



# Attitudes of Preschool Children and Their Families Towards Face Mask During the COVID-19 Pandemic

## COVID-19 Pandemisinde Okul Öncesi Çocukların ve Ailelerinin Maske Kullanım Tutumları

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### Abstract

**Aim:** The use of face masks, compliance with hygiene and distance rules were among the leading measures during pandemic. But some authorities didn't recommend face masks to preschool children. In this study we aimed to evaluate the attitudes of preschool children and their families towards face masks.

**Material and Method:** We performed a survey between February-March 2022 to 189 volunteer participants who have preschool children, in Pediatric Health and Diseases Outpatient Clinics in two different centers. Survey was consisted of 40 questions and 4 parts: 1. Demographic characteristics 2. COVID-19 3. Use of face mask 4. Compliance with hygiene and distance rules

**Results:** Fifty three percent of the children used face mask. It was observed that the presence of a family member obsessed with cleaning caused a statistically higher increase in the number of handwashing in children (p:0,019). Mothers who were university graduates taught the children more distance rules (p:0.014), the number of handwashing increased in their children (p:0.001) and the rate of using face masks was higher (p:0.036). Having a family member who have had COVID-19 was inversely proportional to the use of face mask in children (p:0.001) and correct use (p:0.033). It was observed that the rate of wearing mask was higher in children who used glasses (92%, p:0.006).

**Conclusion:** Half of the preschool children used face masks regularly. COVID-19 rate was higher in the families whose children didn't use face masks in community. Face masks can be recommended to preschool children who can use it, during the pandemic.

**Keywords:** Children, COVID-19, face mask

### Öz

**Amaç:** Pandemi sürecinde yüz maskesi kullanımı, hijyen ve mesafe kurallarına uyulması başta gelen önlemler arasında yer almıştır. Ancak bazı otoriteler okul öncesi çocuklara yüz maskesi kullanımını önermemektedir. Bu çalışmada okul öncesi çocukların ve ailelerinin yüz maskelerine yönelik tutumlarının değerlendirilmesi amaçlanmıştır.

**Gereç ve Yöntem:** Şubat-Mart 2022 tarihleri arasında iki farklı merkezde Çocuk Sağlığı ve Hastalıkları Poliklinikleri'nde okul öncesi çocuğu olan 189 gönüllü katılımcıya anket uygulandı. Anket 40 soru ve 4 bölümden oluşuyordu: 1. Demografik özellikler 2. COVID-19 3. Yüz maskesi kullanımı 4. Hijyen ve mesafe kurallarına uygunluk.

**Bulgular:** Çocukların yüzde elli üçü yüz maskesi kullanmıştı. Ailede temizlik takıntısı olan bir bireyin varlığının çocuklarda el yıkama sayısında istatistiksel olarak daha fazla artışa neden olduğu görüldü (p:0,019). Üniversite mezunu annelerin çocuklarına daha fazla mesafe kuralı öğrettiği (p:0.014), çocuklarında el yıkama sayısının arttığı (p:0.001) ve yüz maskesi kullanma oranlarının daha yüksek olduğu (p:0.036) belirlendi. Ailede COVID-19 geçirmiş bir birey olması, çocuklarda yüz maskesi kullanımı (p:0,001) ve doğru kullanım (p:0,033) ile ters orantılıydı. Gözlük kullanan çocuklarda maske takma oranının daha yüksek olduğu görüldü (%92, p:0,006).

**Sonuç:** Okul öncesi çocukların yarısı düzenli olarak yüz maskesi kullanmıştı. Çocukları toplum içinde yüz maskesi kullanmayan ailelerde COVID-19 oranı daha yüksekti. Pandemi döneminde, okul öncesi çocuklardan kullanabilenlere yüz maskesi önerilebileceğini düşünmekteyiz.

**Anahtar Kelimeler:** Çocuk, COVID-19, maske



## INTRODUCTION

Sars-Cov 2 virus, which emerged in Wuhan, China at the end of 2019, has caused a pandemic all over the world. [1] While adults had the disease more severely, the rate of asymptomatic transmission was higher in children. But even if the children were asymptomatic, they were at risk of infecting their families. [2] In addition, it was observed that the frequency of symptomatic infections in children increased with the emergence of new variants. Children also developed a Kawasaki Like Disease called Multisystem Inflammatory Disease in Children ,after due to COVID 19.

In this process, many countries had to take various measures. The use of face masks, compliance with hygiene and distance rules were among the leading measures. The World Health Organization (WHO) advised the use of face masks as part of prevention and control measures to limit the spread of SARS-CoV-2, but it didn't recommend the use of face masks for children aged up to five years. [3] In this study we aimed to evaluate the attitudes of preschool children and their families towards face masks during the SARS-CoV 2 pandemic.

## MATERIAL AND METHOD

We performed a survey between February-March 2022 to 189 volunteer participants who have preschool children, in Pediatric Health and Diseases Outpatient Clinics in two different centers. The surveys were filled by the researchers face to face during the children's outpatient clinic visits. Survey was consisted of 40 questions and 4 parts: 1. Demographic characteristics 2. COVID-19 3. Use of face mask 4. Compliance with hygiene and distance rules. The study was approved by our hospitals local ethics committee.

Statistical analyses were performed using the Statistical Package for Social Sciences version 20. Results are presented as percentage and mean or median. Comparisons between groups were analyzed using the chi-squared test.  $P < 0.05$  was taken as a criterion for statistically significant differences.

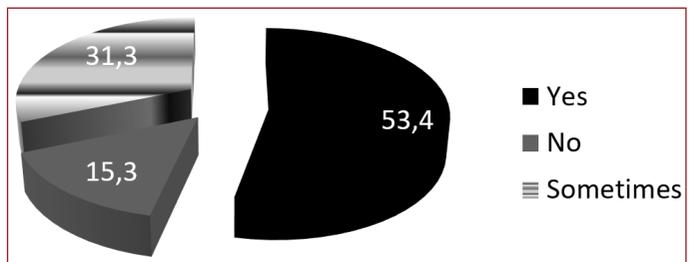
## RESULTS

Most of the participants were mothers (81%). Demographic characteristics of the children were shown in **Table 1**. COVID-19 infection rate among children was 4,8% even if it was 43,4% in their family. Fourteen percent of the participants had a relative who died due to COVID-19.

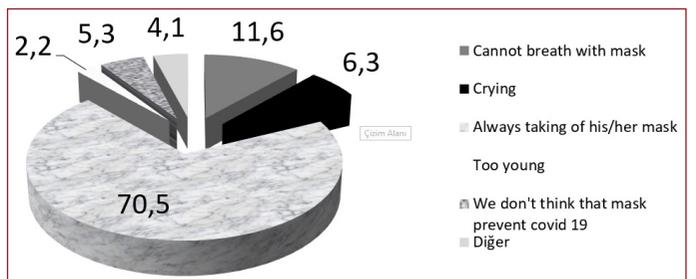
Fifty three percent of the children used face mask (**Figure 1**). **Figure 2** showed the reason of children who didn't use face mask. Only 31,7% of the children and 51,9% of the participants used the face mask correctly. Thirteen percent of the children had a problem (itching 5.3%, rash 2.6%, sneezing 4.6%) with face mask. Half of the children (49,2%) used face mask with their wish. Children preferred patterned, colorful and cartoon-heroic face masks. While surgical mask was preferred 83.4%, fabric mask was preferred by 15.3%.

**Table 1: Demographic characteristics of children**

Characteristic	
Gender	
Male	52.4%
Female	47.6 %
Average age	42.8±19.5 months (4-72)
Mother's education	
Primary school	17.5%
Secondary school	23.3%
High school	23.8%
University	34.9%
Father's education	
Primary school	13.8%
Secondary school	22.2%
High school	22.8%
University	40.7%
Chronic diseases of children	11.6%
Children's care during pandemic	
Going to kindergarten when it is open	23.3%
Being cared for at home by a baby sitter	46.6%
Being cared for at home by mother	20%
Being cared for at baby sitter's home	10.1%



**Figure 1:** Face mask use rates of children



**Figure 2:** Distribution of the reasons for not using face masks

There was an increase in hand washing frequency of 43.9% of the children. Sixty four percent of the participants taught their children distance rules.

It was observed that the presence of a family member obsessed with cleaning caused a statistically higher increase in the number of handwashing in children ( $p:0,019$ ). Mothers who were university graduates taught the children more distance rules ( $p:0,014$ ), the number of handwashing increased in their children ( $p:0,001$ ) and the rate of using face mask was higher ( $p:0,036$ ). Having a family member who have had COVID-19 was inversely proportional to the use of face masks in children ( $p:0,001$ ) and correct use ( $p:0,033$ ). It was observed that the rate of wearing masks was higher in children who used glasses (92%,  $p:0,006$ ).

## DISCUSSION

Since face masks are known to reduce virus transmission, it was one of the most prominent protective methods during the COVID-19 pandemic.<sup>[1,4]</sup> With the suggestion of the WHO, face mask have started to be used around the world and its use still continues in countries where the spread of the virus continues. But WHO didn't recommend the face mask use for children up to five years whereas centers for disease control and prevention recommended it to children two years and older and the use of face mask in this age group differed according to countries.<sup>[3,5]</sup> For example Italian Pediatric Society recommended face mask protection in children over three years old.<sup>[6]</sup> In our country authorities recommended the use of face masks for children aged two and over if they could use them, but there was no official obligation for preschool children. In this study we evaluated the attitudes of preschool children and their families towards face masks.

Fifty three percent of the children used face mask, 31.7% used the mask correctly and 49.2% used face mask with their wish. Mickells et al. conducted a study evaluating adherence to face mask in early elementary school children which also included pre kindergarten and kindergarten children. In this study adherence rate increased by age and it was 56.2%, 73.5% respectively in pre-kindergarten and kindergarten children.<sup>[7]</sup> The use of face mask in pre kindergarten children was nearly similar to our study but in our study the age of the children differed between 4-72 months. In a study adherence of adolescents in United States was found 89.2% and in a French study the adherence rate was 59.7 % in children of all ages.<sup>[8,9]</sup>

When the reasons for not wearing a mask were evaluated, it was seen that the most common reason was that although the mother wore the mask to the child, the child constantly took off the mask because he did not want to wear it. 11 percent of the children did not use masks because they could not breathe properly. Even if there isn't any child study, adult studies reported that face masks commonly used during the pandemic did not impair gas exchange during rest or mild exercise.<sup>[10]</sup>

Thirteen percent of the children had a problem with face mask. Among those itching was the most common problem whereas sneezing was second and rash was the third common problem. Assathiany et al. reported headache (49%), difficulties to speak (45.1%) and breathing discomfort (28.1%) as the most common side effects in their study. None of the children in our study had headache or difficulties to speak.<sup>[9]</sup> There are facial dermatoses cases due to face masks reported in the literature.<sup>[11,12]</sup>

There was an increase in hand washing frequency of nearly half of the children. The presence of a family member obsessed with cleaning caused a statistically higher increase in the number of handwashing in children. Sixty four percent of the participants taught their children distance rules. Mothers who were university graduates taught the children more distance rules, the number of handwashing increased

in their children and the rate of using face masks was higher. Naam et al. also found that face mask use increased with education level in adults.<sup>[13]</sup>

COVID-19 rate among children was 4.8% and 43.4% in their family. This wide difference can be explained by the fact COVID-19 in children is lower or the rate of false negatives is higher.

One of the most important findings of the study was that COVID-19 was higher in the families whose children didn't use face mask or didn't use it correctly. These results suggested that children are important transporters for their families. It was observed that the rate of wearing mask was higher in children who used glasses. This suggested that children who have the habit of affixing something to their faces such as glasses adopt mask more easily.

The strength of the study is that mask use of preschool children was evaluated with a comprehensive 40 question survey. The fact that this study is a survey may create a limitation due to recall bias.

## CONCLUSION

Half of the preschool children used face mask regularly. COVID-19 rate was higher in the families whose children didn't use face mask in community. Face masks can be recommended to preschool children who can use it, during the pandemic.

## ETHICAL DECLARATIONS

**Ethics Committee Approval:** The study was approved by ethics committee of Sami Ulus Maternity and Children Training and Research Hospital. Number: 2020-KAEK-141/276

**Informed Consent:** All patients signed the free and informed consent form.

**Referee Evaluation Process:** Externally peer-reviewed.

**Conflict of Interest Statement:** The author has no conflicts of interest to declare.

**Financial Disclosure:** The author declared that this study has received no financial support.

**Author Contributions:** The author declare that he has all participated in the design, execution, and analysis of the paper, and that he has approved the final version.

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