necessity for both parents and the children. In addition to individual measures of protection, public organizations and non-governmental organizations will need to take a number of measures in order to ensure a healthy future for our society. The need for prevention of, protection against and rehabilitation of child abuse on the Internet and development of relevant measures is one which cannot be overlooked.

Reports of international organizations made it clear that there is a significant increase in the statistics for online child abuse both in Turkey and in the world. In this context, as a country we need to define the steps we need to take and measures to be adopted by both public organizations and non-governmental organizations. “This is not about the disgusting photos available on the Internet,” said an officer from the Danish Police Department in an interview of Vendius. “This is a matter of life and death. There are sick people who rape babies and even murder them. How is that possible we have the necessary investigation tools when it comes to terrorism and drugs, but we do not have them with regards to child abuse?” He added (Vendius, 2015). Such an approach gives us a clear picture of what the future may bring if we do not take necessary actions and the future may even be here. Child pornography on the Internet has become the plague of our time affecting every nation. Taking necessary action against this plague, developing precautions, and coordinating international cooperation are among the needs of today’s nations. It is not enough for the organizations to focus their resources on local efforts if the aim is to overcome this problem. Social, legal and technical works focused on this issue are further needed, having built a department which will ensure

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national and international coordination. Next generations and even today's adults using the advanced technology need to learn how to avoid the dark side of the technology as consumers of the technology. The possibility of bringing up healthy generations in the future will depend on us, today's adults, and how much emphasis we lay on this problem. Considering the increasing rate of young population in Turkey, the need for taking more effective measures to protect our children in the online media becomes even more of a pressing need.

## LITERATURE REVIEW

The Dictionary of Turkish Language Association defined the term, 'Child,' as follows: "Young boy or girl, son or daughter in terms of generation, minor, male or female in its developmental stage between infant and adolescence, young boy or girl." According to the Article 6 of the Turkish Criminal Law, the terms is defined as "a person below the age of 18"; according to the Article 3 of the Child Protection Law, it is defined as "Anyone below the age of 18, even mature at an early age"; according to the Convention on the Protection of Children against Sexual Exploitation and Sexual Abuse, it is defined as "anyone below the age of 18"; according to the United Nations Convention on the Rights of the Child, it is defined as "A person below the age of 18, unless the laws of a particular country set the legal age for adulthood younger." Human beings, as the building blocks of the society, need to be brought up with the ethical and moral values historically defined remaining intact under the conditions of our age. In case of a failure in meeting necessity, it will be impossible to bring up healthy individuals under the conditions of our modern times, and individuals who do not share these values turn into masses in time failing to foster the national values, a mass which cannot have a feeling of belonging, and which is individualistic and self-centered. Therefore, it is one of the obligations of our government to take necessary measures to keep the nation away from such perversions which are in total disagreement with the shared morals while adapting to the technology at the same time. It is possible to effectively serve for these duties using the collective consciousness in an efficient manner. An effective fight against such perversions is needed with the personnel working for organizations and institutions in different fields acting together. In order to be able to ensure this front, an organization needs to be established to coordinate national and international problems involved in child pornography as suggested by Ünveren and Symth (Smyth, 2008; Ünveren, 2010). According to Joffres, law enforcement must be provided with training against online child abuse to improve their capacity to fight against this phenomenon (Joffres, 2012).

The risks involved in a child's internet use may present themselves in many forms. According to a study conducted in Malaysia, there are 54 different types of risk which children may face online (Teimouri, Hassana, Bolonga, Dauda, Yussuf, & Adzharuddina, 2014). Sexting is a term coined quite recently to define the practice of sharing one's naked photos and videos online through messages and multimedia messages (Kopecký, 2015). A survey conducted as part of the EU Kids Online Project revealed that the exposure to sexting is at the level of 15% and researchers observed that the findings of both studies were in agreement. (Çağıltay, Kaşıkçı, Karakuş, Kurşun, & Ogan, 2014).

Consumers of child pornography commonly use tor, a browser which ensures the encryption of user ID and location, in order to access the underground world of the Internet, the Darknet, or prefer P2P file sharing and distribution (Steel, 2015). Law enforcement of many nations track online child pornography, keeping tap on the P2P networks. Moreover, many nations have formed dedicated police teams to fight against online child pornography to track down the perpetrators of this type of crime. International organizations such as Interpol contribute to police operations at varying levels globally in order to uncover the traffic/trade of illegal material on the Internet (Frei, Erenay, Dittmann, & Graf, 2005). A number of complex systems, namely, Roundup, Gridcop, and Ephex, are developed in order to find the IP addresses of those who get involved in illegal P2P activities as a result of the cooperation between law enforcement and IT specialists. Roundup software is designed to find child pornography images available in the folders of such P2P networks (Liberatore, Erdely, Kerle, Levine, Shields, 2010). Roundup is a software published by Massachusetts Institute of Technology and the first testing of the

beta version of the software dates back to 2009. In 2013, more than 2,000 US police officers used several versions of the software were used on gnutella and other P2P networks. Since 2009, the total number of arrests reaches up to 4,000 people with charges of storage and/or distribution of child pornography (Wolak, Liberatore, & Levine, 2013). A number of smart systems are developed in order to detect child pornography material in real-time setting. A number of web technologies, from web-based email servers to live chat rooms, can be used to transfer child pornography material (Bonfils, 2013). Email servers operated by Google and Microsoft and Google drive storage servers use digital signatures (Prichard, Watters, & Spiranovic, 2011). When a file's digital signature matches child pornography, the service provider contacts the law enforcement and provides further information about the situation (McKalin, 2014). The State of Florida, USA, have issued the "Law on Internet Crimes Against Children" in 2007. This law obliged the sex offenders to inform the law enforcement their email addresses and nicknames they use on chat rooms. If searching child pornography material on Google's search engine, North American users will view the warning of Google as shown in Image 1. This warning reads, "Child abuse imagery is illegal.

At Google we work with child protection experts to find, remove and report this material because we never want it to appear anywhere on our products, including our search results. To report child sexual abuse content or to find help for a child in the Us, please contact the National Center for Missing & Exploited Children."

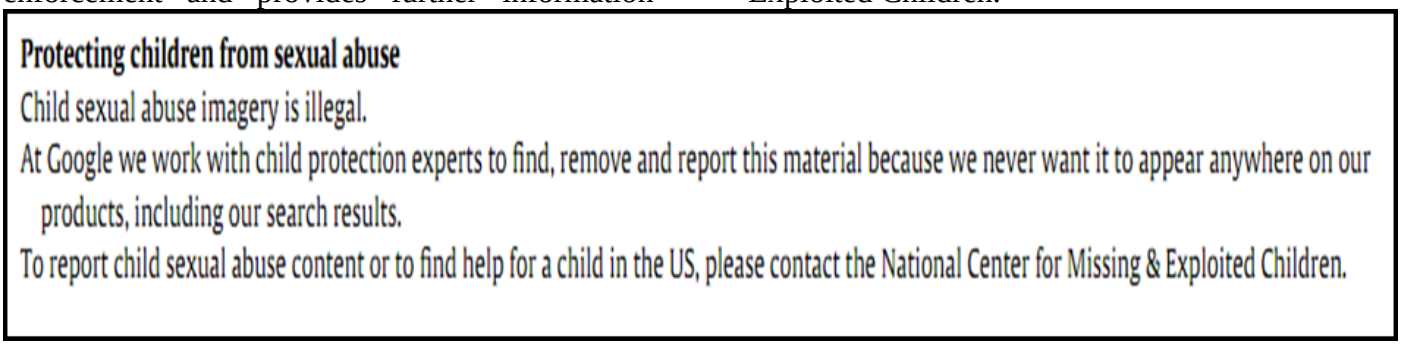



**Image 1.** Google's warning pop-up

Just like Google, Bing search engine also introduced a warning stating that child pornography is illegal as shown in Image 2.

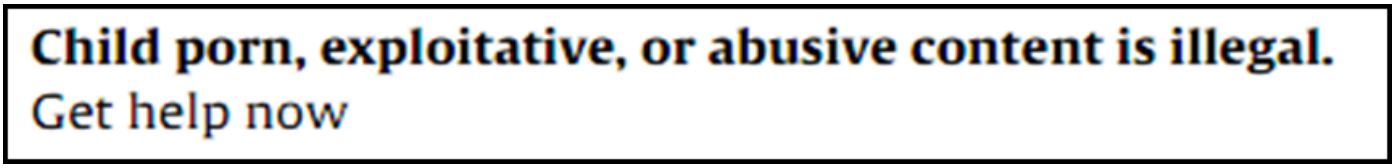



**Image 2.** Bing's warning pop-up

## METHOD

### Research design

Research method consists of a plan developed by the author in order to explore the answers to the study questions and to test the hypotheses of the study (Creswell, 2005). Recently, there is an ongoing trend in using both quantitative and qualitative research methods in the literature. This study is also designed to use an enriched model incorporating quantitative and qualitative methods. In this enriched design, quantitative and qualitative data were collected simultaneously and the results were used to give insight into the research problem. Both quantitative and qualitative data have the same level of priority. One is not more significant than the other (Bogdan & Biklen, 1998).

Qualitative data is used in order to increase the reliability of the quantitative data collected for the same field, to offer descriptive information, and to interpret and develop recommendations (Yıldırım & Şimşek, 2013). Quantitative research method, on the other hand, produces generalizable results, makes it possible for comparisons between

different groups, tests accuracy levels of theories and explores the relations within a certain structure.

**Data collection tools**

A semi-structured interview form was used as a tool to collect qualitative data and a 25-item questionnaire was used as a tool to collect quantitative data. The universe of the study consists of all the employees working for the head offices of public organizations under legal obligation of preventing child pornography in Turkey.

**Participants**

The sample of this study consists of 80 participants who are employed in the headquarters of aforementioned organizations located in Ankara.

**Data analysis**

The questionnaire prepared in order to measure the level of perception of the sample was reviewed by 2 specialists. Approval of ethics commission and necessary legal permits were obtained before submitting the questionnaire in these organizations. In order to reflect the main purpose on the questionnaire, the feedback about the questionnaire was sought after and necessary corrections were made. Measurement validity and reliability values were measured using SPSS software and the relevant Cronback's alpha value was found 0.902 for the questionnaire. Results show that the survey is reliable and is able to measure the thing to be measured at a high level. Qualitative research method uses data collection methods such as observation, interview, and document review following a process aimed at revealing the perceptions and events in a natural, realistic and holistic manner (Ekiz, 2003). Quantitative research method, on the other hand, helps reveal complex personal and emotional problems, analyze the required data in an in-depth manner, make it possible to reach at the necessary answers, offer the flexibility to adapt to changing conditions while making it possible to change the number and order of questions asked; that is why semi-structured interview method was used in this study (Çıngı, 1994). Moreover, two specialists were asked open-ended questions about the semi-structured interview questions; their responses were noted and reflected on the thesis study after consulting to their detailed opinion via email. Qualitative research uses data collection methods such as observation, interview, and document review following a process aimed at revealing the perceptions and events in a natural, realistic and holistic manner (Yıldırım & Şimşek, 2013). Only the interview method was used in this study as the qualitative research method. Interviewing is recognized as the most commonly used data collection tool in qualitative research.

Stewart and Cash (1985) defined interview as "a reciprocal and interactive communication process based on questions and answers for a predefined and important purpose". The reason behind the selection of semi-structured interview was that it allows for defining the similarities and differences of the data collected from respondents. Two staff members who were involved in this study on a volunteering basis were asked four questions. The interview environment was the offices of the personnel where they felt comfortable. The interviews were recoded taking notes and the specialist was consulted for his opinion via email. Content analysis was performed on the interview notes taken by the author and the information received via email. These notes and opinions were then controlled for the second time by the author and his thesis supervisor in order to eliminate any errors. In order to ensure data analysis, data obtained from the interviews were reviewed independently by the author and two specialists and the information obtained was coded with regards to the theme and subthemes involved. Findings and results were then derived having combined qualitative and quantitative outputs.

**RESULTS**

Table 1 shows the demographic data obtained from the survey submitted to the research population as part of the quantitative study.

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**Table 1.** Demographic data

| | | F | (%) | Valid (%) | Total (%) |
|---|---|---|---|---|---|
| Institution Participation Rate | Min. of Interior | 16 | 20.0 | 20.0 | 20.0 |
| | Min.of Fam.-Soc. Policy | 24 | 30.0 | 30.0 | 50.0 |
| | Min. of Health | 19 | 23.8 | 23.8 | 73.8 |
| | Gen. Direct. of Security | 21 | 26.3 | 26.3 | 100.0 |
| Operation Time | 0-2 year | 23 | 28.7 | 28.7 | 28.7 |
| | 3-5 year | 21 | 26.3 | 26.3 | 55.0 |
| | 6-10 year | 16 | 20.0 | 20.0 | 75.0 |
| | 11-15 year | 12 | 15.0 | 15.0 | 90.0 |
| | 16-20 year | 7 | 8.8 | 8.8 | 98.8 |
| | 21+ years | 1 | 1.3 | 1.3 | 100.0 |
| Education Status | Master's degree | 21 | 26.3 | 26.3 | 26.3 |
| | Faculty | 52 | 65.0 | 65.0 | 91.3 |
| | Vocatıonal School | 4 | 5.0 | 5.0 | 96.3 |
| | High School | 3 | 3.8 | 3.8 | 100.0 |
| Agency Employee Age Status | 20-23 | 1 | 1.3 | 1.3 | 1.3 |
| | 24-28 | 17 | 21.3 | 21.3 | 22.5 |
| | 29-33 | 24 | 30.0 | 30.0 | 52.5 |
| | 34-38 | 17 | 21.3 | 21.3 | 73.8 |
| | 39-43 | 14 | 17.5 | 17.5 | 91.3 |
| | 44-48 | 5 | 6.3 | 6.3 | 97.5 |
| | 49-53 | 1 | 1.3 | 1.3 | 98.8 |
| | 54-58 | 1 | 1.3 | 1.3 | 100.0 |
| Marital status | Married | 59 | 73.8 | 73.8 | 73.8 |
| | Single | 19 | 23.8 | 23.8 | 97.5 |
| | Divided | 2 | 2.5 | 2.5 | 100.0 |
| Child Status | Available | 42 | 52.5 | 52.5 | 52.5 |
| | Absent | 38 | 47.5 | 47.5 | 100.0 |
| Foreign Language Speaking Level | Beginner | 34 | 42.5 | 42.5 | 42.5 |
| | Preintermediate | 21 | 26.3 | 26.3 | 68.8 |
| | Intermediate | 21 | 26.3 | 26.3 | 95.0 |
| | Up-Intermediate | 3 | 3.8 | 3.8 | 98.8 |
| | Advanced | 1 | 1.3 | 1.3 | 100.0 |

According to Table 1, majority of the participants of the study are between the ages 24 and 38, married with children, therefore, more sensitive to the online child pornography problem. The majority of the participants hold a degree, however, they had little knowledge about technical information about Darknet and P2P networks. Although the education level of the participants was rather high, the general misinformation about the age of being a child raised red flags about the shortcomings of the education system in Turkey. Results show that the participants were aware of national regulations concerning child pornography, while many were unaware of international


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conventions, international organizations and international hash database; and the reason behind this lack of information was accounted for with the fact that the participants are not employed in a department specialized in the fight against child pornography. Furthermore, in order for international activities in this field to be tracked instantaneously, knowledge of foreign language must be at a higher level and it is assessed that international regulations cannot be followed due to the lack of education in foreign languages. Majority of participants already knew where and how to report and what to do if they detect a child pornography website. The findings further reveal that the participants are aware of the fight law enforcement gives against child pornography, and that almost half of the participants did not know who is authorized to issue an expert's opinion about child pornography related crimes. Observations showed that most of the participants did not have information on preventive and protective measures about child pornography and sexting. The majority of participants are knowledgeable about digital citizenship and the need to provide training in this regard, and they agree with the idea that it is necessary to provide further education on this subject at the elementary and high school level. Data obtained showed that the participants are knowledgeable about how child pornography is shared on the Internet. However, the results of this study uncovered shortcomings of the educational system even though the participants were young and well-educated. According to the findings of the qualitative study, among the governing ideas are; child pornography and online child pornography are sociological and psychological problems rather than cybercrimes; and it is necessary to found a separate general directorate dedicated to this problem or an umbrella department to organize provincial units . Another note should be made to explain that founding such a department will be an important step for Turkey. In order to prevent psychological consequences of investigating, analyzing and prosecuting online child pornography crime in law enforcement, it is suggested to have 15 minutes of a break for playing games with many colors after a block of 45 minutes work which is followed by a 15 minutes rest, as it is the case in European countries. Information about sex offenders must be publicly available, and the offenders must be obliged to notify the law enforcement and civilian authorities when they move to another city or district (Şen, 2017). Whenever a child abuse material is viewed the abused child's suffering continues. There is consensus about criminalization of storage of child pornography even one does not have the intention to distribute or produce it. The coverage of online predators is also expanded to cover any sexually motivated talk, text, and image sent to children without the intention to meet with the child in real life. Such a perspective also found its reflections in the nations' legal system and any online threat against children are addressed under child abuse. Unfortunately, Turkey does not seem to have adopted the aforementioned opinion when we look into the country's legal system to its organizational structure and to individual approaches. First of all, Turkish Criminal Law leads to the perception of "victimless crime" having positioned child pornography under crimes against general morals and not against children.

Investigations involving child pornography are held by the Department of Cyber Crimes, while sexual abuse cases are handled by the Office of Juvenile Crimes and by Child Protective Services in some provinces. At the level of department heads, on the other hand, Heads of Department of Cyber Crimes and Department of Public Order of the General Directorate of Security coordinate the proceedings. This organizational structure needs to be organized to have a single central management upon the possible changes in the Turkish Criminal Law. A single branch on the provincial level and a new and specific department, say the Department of Child Protection, on the central level must be in charge of both child pornography and physical child abuse cases. Expert's opinion must follow both the expert's opinion and the structure suggested by the surveys and the literature. For example, when one uploads child abuse material known for its content (i.e. been circulated for a time) to US-based websites such as Facebook or Twitter are, these websites detect this material using several software, delete the material and shut down the user's account. Information about the user, on the other hand, is reported to National Center for Missing and Exploited Children (NCMEC) for the legal proceedings. Some online abusers require the new members of the virtual groups they found to share a number of child abuse material to approve their membership. If such is the case in Turkey, it is impossible for the law


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enforcement to infiltrate such a group. The reason behind it is that this type of a group is not evaluated as a traditional criminal organization and that they have a condition to commit a crime for membership. However, British, Belgian and Dutch law enforcement are able to infiltrate such groups using the child abuse material approved as "controlled images." In addition, it is almost impossible to decode the data on the server as the perpetrators share these images using P2P encoding software. Germany uses a special software, "Online-Durchsuchung", in order to detect such communication before it is encrypted. This software captures the content of the communication before it is encrypted and then sends the information to the law enforcement. One must accept that one cannot fight against this type of crime using traditional methods. Moreover, Interpol introduced a project, BASELINE, in 2014. The material used in BASELINE project are chosen from the images displaying sexual acts of real children under 13 which is considered a crime both in Turkey and in the World. The purpose of this study was to prevent the storage and sharing of such material in the local Internet websites published in countries just like the practice of the US. The logic behind the BASELINE project may also be used in a way to reduce the exposure of law enforcement and public prosecutors to child abuse (Şen, 2017). The regulations related to child pornography are summarized below in general. The historical timeline of the regulations enforced in the world about children and child pornography is summarized below.

Following the end of WWI, children and women were the ones who suffered the most in Europe and the Far East. Due to the suffering of especially the children, a non-governmental organization, Save the Children International, was founded in Geneva in 1920 in order to define and enforce what is needed for children. Nevertheless, the League of Nations was established at the end of the WWI in order to contribute to the universal peace and they have attempted to define the living standards nations need to abide by having drawn attention to the need for building a peaceful and happy world. This League prepared the International Declaration of the Rights of the Child. This declaration was then accepted in the General Assembly of the League of Nations dated September 26, 1924. Among the national leaders who signed the Declaration consisting of 5 items was the founder of the Republic of Turkey, Mustafa Kemal. Following the declaration of WWII in 1939, both the Declaration and the League of Nations has become void.

Established after the end of WWII, the United Nations suggested to revive the Geneva 1924 Declaration of the Rights of the Child in 1946 in order to "connect the nations of the world as they did in 1924". 2 years after this suggestion, in 1948, the 'Universal Declaration of Human Rights' was accepted in the General Assembly of the UN. The need for providing special attention to children is defined in the declaration of the Rights of the Child as accepted by the General Assembly of the United Nations. Convention on the Rights of the Child, was accepted in the General Assembly of the United Nations on 20 November 1989. The first legal regulation related to child pornography was the Law on the Protection of Children Act issued in the UK in 1978. According to this act, taking vulgar or fake photos of a child or allowing others to take such, distributing or exposing such photos were considered crime. The US issued the Child Pornography Prevention Act of 1995 and the Act involved sanctions at both federal and the state level. The Act of 1995 was amended in 1996 in a way to consider any child pornography material created using computer software as real child pornography material. In 1998, Child Online Protection Act was passed in the US with a motion to protect children against pornographic and sexual material. Council of Europe Convention on the Protection of Children Against Sexual Exploitation and Sexual Abuse was opened for voting in Lanzarote, Spain in 2007 and was accepted. Also signed by Turkey in December 7, 2011, the Lanzarote Convention took effect in April 1, 2012. Having been prepared by the member states of the European Council and opened to signing in November 23, 2001, the "Budapest Convention on Cybercrime" took effect in July 1, 2004 and it allows nations outside of the EU to be a party to the Convention. Budapest Convention on Cybercrime was signed by Turkey in 2010 and is now a part of the national law having taken force in May 2, 2014. Turkish Criminal Law no. 765 had a provision about child pornography. However, Turkish Criminal Law no. 5237 which took effect in 2005 regulates such crimes under Obscenity under the Article 226 Paragraph 5. A literature review


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showed that many countries have established an organization which allows for national and international coordination against online child pornography and that measures dedicated for this type of crime are taken. It is found that Law enforcement commonly track the users of P2P networks and Darkent with the help of AI software.The fact that there are several possible risks which may affect children on the Internet and that there is an increase in the child pornography crime in the recent years call for measures to be taken against such risks. Researchers agree that there is no difference between the perpetrators of online child pornography and physical child pornography. It is necessary to educate children on sexting, a new addition to the online risks which is quite delicate and important. A child must be aware of the possibility of a naked picture of himself/herself which he/she shares with an intimate person or with someone they love can be used to blackmail him/her by that person or others in a later time. Children in Turkey are searching for cartoon characters such as "pepe" on search engines such as Google, Yandek, Bing, etc. Such searches made outside of family and child profiles may produce results including child pornography material included in posts shared in social media networks such as Twitter (Çocuk pornografisi Materyali, 2017). Children must not be able to see these materials for their healthy psychological development.

## DISCUSSION AND CONCLUSION

In the light of the assessment of statistics for children's access to online networks, the risks involved, statistics for child pornography, the projections and estimations of the national and international agencies fighting against child pornography, expert's opinions and survey results, it is obvious that online child pornography problem is a very important problem which is considered as the technological plague of our times. The fight against online child pornography problem ranks high in the list of a government's duties with an asymmetrical effect. The results obtained from the literature review and the survey made in this study along with the qualitative findings support each other. It is important to act upon the following results and recommendations if it is to be a social nation in terms of child protection and bringing up young and strong individuals. Children, and especially the adolescents, enjoy using chat rooms. These chat rooms can be a great place for predators from all over the world to meet with children. In this sense, chat rooms can become very dangerous places. Our children may not always have the right judgment of a stranger that they may lie or conceal their identity. Children may also be targeted by online bullies and may be exposed to hate speech. Another serious concern is that children may disclose private information about their family or friends without suspecting which may lead to fraud or other crimes (Türk Telekom Güvenlik, 2016). The following is a list of things organizations must do; first of all, an umbrella agency similar to NCMEC in the US, and NCA in the UK must be established in order to ensure national coordination and cooperation as required by the Lanzarote Convention as this field concerns many departments. As it is the case in NCMEC in the US, this unit should be a unit dedicated not only to protect children online, but also to take strategic decisions that can conduct any kind of task related with missing and victimized children. In order to do so, a mixed model can be used involving a sociologist, health specialist and personnel from other relevant departments.

Attention must be paid to preventive and protective measures with the awareness that our children, who are our future, are of utmost importance. It is necessary to raise awareness in the personnel of the Ministry of Internal Affairs, Ministry of Justice, Ministry of Family and Social Policies, Information and Communication Technologies Authority, General Directorate of Security and General Command of Gendarmarie with trainings against child pornography. Nevertheless, it is also necessary to raise awareness in the relevant personnel and the society itself with training programs, seminars, symposiums, etc. Having prepared public service announcements on the child abuse, these materials must be published on online spaces, TV and social media accounts; and the awareness of both the agency personnel and the society must be raised with brochures and fliers. Following a domestic and international training programs involving the activities such as training of the instructors, the information must be communicated to relevant departments in a short time with internal training programs. It may be a way to address this issue communicating the parents of the risks available in the Internet.


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Meetings, seminars, symposiums, etc. may be arranged with the cooperation of government agencies and non-governmental organizations. Using e-government facilities with communication possibilities such as website, call center, SMS, etc. it is necessary to be able to easily receive the alerts and complaints. As seen in the example of Interpol, a database similar to that of INTERPOL Child Abuse Image Database (ICAID) can be developed with national child pornography images digital seal and this database can be made available to the access of the law enforcement.

For example, practices such as controlled access to a hash database which is to be created in order to check rapidly if an image contains child pornography material using a forensic IT software. Creating a database of the victimized children, Child Victim Identification System should be developed in the digital environment. This will be developed using a child pornography database and will help identify the children in the image and offer protection, care, etc. in this regard. A national digital signature database may be created for missing children. Nevertheless, a website dedicated to find missing children at the national level may offer identity and other information of the missing child inviting the society to take part in this mission. Using public service announcements, awareness on this website can be raised, which in return will ensure missing children are recognized and reported when they are spotted. INTERPOL International Child Sexual Abuse Database should be used efficiently until a national child pornography digital signature database is developed. International cooperation must be promoted and international relations must be improved. It may be possible to use a nationwide facial recognition system in order to find the missing children who are abused in a shorter time. In the light of literature review, law enforcement may go beyond the traditional methods of fighting with this crime as seen in the examples of Belgium, Holland and the UK. Having paved the way for this practice with legal regulations, undercover Internet investigators may be provided with images to trade with the suspects online, if necessary. It may be possible to build controlled images using the images with previously detected digital signature values.

This type of crime requires proactive methods to fight with it and special teams must be built. Monitoring the files available in a folder shared using P2P network software is of utmost importance. When child pornography materials are detected in the folder(s) made public, IP addresses of the people involved in this act must be obtained by law enforcement with special care to the right to privacy, and the legal regulations must be enforced to allow for it. Law enforcement may ensure the training of personnel specialized in this type of crime with further international cooperation. Law enforcement may increase their cooperation with agencies such as SELEC, CEOP, NCMEC, IWF, ENACSO and CEPOL in order to better process Tor and Darknet investigations. Law enforcement and public prosecutors may take part in the BASELINE project. Taking preventive measures for P2P networks, attaching importance to international cooperation, and increasing the fighting capacity, awareness and consciousness of the institutions are required. Law enforcement may focus its efforts on tracking and detecting child pornography material shared on P2P networks, social media platforms and websites, and Darknet. Special teams must be created within the law enforcement in this regard. Just like any law enforcement officer can regularly patrol the streets, these specialists must be able to virtually patrol the cyber environment and the legal basis of doing so must be provided. In child pornography operations, criminals must be exposed using mass media, and national consciousness and reaction must be provided psychologically. In order to prevent psychological consequences of investigating, analyzing and prosecuting online child pornography crime in law enforcement, the suggestion is to have 15 minutes of a break for playing games with many colors after a block of 45 minutes work which is followed by a 15 minutes rest. Any persons assigned to posts related with this crime must go through psychological evaluation once at least in 4 months. A list of keywords related to child pornography must be prepared by law enforcement and the law enforcement must be taught these keywords are useful in detecting people involved in child pornography. The use of such keyword lists in login detection systems, filtering software and forensic IT analyses is importance for law enforcement.


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It is necessary to raise awareness in individuals who are employed in fields such as education, health, social protection, justice, law enforcement, sports, culture and entertainment about child protection by the Ministry of Family and Social Policies. Any individuals operating in these fields must have sufficient information about the requirements regarding children. In addition to psychological support to the victims whose images are shared or published on the Internet, rehabilitation, support and help must be provided. With respect to the provisions of the Lanzarote Convention, the Ministry of Justice must define child pornography in Turkish Criminal Law and other regulations to ensure compliance with international conventions. Turkish Criminal Law must be amended in order to fully integrate the provisions of the Lanzarote Convention. Lanzarote Convention defines children producing, possessing, transferring their own child pornography material to their peers or adults; transferring or sharing child pornography material of other children with their peers or adults, sharing with or transferring child pornography material to other adults, adults producing, storing, sharing child pornography material with other adults and/or other children are considered offense. Hence, Turkish Criminal Law must be amended in order to eliminate discrepancies. Turkish Criminal Law must define all the actions and behaviors involved in production, displaying or supplying, sharing or transferring child pornography of oneself or others, storage of such, making child pornography available intentionally using information technologies as offense. When it comes to the punishment, the crime of producing child pornography must entail the heaviest punishment and the remaining crimes must be planned accordingly. When defining child pornography, the description must be stated in a way to involve any act of representing an adult as a child in addition to the real child pornography images. Moreover, Paragraph 4 of the Article 134 of the Code of Criminal Procedure requires a copy of the digital material belonging to the suspect to be returned to the suspect. In case any material belonging to the suspect includes child pornography, then returning a copy of such material to the suspect must be out of question. Just like returning a copy of the digital material including credit card data of thousands of people to a suspect would not be appropriate. The right course of action here would be erasing the child porn material or credit card information of the digital material in an unrecoverable manner and only after this returning the copy to the suspect. The Code of Criminal Procedure need to be amended as required to accommodate the necessities of this crime in preventive and forensic criminalization regulations. As it is the case in the UK, first, a legal framework must be developed, and law enforcement or the related department personnel must be trained as secret Internet investigators, and an infrastructure should be set up so that perverted suspects and criminals can be caught in the cyber environment. Article 139 of Code of Criminal Procedure defines the duties of an investigators and do not include any references to covert Internet investigators. Similar to other countries, the legal regulations regarding a Covert Internet Investigator can be defined also in Turkey. The Ministry of National Education needs to provide mandatory classes for students at elementary and high school level at least 2 hours a week to cover possible risks available on the Internet and the ways to protect against such risks, having prepared educational modules on digital citizenship to cover such subjects. As practiced in the US, private units must be created to protect our children, having developed the workforce to operate the program on investigating cybercrimes against children. Again building on the US model, seminars and training modules focusing on "What should school personnel do?" must be developed, and teachers and students should be trained in this regard.

The Ministry of Labor and Social Security may define the preconditions of being employed in fields such as education, health, social protection, justice, law enforcement, sports, culture and entertainment about child protection which must at least include the requirement of not being convicted of any crime related to child pornography. The Ministry of Health must provide the victims of such crimes with short-term and log-term physical and psychological support and help. Training programs aimed at the personnel who are responsible for providing the psychological support must be available. Information and Communication Technologies Authority must take legal and technical action to display a warning text to anyone who inquires child pornography material with a Turkish IP address on Internet search engines such as Bing, Google, Yandex, etc. stating that storage, viewing, downloading, and sharing


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child pornography material are prosecutable offenses. With the cooperation of universities and law enforcement agencies, development of a national analysis software (such as Roundup) which is able to identify the IP number and other information of those who share child pornography images online is a must.

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