Research Article

Türk Fen ve Sağlık Dergisi
Turkish Journal of Science and Health

Volume 2
Number 3
Year 2021
Pages 14-20

e-ISSN: 2717-7173 https://dergipark.org.tr/tr/pub/tfsd

Received: 12.05.2021 *Accepted:* 21.08.2021 https://doi.org/10.51972/tfsd.936857

Determining the Level of Knowledge Regarding Covid-19 and Protection Measures of Children Between Aged 8-12 Years

İlknur Yıldız [1], **Fatma Tok Yıldız** [2]*

[1]Department of Nursing, Faculty of Health Sciences, Sivas Cumhuriyet University, Sivas, Turkey
[2]Department of Medical Services and Techniques, Vocational School of Health Services, Sivas Cumhuriyet University, Sivas, Turkey

ABSTRACT:
Purpose: This study was conducted to determine the the knowledge level of aged 8-12 years children about COVID-19 and protection measures.
Material and Methods: The sample of the descriptive study consisted of 323 children aged 8-12 years. The data were collected online with Descriptive Characteristics Form and the Information Level Form for COVID-19 and Protection Measures prepared by the researchers, and were shown with number, percentage, mean, standard deviation and chi-square analysis.
Results: The mean age of the children 9.15 ± 1.28 and 54.8% were girls. 63.2% of the children stated that they learned information about COVID-19 from television. It was found that 90.1% of children stated that COVID-19 changed their hygiene habits, 80.2% of them stated that the most effective measure to protect against COVID-19 was wearing a mask, 99.4% paid more attention to hand hygiene. It has been determined that compliance with hygiene and protection measures is higher in girls and those who have had COVID-19 infection in their family.
Conclusion: It has been determined that the majority of children have information about COVID-19 and protection measures and pay attention to wearing masks and hand hygiene. Children, who are an important group in terms of carrying and transmitting the infection, should ensure the continuity of their adaptation to protection measures by eliminating their missing information on the subject.
Keywords: *Child, COVID-19, information, protection*

**Corresponding author: Fatma Tok Yıldız, email: fatmatok@yahoo.com*

INTRODUCTION

The COVID-19 pandemic, which emerged in December 2019, is a serious health problem humanity has faced (WHO, 2020). Children are among the groups affected most by the changes brought about by the pandemic because of their developmental characteristics (Yüksek Usta and Gökcan, 2020; Akoğlu and Karaaslan, 2020; Yavaş Çelik, 2021). According to the data, 1-5% of COVID-19 cases consist of children, and deaths are less in children compared to adults (Ludvigsson, 2020). The American Pediatric Academy (APA) reported that children constitute 13.8% of the total cases, and hospitalization due to COVID-19 was not common in children (APA, 2019). However, children constitute a risky group in terms of transmission and spreading COVID-19 infection (Yavaş Çelik, 2021; Pars, 2020; Palanbek Yavaş and Arga, 2020). Even if they do not show any symptoms, children can infect people of all ages. Learning the protection methods and having the correct implementation of these methods reduces the risk of being infected by this disease and the spread rate of the disease. For this reason, it is important that children have knowledge of COVID-

19 infection and protection measures (WHO, 2020; Pars, 2020; Erdinç et al., 2020; Kardeş and Örnek, 2020). The precautions must be explained to children, such as hand hygiene, mask use, social distancing rule, staying away from ill people, and not touching surfaces in crowded environments. It was determined in previous studies that children identify COVID-19 infection as a serious disease, fear it, and apply protective measures. It was also reported that the most important knowledge sources for disease and protection measures are parents and the media (Yüksek Usta and Gökcan, 2020; Persici Toniolo et al., 2021). In a study conducted with parents, parents were found to have knowledge of COVID-19 infections and transmission risks (Abuhammad, 2020). It was seen in the literature review that there are a limited number of studies conducted to determine the level of knowledge of children on COVID-19 infection and protective measures from their parents, who constitute a significant source of knowledge for children. For this reason, this study was conducted to determine the level of knowledge of 8-12-year-old children on COVID-19 and protection routes. We believe that the results of the study will contribute to the determination of the awareness of 8-12-year-old children on COVID-19 and protection routes, and to the development of education programs.

MATERIALS AND METHODS

Design and Aims of the Study

This study, which was conducted to determine the level of knowledge of 8-12 year old children about COVİD-19 and protection measures, is a cross-sectional descriptive type.

Sampling and Participants

The population of the study consisted of children of 8-12 years of age living in Sivas city center, and the sampling consisted of 323 children who agreed to participate in the study between 04/02/2021 and 01/03/2021.

Data Collection Tools

The data were collected with the Introductory Characteristics Form, knowledge level on protective measures regarding COVID-19.

Introductory Features Form: In this form that was prepared by researchers, there are 9 questions on age, gender, class, mother's/father's educational level, having internet connection and presence of digital tools such as smartphone, tablet, and computer at home, and whether there are any family members in the family or in the environment who had COVID-19, and information sources about the disease.

Knowledge Level on COVID-19 and Protective Measures: This form that was developed by the researchers consisted of 14 questions on COVID-19 Infection, contamination routes, hand hygiene, hand washing technique, eau de cologne/disinfectant use, and mask use.

Ethical Aspect of the Study

Before the study was commenced, the Non-Interventional Clinical Research Ethics Committee of a university was received (Decision No: 2020-12/05). The consent was obtained from the parents through online forms.

Data Collection

The link that was prepared by the investigators on Google by preparing an online questionnaire was sent to the parents who had children 8-12 years of age around the researchers. The aim of the study was explained to the children on the first page and they were asked to complete the online questionnaire form.

Evaluation of the Data

The SPSS 22.0 statistical program was used for the analysis of the data. Categorical data were shown as numbers and percentages. The Chi-Square test was used when comparing the descriptive characteristics of the participants (i.e. age, gender, parents' educational levels, etc.), and the knowledge levels on COVID-19, and protective levels. The significance level was taken as 0.05.

RESULTS

The mean age of the children who participated in the study (n=323) was 9.15±1.28 (min=8, max=12), 54.8% were girls, and 30.7% were in third grade. A

total of 42.7% of the fathers and 35.3% of the mothers were university graduates, and 63.2% of children said that they had knowledge of COVID-19 from television. A total of 70% of the children had individuals with COVID-19 infection in the family (Chart 1).

A total of 98.1% of the children participating in our study stated the country from which COVID-19 first appeared was China, and 87.6% said that COVID-19 was infected through the respiratory route. All children said that masks must be attached to the nose. In our study, it was found that the responses of children regarding the protective measures regarding COVID-19, i.e. wearing masks, maintaining social distance, washing hands, and not entering crowded environments unless necessary were 33.4%, 20.3%, 20.1%, 26.2%, respectively. All of the children complied with the restriction decisions regarding COVID-19. Also, 92.9% warned their families to comply with the restriction decisions regarding COVID-19 (Table 1).

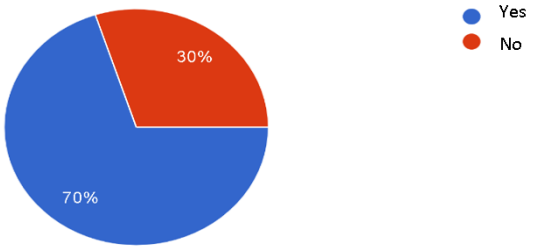

Chart 1. Having COVID-19 infection in the family

Table 1. Knowledge levels of children on COVID-19 pandemic

	n	%
Country COVID-19 first emerged		
China	317	98.1
Japan	6	1.9
COVID-19 transmission routes		
Respiratory	283	87.6
Hands	40	12.4
Correct use of masks		
Mask should include the nose	323	100
Mask should only cover the mouth	-	-
	Yes n (%)	**No n (%)**
Practices effective in protecting from COVID-19*		
Wearing a mask	258 (33.4)	65(12.5)
Social distancing	157 (20.3)	166 (31.9)
Washing hands	155 (20.1)	168 (32.3)
Not entering crowds unless necessary	203 (26.2)	120 (23.1)
Obeying COVID-19 restriction measures	323 (100)	-
Warning the family to obey the restrictions regarding COVID-19	300 (92.9)	23 (7.1)

*More than one option was marked and the percentage was calculated over the total number

A total of 90.1% of the children participating in our study said that COVID-19 changed hygiene habits, and 99.4% said that they paid more attention to washing their hands, and 99.4% of the participants washed their hands when they came home. Also, 95% of children washed their hands for at least 20 seconds with soap and water due to COVID-19; and 91.3% of children used eau de cologne or disinfectant for their hands when they were outside. A total of 96.3% of the children paid attention to changing their masks frequently because of the possibility that they may be dirty. Also, 94.1% of the children who participated in the study said that they warned other members of their families to wash their hands, and 89.8% warned them to change their masks when they became dirty (Table 2).

Table 2. Knowledge levels of children's hygiene applications to be carried out in COVID-19 pandemic

	Yes n (%)	No n (%)
COVID-19 changed hygiene habits	291(90.1)	32 (9.9)
Caring more about washing hands due to COVID-19	321(99.4)	2 (0.6)
Washing hands after coming home from outside	321(99.4)	2 (0.6)
Washing hands for at least 20 seconds with soap and water due to COVID-19	307 (95)	16(5)
Using eau de cologne or disinfectant for hands when outside	295 (91.3)	28 (8.7)
Caring for changing masks frequently as they may be dirty	311(96.3)	12 (3.7)
Warning other family members for washing hands when they come from outside	304 (94.1)	19 (5.9)
Warning other family members for changing masks when they are dirty	290 (89.8)	33 (10.2)

Table 3. Knowledge levels of children on protective measures regarding COVID-19 according to gender (n=323)

	Gender			
Protection Measures	**Female**		**Male**	
COVID-19 changed hygiene habits				
Yes	166	93.8	125	85.6
No	11	6.2	21	14.4
Test/p	*5.981/0.014*			
Washing hands for at least 20 second with soap and water due to COVID-19				
Yes	173	97.7	134	91.8
No	4	2.3	12	8.2
Test/p	*6.035/0.014*			
Using eau de cologne or disinfectant for hands when outside				
Yes	170	96.0	125	85.6
No	7	4.0	21	14.4
Test/p	*10.990/0.001*			
Warning other family members to wash their hands when they come from outside				
Yes	173	97.7	131	89.7
No	4	2.3	15	10.3
Test/p	*9.281/0.002*			
Warning other family members to change their masks when they are dirty				
Yes	168	94.9	122	83.6
No	9	5.1	24	16.4
Test/p	*11.243/0.001*			

Table 4. Protective measures applied in children's families according to having COVID-19 (n=323)

	Having COVID-19 infection in the family			
Protective Measures	**Yes**		**No**	
Social Distancing	**n**	**%**	**n**	**%**
Yes	123	54.4	36	37.1
No	103	45.6	61	62.9
Test/p	*8.138/0.004*			
Washing hands				
Yes	121	53.5	35	36.1
No	105	46.5	62	63.9
Test/p	*8.283/0.004*			
Not entering in crowds unless necessary				
Yes	153	67.7	52	53.6
No	73	32.3	45	46.4
Test/p	*5.812/0.016*			

It was found that there are significant relations between the gender of children and the change in children's hygiene habits, washing hands for at least 20 seconds, use of eau de cologne or disinfectant, and warning family members for washing their hands and changing their masks ($p < 0.05$) (Table 3).

It was found in the study that compliance to protective measures is high at a significant level in children with COVID-19 infection in the family ($p<0.05$) (Table 4).

DISCUSSION

Children constitute the risky group in terms of transmission and infection of COVID-19. In this study, the knowledge levels of 8-12-year-old children who form an important group for controlling the COVID-19 outbreak in terms of protection measures were examined. Knowledge sources are important in learning children's protection from COVID-19 routes. The United Nations International Children Emergency Fund (UNICEF) emphasized that the pandemic should be explained to children by stating that they will have difficulty in understanding this in online environments, television, or others (UNICEF, 2019). In the present study, it was found that children learned their knowledge on COVID-19 generally from television or families. Similarly, in a study that was conducted in our country, children were found to learn their knowledge on COVID-19 from the media and their parents (Yüksek Usta and Gökcan, 2020). In the study conducted with Portuguese children, it was reported that children and television news might be highly effective in understanding COVID-19 and transmission risks (Persici Toniolo et al., 2021). In the study, the majority of children knew the country in which the disease emerged correctly, 87.6% said that COVID-19 was contaminated through the respiratory route. In another study, 3-11 years of age children were generally determined to perceive the risk of COVID-19 transmission seriously (Persici Toniolo et al., 2021). In a study conducted to determine the level of knowledge of parents regarding COVID-19, the majority of parents said that COVID-19 was contaminated through the respiratory route (Abuhammad, 2020). In this respect, the knowledge of children on pandemics must be evaluated, protective measures and transmission routes should be described. Also, education should be given to children's parents regarding the transmission routes and protective measures.

The children who participated in this study said that the most effective measure in protection from COVID-19 (80.2%) was wearing masks. In a study conducted in China, approximately 97.5% of primary school students thought that wearing masks were necessary when going out (Xue et al., 2021). Also, all children identified the way that masks should be worn accurately. This result can be interpreted positively in terms of showing that children comply with the use of masks. However, it must be explained to children that the measures should be continued and they must comply with the measures. In addition to wearing masks, children should be supported to comply with other measures (UNICEF, 2020). In the study, approximately half of the children said that social distancing, washing hands, and not entering crowded environments unless necessary were effective in protection from COVID-19. Children can be given information on these measures and their importance. Another study reported that the majority of children in the preschool period knew the measures to be taken to protect from COVID-19 (Yüksek Usta and Gökcan, 2020).

A total of 90% of children who participated in the study said that COVID-19 changed their hygiene habits. It was determined that children cared about washing hands, clean their hands with cologne or disinfectant when handwashing is not possible, especially hand hygiene. In a previous study, it was determined that the majority of primary school children washed hands after coughing/sneezing to be protected from COVID-19 (Xue et al., 2021). In a study conducted with parents, it was reported that many parents thought that the best way to protect against COVID-19 for themselves was by washing hands (Abuhammad, 2020). It was determined in the study that the compliance rates of girls to hygiene habits such as washing hands and changing masks were higher. This result suggests that girls care more about hygiene and protective measures.

In this study, it was found that children who complied with protection measures warned their families in this respect. In another study, mothers

reported that their children firmly complied with the measures and warned others (Yüksek Usta and Gökcan, 2020). Also, it was found that children who had people infected with COVID-19 in their families had higher protection measure rates. In previous studies, it was reported that children were frightened that they or their family members could die from the COVID-19 infection, and for this reason, they cared about protective measures more (Persici Toniolo et al., 2021; Harper et al., 2020). The results obtained in the study support these.

CONCLUSION

It was determined that most children know the country where COVID-19 emerged, its infection routes, and think that the most effective method in protection from COVID-19 is wearing a mask, COVID-19 changed hygiene habits, and care more about washing hands. It was also determined that compliance with hygiene and protection measures was higher in girls and their families. It must be ensured that the incomplete knowledge of children, who are an important group in terms of carrying and infecting the disease, and it must be ensured that their compliance to protection measures is sustainable to take the disease under control.

Acknowledgments

The authors of this article would like to thank all 8-12 years old children and their parents who participated in the study.

Conflict of Interests

The authors declare that there is no conflict of interests.

Research Funding

Authors did not receive grant from any funding agency for the study.

REFERENCES

APA. (2019). Children and COVID-19: State-Level Data Report. https://services.aap.org/en/pages/2019-novel-coronavirus-COVID-19-infections/children-and-COVID-19-state-level-data-report/

Abuhammad, S. (2020). Parents' knowledge and attitude towards COVID-19 in children: A Jordanian Study. Int J Clin Pract, 00:e13671.

Akoğlu, G., Karaaslan. B. (2020). Possible Psychosocial Effects of the COVID-19 and Isolation Process on Children. İzmir Katip Çelebi Üniversitesi Sağlık Bilimleri Fakültesi Dergisi, 5 (2), 99-103.

Erdinç, S., Kaya, M.U., İrice, U. (2020). Guide to maintaining well-being at home during the COVID-19 pandemic. İstanbul: Anne Çocuk Eğitim Vakfı. https://www.acev.org/wp-content/uploads/2020/07/ACEV_CovidRehber_DijitalFinal.pdf

Harper, C.A., Satchell, L.P., Fido, D., et al. (2020). Functional Fear Predicts Public Health Compliance in the COVID-19 Pandemic. Int J Ment Health Addict, Apr, 27,1-14. doi: 10.1007/s11469-020-00281-5.

Kardeş, H., Örnek, Z. (2020). Pediatric Approach to COVID-19 Pandemic. Türkiye Diyabet ve Obezite Dergisi, 4 (2) , 170-176. DOI: 10.25048/tudod.756682

Ludvigsson, J.F. (2020).Systematic review of COVID-19 in children show milder cases and a better prognosis than adults. Acta Paediatri, 109(6), 1088-1095. doi: 10.1111/apa.15270

Palanbek Yavaş, S., Arga, G. (2020). COVID-19 and Children; What Have We Learned So Far? ESTÜDAM Halk Sağlığı Dergisi, 5, 96-107.

Pars, H. (2020). Children in COVID-19 Pandemic and The Roles of Pediatric Nurse. Hacettepe Üniversitesi Hemşirelik Fakültesi Dergisi , 7(Özel Sayı), 66-75.

Persici Toniolo, B., Baptista, J.P., Ramos, C., et al. (2021). General Knowledge and Perception of Portuguese Children About COVID-19. In: Rocha Á., Ferrás C., López-López P.C., Guarda T. (eds) Information Technology and Systems. ICITS 2021. Advances in Intelligent Systems and Computing, vol 1331. Springer, Cham. https://doi.org/10.1007/978-3-030-68418-1_19

UNICEF. (2019). How should you tell your child about Coronavirus 2019 (COVID-19)? https://www.unicef.org/turkey/hikayeler/%C3%A7ocu%C4%9Funuza-koronavir%C3%BCs-2019dan-COVID-19-nas%C4%B1l-s%C3%B6z-etmelisiniz

UNICEF. (2020). COVID-19 and the mask: Suggestions for families. https://www.unicef.org/turkey/COVID-19-ve-maske-aileler-i%C3%A7in i%CC%87pu%C3%A7lar%C4%B1

WHO. (2019). Coronavirus disease (COVID-19) pandemic. https://www.who.int/emergencies/diseases/novel-coronavirus-2019

WHO. (2020). Life skills education school handbook: prevention of noncommunicable diseases - Approaches for schools. Geneva: World Health Organization. Licence: CC BY-NC-SA 3.0 IGO. https://apps.who.int/iris/bitstream/handle/10665/331947/9789240005020-eng.pdf?sequence=1&isAllowed=y

Xue, Q., Xie, X., Liu, Q., et al. (2021). Knowledge, attitudes, and practices towards COVID-19 among primary school students in Hubei Province, China. Child Youth Serv Rev. 2021 Jan; 120:105735. doi: 10.1016/j.childyouth.2020.105735. Epub 2020 Nov 19. PMID: 33235402; PMCID: PMC7676362.

Yavaş Çelik, M. (2021). The Effects of COVID-19 on Child Health. J Educ Res Nurs, 18(Supp. 1), 30-35.

Yüksek Usta, S., Gökcan, H. (2020). COVID-19 through the eye of children and mothers. International Journal of Social Sciences and Education Research, 6 (2), 187-206.