

# The Effect of Parental Vaccine Literacy Level and Attitudes on COVID-19 Vaccination Decisions for Children Aged 5-11 Years: A Cross-sectional Study

## Ebeveynlerin Aşı Okuryazarlık Düzeyi ve Tutumlarının 5-11 Yaş Arası Çocuklarda COVID-19 Aşı Kararına Etkisi: Kesitsel Bir Çalışma

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### ABSTRACT

**Objective:** The aim of this study was to determine the decision of parents of children aged 5-11 years to vaccinate their children against COVID-19 and to investigate the relationship between this decision and their vaccine literacy and attitudes.

**Materials and Methods:** A descriptive and cross-sectional research design was implemented on 635 parents between April 2022 and December 2022. Data were collected using the COVID-19 Vaccine Literacy Scale, the Attitudes Towards the COVID-19 Vaccine Scale, and an Information Form.

**Results:** A positive and significant relationship was found between the scores of the parents on the COVID-19 Vaccine Literacy Scale and the Attitudes Towards the COVID-19 Vaccine Scale. In the study, it was determined that the total score averages of the Attitudes Towards the COVID-19 Vaccine Scale were significantly higher for the parents who had had all childhood vaccinations for their children, who agreed to have their child vaccinated for the COVID-19 vaccine, who had had the COVID-19 vaccine themselves, and who stated that the vaccine should be mandatory for both adults and children.

**Conclusion:** It was concluded that parents' willingness to vaccinate their children routinely and their level of vaccine literacy about the COVID-19 vaccine positively influenced their attitude and decisions towards vaccinating their children against COVID-19.

**Keywords:** vaccine literacy, vaccine attitude, COVID 19 vaccine, children, parents

### ÖZ

**Amaç:** Bu araştırma 5-11 yaş arası çocuğu olan ebeveynlerin çocuklarına COVID-19 aşısını yaptırmaya yönelik kararının ve bu kararın aşı okuryazarlığı ve aşıya yönelik tutum düzeyleri arasındaki ilişkisinin belirlenmesi amacıyla yapılmıştır.

**Gereç ve Yöntem:** Araştırma, tanımlayıcı ve kesitsel tasarımdadır. Araştırmanın örneklemini 635 ebeveyn oluşturmuştur. Veriler COVID-19 Aşı Okuryazarlığı Ölçeği, COVID-19 Aşısına Yönelik Tutum Ölçeği, Bilgi Formu kullanılarak Nisan 2022-Aralık 2022 tarihlerinde toplanmıştır.

**Bulgular:** Ebeveynlerin COVID-19 Aşı Okuryazarlığı Ölçeği ile COVID-19 Aşısına Yönelik Tutum Ölçeği puanları arasında pozitif yönde ve anlamlı bir ilişki bulunmuştur. Çalışmada çocukluk çağı aşılarının tamamını yaptıran, çocuğuna COVID 19 aşısı çıkarsa yaptırmayı kabul eden, kendisine COVID 19 aşısı yaptıran, yetişkinler ve çocuklar için aşının zorunlu olması gerektiğini ifade eden ebeveynlerin COVID-19 Aşısına Yönelik Tutum Ölçeği toplam puan ortalamalarının anlamlı olarak daha yüksek olduğu belirlenmiştir.

**Sonuç:** Ebeveynlerin çocuklarını rutin çocukluk çağı aşılamaları konusundaki istekliliği ve COVID-19 aşısı hakkındaki yüksek aşı okuryazarlık düzeylerinin, çocuklarına COVID-19 aşısı yaptırmaya konusundaki tutum ve kararlarını olumlu yönde etkilediği sonucuna varılmıştır.

**Anahtar Kelimeler:** aşı okuryazarlığı, aşı tutumu, COVID 19 aşısı, çocuk, ebeveyn

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## INTRODUCTION

The first case of the novel coronavirus disease (COVID-19) in December 2019 in Wuhan, China marked the onset of a global health crisis. Rapidly spreading across the world, the disease was eventually declared a pandemic by the World Health Organization (1). Amid the pandemic, numerous countries initiated the vaccination of individuals below 18 years of age, aiming to shield them from newly emerging and highly transmissible variants of COVID-19. Efforts to vaccinate children aged 5 to 11 years increased in Western countries as children are recognized as vulnerable, who are less likely to comply with restrictions and protect themselves (2, 3). Numerous studies had indicated the efficacy of COVID-19 vaccines in reducing transmission rates, hospitalizations, and fatalities, playing a pivotal role in controlling the pandemic (2, 4, 5). In line with these findings, COVID-19 vaccine had been recommended for children over the age of 5 by the health authorities, and supplemental doses have been recommended for those aged 12 and over (6). Vaccination in Türkiye covers children aged 12-17 and people aged 18 and over. The Pfizer-BioNTech® vaccine regimen for the 5-11 age group, which is accepted in European countries, is not yet implemented in Türkiye (7).

Vaccination, recognized as the most effective preventive measure against infectious diseases, is globally embraced as a crucial public health service (8). Furthermore, safeguarding children against infectious diseases through vaccination is deemed a fundamental right (9). Despite the increase in vaccination rates, there are concerns that the continued increase in COVID-19 cases and transmission may increase vaccine hesitancy, rejection or resistance among parents. Systematic reviews and meta-analyses found that the population acceptance rate of the COVID-19 vaccine was approximately 73% (10, 11, 12). It is widely recognized that the success of safe and effective immunization strategies is contingent on widespread vaccine acceptance; hesitancy or resistance among individuals or parents can impede this progress (13). Because parents have the power to make decisions on behalf of their children, they play a critical role in determining whether their child should be vaccinated. Parents' perspectives on COVID-19 preventive measures and their attitudes towards vaccination have a significant impact on their child's immunization status (8, 10).

The concept of vaccine hesitancy is typically analysed by considering three factors: complacency, confidence, and convenience. Essentially, an individual's or parent's choice to accept a vaccine revolves around striking a balance between evaluating the potential advantages and risks associated with it. Vaccine hesitancy arises when there is a diminished recognition of the necessity of vaccination (referred to as complacency) and concerns regarding effectiveness and safety (termed low confidence). Confidence in a vaccine is further eroded by misconceptions about immunization processes, mistrust of government and healthcare authorities, and the novelty of the vaccine. Additionally, the ease of accessing a vaccine (convenience) is also taken into consideration alongside these

factors. It is well understood that social dynamics like norms, intentions, and collective responsibility play a significant role in vaccine acceptance (14-16). Furthermore, certain aspects of the ongoing epidemic can impact both complacency (e.g., misrepresenting the severity by comparing it to seasonal flu) and confidence (e.g., rapid vaccine development rate). Various factors influence the willingness to accept a vaccination, including socio-demographic variables, psychological aspects, attitudes regarding vaccination, perceptions of risk and sensitivity to COVID-19, vaccine and health literacy, individual risks, special medical conditions, and others. These factors have been identified as shaping vaccination intentions and uptake (8, 10, 15-17). Studies have demonstrated that enhancing transparency, sharing data openly, and fostering discussions about this data can enhance vaccine acceptance by helping individuals grasp and adjust to the disease (18).

While the existing body of literature extensively examines attitudes towards vaccines within the general population, there is a notable lack of studies that delve into the attitudes and perspectives of parents with children aged 5-11 years regarding the vaccination against COVID-19. Assessing the opinions and emotions of parents within this specific age group concerning the COVID-19 vaccination, particularly considering its non-current status in Türkiye, holds significant importance. This assessment is pivotal in terms of devising necessary strategies for potential COVID-19 vaccination programs and any forthcoming vaccination initiatives. Given the substantial gap in existing research, the main objective of this study is to examine the decision and the attitudes of parents of children aged 5 to 11 years in Türkiye with regard to the COVID-19 vaccine.

### *Research Questions*

- 1) What is the attitude and decision of parents towards getting their children vaccinated against COVID-19?
- 2) Is there any correlation between the Attitudes Towards the COVID-19 Vaccine Scale and the COVID-19 Vaccine Literacy Scale score levels of parents regarding their decision to vaccinate their children?

## MATERIALS AND METHODS

### *Design*

The aim of the cross-sectional study was to examine the decision and the attitudes of parents of children aged 5 to 11 years in Türkiye with regard to the COVID-19 vaccine.

### *Participants*

The study's participants included parents residing in Türkiye who have children aged 5 to 11 years old. The study consists of parents who met the inclusion criteria and participated in the study between April 2022 and December 2022. The sample size was calculated to be a minimum of 666 individuals, based on a 99% confidence level, a 5% margin of error, and an assumed unknown population proportion of 50%, as determined through power analysis. Ultimately, the study was concluded

with the participation of 635 parents since 31 of the intended participants were excluded from the analysis due to incomplete survey and scale forms.

*Inclusion criteria:* having a child in the age group of 5-11 years old and being willing to participate in the study.

*Exclusion criteria:* refusal to participate in the study, having a child younger than 5 years or older than 11 years, and being a healthcare staff.

#### **Data collection process**

The data were collected between April 2022 and December 2022 from parents of children living in Türkiye using an online survey created on Google Forms. The survey was disseminated to participants through social media platforms (WhatsApp, Facebook, Instagram). This method was chosen due to the need to adhere to pandemic guidelines, avoiding face-to-face exchanges and maintaining social distancing measures.

The data was gathered through utilization of an Information Form, the COVID-19 Vaccine Literacy Scale, and the Attitudes Towards the COVID-19 Vaccine Scale.

*Information form:* This questionnaire consists of questions about the socio-demographic characteristics of the participants, their perspectives on vaccine decisions, their understanding and attitudes towards vaccines. The researchers formulated this form after reviewing the available literature in the field (8,19-25).

**COVID-19 Vaccine Literacy Scale (COVID-19 VLS):** Ishikawa et al. originally developed a scale to assess health literacy in relation to chronic diseases and Biasio et al. adapted this scale for COVID-19 Vaccine Literacy (26,27). The scale consists of 12 items in two different dimensions. The Functional Vaccine Literacy dimension encompasses four items and relies on fundamental reading and writing capabilities for daily tasks. This level of literacy enables individuals to comprehend materials related to vaccines and health education. The Communicative/Critical Vaccine Literacy dimension includes eight items and centres around cognitive aspects such as critical thinking and decision-making. Communicative health literacy encompasses cognitive and social proficiencies, enabling individuals to engage in various health-related activities and employ their existing knowledge to adapt to changing health conditions. Critical health literacy involves advanced cognitive skills that empower individuals to critically assess information and utilize it to exert more control over life circumstances. The scale employs a 4-point Likert-type structure. Items in the Communicative/Critical dimension are rated as (1) Never, (2) Rarely, (3) Sometimes, and (4) Often, whereas items in the Functional dimension are rated reversely as (4) to (1). An average score approaching 4 on the scale indicates a heightened level of vaccine literacy. A study on the Turkish validity and reliability of the COVID-19 vaccine literacy scale was performed by Durmuş et al. (2021), revealing a Cronbach's alpha value of 0.86 (28).

**Attitudes Towards the COVID-19 Vaccine Scale (ATV-COVID-19):** The scale was originated by Geniş et al. (2020). It comprises 9 items categorized into two sub-dimensions: positive and negative attitudes. Items within the positive attitude sub-dimension are rated using a scale including "Strongly Disagree (1)", "Disagree (2)", "Undecided (3)", "Agree (4)", "Strongly Agree (5)". Conversely, items in the negative attitude sub-dimension are scored in reverse. Calculating the total score for each sub-dimension involves summing the item scores within that sub-dimension and subsequently dividing by the number of items, resulting in a value ranging from 1 to 5. In the negative attitude sub-dimension, higher scores imply a less pessimistic stance toward the vaccine, while elevated scores in the positive attitude sub-dimension denote a favourable attitude regarding the vaccine. The scale exhibited a Cronbach's Alpha value of 0.80 as determined by Geniş et al. (29).

#### **Data analysis**

The data analysis was utilized using IBM SPSS Statistics 28.0 software. Descriptive analyses were presented using the mean, standard deviation (SD) and minimum-maximum for the continuous variables with normal distribution. Categorical variables were summarised by frequencies and percentages. For pairwise comparisons of quantitative data, for two groups the Student's t-test was used, and for more than two groups the One-Way ANOVA test was utilized. Pearson's correlation tests were used to reveal relationships between scale scores. The threshold for significance was set at  $p < 0.05$ .

#### **Ethical consideration**

The research adhered to ethical standards and regulations. It received approval from the Koç University's Ethics Committee (Approval Date: 24.03.22, Reference No: 2022.114.IRB3.058) and obtained permission from the Ministry of Health before commencing. The informed consent form highlighted the objectives of the study and the voluntary nature of participation. The investigation was conducted following the principles outlined in the Declaration of Helsinki.

#### **RESULTS**

The socio-demographic characteristic of the parents is presented in Table 1. The mean age of the parents was  $36.12 \pm 5.77$ , and the average age of their children was  $8.19 \pm 2.11$ . Among the parents, 38% of them had less than a high school education and 51.8% of them said that their income was equal to their expenditure. Examining the responses related to their children, it was found that 50.4% of parents had boy children, and 18.9% had a child with a chronic illness (Table 1).

It was determined that 53.1% of the participating parents and 25% of the children had contracted COVID-19. Among the parents, 11.8% stated that their child had not received any of the childhood vaccines, 23.8% stated willingness to have their child vaccinated against COVID-19 if available, 83.9% reported that they themselves had received the COVID-19 vaccine, 47.9% believed that the vaccine should be mandatory for adults, and 10.7% believed that the vaccine should also be mandatory for children (Table 2).

**Table 1: Characteristic of the Parents**

Characteristic	Mean±SD	Min-Max
Age of parents (year)	36.12±5.77	25-51
Age of children's (year)	8.19±2.11	5-11
Number of children	2.31±0.90	1-5
Characteristic	n	%
<b>Parent who filled the questionnaire</b>		
Mother	512	80.6
Father	123	19.4
<b>Education level of parents</b>		
Less than high school	241	38.0
High school	227	35.7
University	140	22.0
Master/PhD	27	4.3
<b>Family income level</b>		
Income less than expense	209	32.9
Income and expense equal	329	51.8
Income more than expense	97	15.3
<b>Gender of children</b>		
Female	315	49.6
Male	320	50.4
<b>Presence of Chronic Illness in Children (Yes)</b>		
	120	18.9

Max: Maximum; Min: Minimum; SD: Standard Deviation

**Table 2: Parents' answers to the questions related to COVID-19 disease and vaccine**

Characteristic	n	%
<b>Parents' COVID-19 positive status</b>		
Yes	337	53.1
No	298	46.9
<b>Children's COVID-19 positive status</b>		
Yes	159	25
No	476	75
<b>Having a relative who died due to COVID-19</b>		
Yes	205	32.3
No	430	67.7
<b>Having children who had not received childhood vaccines</b>		
Yes	75	11.8
No	560	88.2
<b>Willingness to allow their children to receive the COVID-19 vaccine</b>		
Yes	151	23.8
No	239	37.6
I am undecided	245	38.6
<b>Parents' COVID-19 vaccination status</b>		
Yes	533	83.9
No	102	16.1
<b>Vaccination should be mandatory for adults</b>		
Yes	304	47.9
No	186	29.3
I am undecided	145	22.8
<b>Vaccination should be mandatory for children</b>		
Yes	68	10.7
No	289	45.5
I am undecided	278	43.8

The average COVID-19 Vaccine Literacy Scale score of the parents was 2.66±0.56, with a functional vaccine literacy sub-dimension score of 2.63±0.78, and a communicative/critical vaccine literacy sub-dimension score of 2.67±0.73. The average ATV-COVID-19 scale score of parents was 3.34±0.71, with a positive attitude sub-dimension score of 3.30±0.99, and a negative attitude sub-dimension score of 3.37±0.81 (Table 3).

A positive correlation was found between parents' COVID-19 Vaccine Literacy Scale scores and Attitudes Towards the COVID-19 Vaccine Scale scores (p<0.001) (Table 4).

**Table 3: Average scores of the scales**

Scales	Mean ± SD	Min - Max
<b>COVID-19 Vaccine Literacy Scale</b>	2.66± 0.56	1-4
<i>Functional vaccine literacy</i>	2.63±0.78	1-4
<i>Communicative/Critical vaccine literacy</i>	2.67±0.73	1-4
<b>Attitudes Towards the COVID-19 Vaccine Scale</b>	3.34±0.71	1-5
<i>Positive attitudes</i>	3.30±0.99	1-5
<i>Negative attitudes</i>	3.37±0.81	1-5

Max: Maximum; Min: Minimum; SD: Standard Deviation

**Table 4: Correlation of the scales**

Scales	Attitudes Towards the COVID-19 Vaccine Scale	
	r	p
<b>COVID-19 Vaccine Literacy Scale</b>	0.198	<0.001

r: pearson correlation analysis

The comparison of the total scale scores with some characteristics is presented in Table 5. In the study, it was determined that parents who had a postgraduate degree, had lost a relative/close person due to COVID-19, were willing to get their child vaccinated if a COVID-19 vaccine became available, had received a COVID-19 vaccine themselves, and expressed that the COVID-19 vaccine should be mandatory for both adults and children had significantly higher average scores on the COVID-19 Vaccine Literacy Scale. Similarly, parents who had completed all childhood vaccinations, were willing to get their child vaccinated if a COVID-19 vaccine became available, had received a COVID-19 vaccine themselves, and expressed that the COVID-19 vaccine should be mandatory for both adults and children had significantly higher average scores on the ATV-COVID-19 scale (Table 5).

**DISCUSSION**

The aim of this study was to determine the decision of parents of children aged 5-11 years to vaccinate their children against COVID-19 and to investigate the relationship between this decision and their vaccine literacy and attitudes. Consistent with the existing literature (20, 21, 29, 30), the findings

**Table 5: Comparison of scale scores according to some characteristics**

Characteristic	COVID-19 VLS Mean±SD	ATV-COVID-19 Mean±SD
<b>Education level</b>		
Elementary education	30.48±6.23	29.52±6.50
High school	31.42±7.03	30.43±5.93
University	34.53±6.03	30.28±6.63
Master/PhD	36.25±6.65	31.66±8.45
	F=15.888	F=1.416
	<b>p&lt;0.001</b>	p=0.237
<b>Having a relative who died due to COVID-19</b>		
Yes	32.86±6.16	30.74±6.44
No	31.52±6.95	29.80±6.41
	t=2.447	t=1.708
	<b>p=0.015</b>	p=0.088
<b>Not having child vaccinated with any of the childhood vaccines</b>		
Yes	31.21±5.14	27.13±7.17
No	32.05±6.91	30.50±6.23
	t=-1.278	t=-3.884
	p=0.204	<b>p&lt;0.001</b>
<b>Allowing children to be vaccinated with the COVID-19 vaccine</b>		
Yes	33.83±6.58	33.78±6.48
No	30.69±6.81	26.62±6.19
I am undecided	32.03±6.49	31.24±4.78
	F=10.352	F=78.594
	<b>p&lt;0.001</b>	<b>p&lt;0.001</b>
<b>Parents' vaccination status</b>		
Yes	32.47±6.69	31.14±6.11
No	29.24±6.28	24.68±5.28
	t=4.510	t=9.983
	<b>p&lt;0.001</b>	<b>p&lt;0.001</b>
<b>Vaccination should be mandatory for adults</b>		
Yes	33.11±6.40	32.57±6.30
No	30.78±7.53	26.70±6.11
I am undecided	31.04±5.90	29.30±4.71
	F=8.820	F=58.483
	<b>p&lt;0.001</b>	<b>p&lt;0.001</b>
<b>Vaccination should be mandatory for children</b>		
Yes	34.58±7.25	34.16±6.67
No	31.20±7.20	27.35±6.10
I am undecided	32.10±5.89	31.98±5.47
	F=7.219	F=61.496
	<b>p&lt;0.001</b>	<b>p&lt;0.001</b>

F: One Way ANOVA, t:Student t test, p:significance level, COVID-19 VLS: COVID-19 Vaccine Literacy Scale, ATV-COVID-19: Attitudes Towards COVID-19 Vaccine Scale

indicated that only 23.8% of the parents expressed the intention to vaccinate their children against COVID-19. The majority of parents had received the COVID-19 vaccine themselves and believed that it should be mandatory for adults. However, merely 10.7% of parents advocated for mandatory vaccination of children. These findings underscore the lack of parental confidence in administering COVID-19 vaccines to their children. It has been noted that parental hesitancy toward

vaccinating children stems from misconceptions such as the swift development of COVID-19 vaccines, potential long-term side effects, and insufficient vaccine research (21, 27, 31-34). Furthermore, it is argued that a diminished perception of the necessity for childhood vaccination (low complacency) and concerns regarding vaccine efficacy and safety in children (low confidence) contributed to a reduced uptake of the COVID-19 vaccine (14).

The current study revealed a significant and positive correlation between parents' COVID-19 vaccine literacy and their attitudes towards the COVID-19 vaccine. As parents' vaccine literacy levels increased, their attitudes towards the COVID-19 vaccine also displayed a corresponding positive enhancement. Previous research has indicated an augmented demand among parents for comprehensive information about vaccine components, a necessity driven by the aim of accurate vaccine perception and the alleviation of hesitations (30, 35, 36). In light of this, the assessment and enhancement of parents' vaccine literacy could potentially serve to facilitate vaccine acceptance and utilization. The active engagement of healthcare professionals in ensuring that parents receive accurate and comprehensive information regarding the COVID-19 pandemic and vaccines is projected to have a favourable impact on their vaccine-related attitudes (7, 27). This, in turn, is expected to amplify vaccine uptake by reinforcing both vaccine complacency and confidence.

A significant difference was found between parents' inclination towards vaccinating their children against COVID-19 and their attitudes towards the COVID-19 vaccine, in addition to their vaccine literacy. The study identified that parents who expressed a desire to vaccinate their children against COVID-19 exhibited positive attitudes towards the COVID-19 vaccine and possessed a higher level of COVID-19 vaccine literacy. Consequently, it emerged as pivotal to assess parents' knowledge and attitudes regarding the COVID-19 vaccine, specifically targeting those who are hesitant or resistant to vaccination, in order to facilitate their consent for vaccinating their children. Addressing families' misconceptions about the vaccine was paramount, necessitating the correction of their misguided beliefs concerning the vaccine's attributes (7, 28, 31, 37). Prior research underscores that when parents are equipped with accurate information sourced from reliable channels, and misinformation is supplanted with accurate facts, their confidence in vaccines tends to surge (38, 39). In this context, healthcare professionals hold the responsibility of guiding parents on obtaining credible information and reliable sources. Employing an empathetic and non-judgmental communication style, healthcare practitioners should consistently engage with families during clinic visits, actively listening to their concerns and addressing misinformation, both during initial consultations and follow-up interactions (7, 31, 40). By doing so, healthcare professionals foster an environment conducive to enhancing vaccine confidence and augmenting vaccine uptake.

It is established that parents who displayed willingness towards childhood vaccines tended to exhibit a more favourable disposition towards the COVID-19 vaccine. Existing research



underscores that when parents diligently adhered to and follow their children's routine vaccination schedules, similar positive attitudes were manifested towards the COVID-19 vaccination (36, 41-43). Furthermore, it can be observed that parents' negative inclinations towards routine vaccines often extended to their attitudes regarding COVID-19 vaccines (36). Notably, Yıldız et al. (2021) discovered that parents who initially declined childhood vaccines maintained their negative stance towards the COVID-19 vaccine as well (44). Consonant with the existing literature, our study's findings align, revealing that parents who had ensured their children received all the recommended routine childhood vaccinations were more likely to harbour positive attitudes towards the COVID-19 vaccine. In light of the understanding that elevated levels of vaccine complacency and confidence in established vaccines contribute to greater acceptance of novel vaccines, it can be inferred that the provision of information and counselling pertaining to all vaccines should be consistently reiterated during each clinic visit involving families.

Attitudes towards the COVID-19 vaccine are shaped by a multitude of factors. Our findings highlight that parents who had experienced the loss of a relative due to COVID-19, those who had personally received the COVID-19 vaccine, and individuals who advocated for mandatory vaccination of both adults and children tended to exhibit higher willingness towards the COVID-19 vaccination and possessed enhanced COVID-19 vaccine literacy. These results resonate with the findings of previous research in the field (29, 36, 45). The congruence between the data from this study and prior literature underscores the importance of identifying the array of factors, whether positive or negative, that exert influence on attitudes towards the COVID-19 vaccine. By delineating these factors comprehensively, it becomes possible to formulate targeted intervention programs aimed at bolstering vaccination rates. In anticipation of averting future vaccine hesitancy or refusal, and in the pursuit of elevating confidence in the vaccine, it is prudent to delve into the determinants that sway vaccine acceptance, operating at both the familial and community levels.

Our study's limitation is the inability to make cause-effect inferences due to the cross-sectional design. Another limitation is that the vaccine was not administered to that age group (5-11 years of age) in our country at the period of the data collection, which can negatively affect complacency and confidence, despite Western countries' ongoing vaccinations. Moreover, a notable limitation arises from the temporal context of data collection. During the study period, the COVID-19 vaccine had not been extended to the targeted age group in our country. This circumstance could potentially exert a detrimental impact on perceptions of complacency and confidence towards the vaccine. It is essential to recognize that this context might differ from Western countries where vaccination efforts were underway. This contextual variation underscores the need to consider the potential bias introduced by this discrepancy when interpreting our results.

## CONCLUSION

It is noteworthy that an increase in parents' knowledge and literacy regarding the COVID-19 vaccine had a positive impact on their attitudes towards the vaccine. This correlation also played a significant role in influencing whether or not they chose to vaccinate their children. Given these findings, healthcare professionals hold a pivotal role in evaluating parents' understanding and viewpoints concerning the COVID-19 vaccine. It is imperative to develop strategies to alleviate the anxiety of families in order to increase vaccine uptake and confidence. This can be achieved by eliminating inaccurate or incomplete information and increasing vaccine literacy. In this direction, comprehensive and understandable training programs that encourage open communication, empathy and an unprejudiced stance need to be developed. These programs should serve to alleviate parental anxieties and encourage them to voice any misconceptions they may hold. Healthcare settings such as paediatric outpatient clinics and family health centres, where paediatric doctors and nurses frequently interact with parents, represent opportune platforms for continuous education. It is crucial for parents to receive ongoing education encompassing the safety and potential adverse effects of both the national immunization schedule and the COVID-19 vaccine. Additionally, paediatricians and paediatric nurses should guide parents towards reliable sources of information regarding vaccines. For hesitant parents, vaccination options should be provided after furnishing them with comprehensive information during each visit.

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**Informed Consent:** Informed Consent: Informed consent was obtained from the participants.

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