Türk Kadın Sağlığı ve Neonatoloji Dergisi

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Orijinal Makale

Evaluation of Knowledge, Attitudes, and Practices About HPV Vaccine: A Survey Study of Pediatric and Obstetrics and Gynecology Residents in İzmir, Türkiye

HPV Aşısı Hakkında Bilgi, Tutum ve Davranışların Değerlendirilmesi: İzmir'de Pediatri ve Kadın Hastalıkları ve Doğum Asistanları Arasında Bir Anket Çalışması

Nebahat Ermiş[1], Derşan Onur*[2], Anıl Er[3], İlker Günay[1]

[1] Department of Pediatrics, University of Health Sciences, Dr. Behçet Uz Pediatric Diseases and Surgery Training and Research Hospital, İzmir, Türkiye
[2] Department of Pediatrics, University of Health Sciences, İzmir Tepecik Training and Research Hospital, İzmir, Türkiye
[3] Department of Pediatric Emergency, School of Medicine, Dokuz Eylül University, İzmir, Türkiye

Abstract

Purpose: The main objective of this study was to evaluate the knowledge, attitudes, and practices of obstetrics and gynecology (OB/GYN) and pediatric residents in Izmir, Turkey, regarding the HPV vaccination.

Materials and Methods: This cross-sectional survey study was conducted in five hospitals in Izmir, Turkey, between May and July 2019. The data for this study were obtained from 299 pediatric and 126 OB/GYN residents via an online web-based questionnaire. The statistical analyses were performed using SPSS®.

Results: The overall participation rate was 72%. Only 25.2% of the participating residents demonstrated adequate knowledge about the HPV vaccine. The OB/GYN residents had significantly higher knowledge scores than the pediatric residents (median [IQR] = 9.4 [8.4-10.6] vs. 8.4 [7.4-9.8], p=0.007). The vaccination rate among residents was low, with female residents having higher rates of vaccination than male residents (13.6% vs. 1.1%, p<0.01). While 68.3% of residents indicated that they would vaccinate both their sons and daughters, only 13.1% always recommended the HPV vaccine to their patients.

Conclusion: This study revealed that the knowledge and vaccination rates of OB/GYN and pediatric residents regarding the HPV vaccine are insufficient. Enhancing education and support for these physician groups is crucial for improving HPV vaccination rates and reducing the prevalence of HPV-related diseases in the population.

Keywords: HPV vaccines; pediatrics; gynecologist; residency; health knowledge; attitudes; practice

Sorumlu Yazar *: Department of Pediatrics, University of Health Sciences, İzmir Tepecik Training and Research Hospital, İzmir, Türkiye.
E-posta: drdersanonur@gmail.com
ORCID: 0000-0002-8152-3043
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Öz

Amaç: Bu çalışmanın birincil amacı, İzmir, Türkiye'deki Kadın Hastalıkları ve Doğum (OB/GYN) ve pediatri asistanlarının HPV aşısı hakkındaki bilgi, tutum ve davranışlarını değerlendirmektir.

Gereç ve Yöntem: Bu kesitsel anket çalışması, Mayıs ve Temmuz 2019 tarihleri arasında İzmir, Türkiye'deki beş hastanede gerçekleştirildi. Veriler, 299 pediatri ve 126 OB/GYN asistanından çevrimiçi anket aracılığıyla elde edildi. İstatistiksel analizler SPSS® kullanılarak yapıldı.

Bulgular: Genel katılım oranı %72 idi. Asistanların sadece %25,2'si HPV aşısı hakkında yeterli bilgiye sahipti. OB/GYN asistanlarının bilgi puanları pediatri asistanlarına göre anlamlı derecede yüksekti (ortanca [IQR] = 9,4 [8,4-10,6] ve 8,4 [7,4-9,8], p=0,007). Asistanlar arasında aşılama oranı düşük olup, kadın asistanların aşılama oranı erkek asistanlara göre daha yüksekti (%13,6 ve %1,1, p<0,01). Asistanların %68,3'ü hem oğullarını hem de kızlarını aşılayacaklarını belirtirken, sadece %13,1'i hastalarına her zaman HPV aşısını tavsiye etmekteydi.

Sonuç: Çalışma, OB/GYN ve pediatri asistanlarının HPV aşısı hakkındaki bilgi ve aşılama oranlarının yetersiz olduğunu ortaya koymaktadır. Bu hekim gruplarına yönelik eğitim ve desteğin artırılması, HPV aşılama oranlarının iyileştirilmesi ve toplumda HPV ile ilişkili hastalıkların yaygınlığının azaltılması için önemlidir.

Anahtar Kelimeler: HPV aşısı; pediatrist; jinekolojist; asistan; bilgi; tutum ve davranış

1. Introduction

Cervical cancer is a prevalent form of cancer worldwide and ranks fourth among cancers affecting women (1). *Human papillomavirus* (HPV) is the leading risk factor for cervical cancer and is also linked to oropharyngeal, anal, vulvar, vaginal, and penile cancers. A total of 90% of cervical cancer cases are preventable, and screening and early diagnosis of cervical cancer results in a good prognosis (1-3). In Turkey, 1245 women deaths occur annually from cervical cancer, 67% of which are estimated to be associated with HPV 16-18 (4).

Significant reductions in the prevalence of HPV-16/18, anogenital warts, and HPV-related cancers have been observed with the HPV vaccine in both genders (5-8). The risk of cervical cancer is lower when individuals are vaccinated at an early age (9,10).

Since its licensing in the United States in 2006, the HPV vaccine has been available in more than 100 countries for both genders. It has been included in the vaccination schedule in numerous countries, including the Australia, Canada, France, Germany, Israel, and United States (11,12). In Turkey, the quadrivalent vaccine was licensed in 2007, and the bivalent vaccine was licensed in 2008. However, HPV vaccines are not included in the national vaccination program in Turkey.

Reviewing studies that assessed parents' attitudes toward HPV vaccination for their children, Trim et al. highlighted a decline in parents' awareness and intention to vaccinate their children, with safety concerns and the need for more information from doctors being key factors (13). Pediatric and obstetrics and gynecology (OB/GYN) specialists have a pivotal role in promoting this vaccine (13,14). Thus, a cross-sectional survey study was conducted to investigate the knowledge, attitudes, and practices of OB/GYN and pediatric residents about the HPV vaccine in Izmir, Turkey.

2. Methods

This cross-sectional survey study was conducted in five hospitals, including education, research, and medical faculty hospitals in Izmir, Turkey, between May and July 2019.

An online web-based survey was used as a data collection tool. In this study, a 16-question survey was created and conducted via Google Forms. The survey included questions pertaining to the respondents' demographic data, HPV vaccination status, knowledge about cervical cancer and the HPV vaccine, attitudes, and behavior regarding HPV vaccination (Appendix 1). The survey did not employ open-ended questions. The participants were selected through convenience sampling. The survey link was distributed to all residents (299 pediatric and 126 OB/GYN residents) in the research group via email. Informed consent was obtained from the participants before participating in the survey and it was stated that all answers would remain confidential. The survey was made available online for a period of one month, allowing respondents sufficient time to complete the survey. In order to ensure the anonymity and privacy of the participants, their personal online footprints were not collected. The respondents to the questionnaire were included in the study. A single questionnaire was permitted to be completed via a single email address.

A study conducted in our country revealed that the average knowledge score of all physicians was 20.28 (59.6%) in 34 questions (15). Similarly, in Turkey, another study of non-OB/

GYN physicians reported a mean score of 4.88±0.77 (81.3%) on 6 questions (16). Given the considerable variation in mean knowledge levels observed in other studies and the limited scope of our investigation, which was confined to OB/GYN and pediatric residents, we postulated that the average correct answer would fall within the range delineated by the two aforementioned studies in Turkey (17-21). Consequently, respondents who achieved a score of at least 10 correct answers (62.5%) on the 16 knowledge questions (15 five-point Likert scale questions and 1 multiple choice question) were deemed to possess an adequate level of knowledge regarding cervical cancer and the HPV vaccine. A total score was obtained by assigning values from one to five to the knowledge questions, which were scored according to a five-point Likert scale. The score was then divided by five to obtain the knowledge score, which was subsequently reported.

The data were uploaded into Microsoft Office Excel and then evaluated statistically using the Statistical Package for Social Sciences (SPSS®, version 23.0) software. The dataset was subjected to a process of analysis that excluded any responses that were missing values. The internal consistency of the survey was calculated and reported using the alpha method of Cronbach's alpha, intraclass correlation coefficient, the Hotelling's T-squared Test, and the Tukey nonadditive test. The normality of the data was evaluated using the Shapiro–Wilk test. The descriptive statistics of the continuous variables are presented in accordance with the normality criteria as the mean and standard deviation (SD) or median and interquartile range (IQR, 25th-75th percentile). The descriptive statistics for categorical variables were presented as numbers and percentages (n, %). The χ^2 test or Fisher's test was used for the comparison of categorical data. The Kruskal-Wallis H test or one-way ANOVA test was used to determine whether the knowledge score was significantly different between more than two independent groups. If a significant difference was found between the groups after the comparisons, the group or groups from which the difference originated were evaluated by post hoc analysis using Tukey's and Bonferroni tests. A p-value less than 0.05 was considered to indicate statistical significance.

The study was approved by the Clinical Research Ethics Committee of the University of Health Sciences Dr. Behçet Uz Children's Hospital (2019/351) in accordance with the ethical standards established in the 1964 Declaration of Helsinki and its subsequent amendments.

The study was reported in accordance with the CROSS (A Consensus-Based Checklist for Reporting of Survey Studies) guidelines (Appendix 2) (22).

3. Results

Cronbach's alpha coefficient showed that the questionnaire achieved acceptable internal consistency (α=0.765; standardized α=0.697). Most questions seemed worthy of keeping in the survey, as they would result in a decrease in alpha if deleted (α=0.741-0.775). The only exception is the eleventh question, for which the alpha coefficient increased to 0.775 when it was removed from the questionnaire. Hotelling's T-Squared Test and Tukey's non-additive test were significant (F=77.453 and 85.411, respectively; both p<0.001).

The overall participation rate was 72% (83.6% for pediatric residents and 44.4% for OB/GYN residents). The median age of the participants was 28 (IQR:27-29) years. Most of the residents who participated in the study were women (69.6%). Eighty percent of the participants who completed the survey were pediatric residents. The descriptive characteristics of the participants are presented in Table 1.

Table 1. The descriptive characteristics of residents

Age (year), median (Q_1-Q_3)	28 (27-29)
Sex, n (%)	
Female	213 (69.6)
Male	93 (30.3)
Specialty, n (%)	
Pediatric	250 (81.6)
Gynecology & Obstetrics	56 (18.3)
Residency Duration, n (%)	
0-12 months	63 (20.5)
13-24 months	52 (16.9)
25-36 months	72 (23.5)
37-48 months	95 (31)
49 months and above	24 (7.8)
Marital Status, n (%)	
Married	105 (34.3)
Single	196 (64.0)
Divorced	5 (1.6)
Number of Children, n (%)	
None	261 (85.2)
1 child	35 (11.4)
2 children	10 (3.2)

Q_1-Q_3: 25th-75th percentile

Only 33% of the 306 residents who responded to the survey indicated that they knew enough about the HPV vaccine. More OB/GYN residents thought they had sufficient knowledge compared to pediatric residents (44.6% vs. 31.6%, *p*=0.04). The proportion of participants who considered themselves to have sufficient knowledge in self-assessment was higher among residents who had been in training for less than 24 months (*p*=0.03).

The median knowledge score was 8.6 (7.75-10.0). Only 25.2% (n=77) of the residents had sufficient knowledge about the HPV vaccine. The knowledge scores of the participants according to their demographic characteristics are presented in Table 2. The residents of OB/GYN had a significantly higher level of knowledge score than the pediatric residents (median (IQR)=9.4(8.4-10.6) and 8.4(7.4-9.8) respectively, *p*=0.007). The mean knowledge score of the residents who stated that they had sufficient knowledge about HPV was higher than those who stated that they did not have sufficient knowledge (*p*<0.001). There were no significant differences between the knowledge scores of residents based on age, marital status, child status, gender, or residency duration. Although residents with less than 24 months of training reported having more knowledge, there was no significant difference in knowledge scores between these residents and those with more than 25 months of training (*p*=0.71).

The false proposition "*HPV vaccine is only applied to sexually active women*" in the question about the HPV vaccine was marked as correct (*disagree* or *strongly disagree*) by female residents more than by male residents (58.7% and 38.7% respectively, $\chi^2(1)=10.4$, *p*=0.001, OR=2.25, 95% CI=1.36-3.70). Pediatric residents marked the false proposition that *"HPV vaccine may cause HPV infection"* significantly more correct (*disagree* or *strongly disagree*) compared to OB/GYN residents (62.8% and 41.1% respectively, $\chi^2(1)=11.1$, *p*=0.003, OR=2.42; 95% CI: 1.34-4.37). The rate of OB/GYN residents who found the proposition that lifelong protection can be achieved with HPV vaccination to be true was statistically significantly higher than that of pediatric residents (30.4% and 13.2% respectively, $\chi^2(1)=9.85$, *p*=0.002, OR= 2.87; 95% CI=1.46-5.64).

Table 2. The number of correct answers according to the descriptive characteristics of residents

	n	Number of correct answers, median (Q_1-Q_3)	p
Sex			
Male	93	8.4 (7.4-9.6)	0.074
Female	213	8.8 (7.8-10.2)	
Specialty			
Gynecology & Obstetrics	56	9.4 (8.4-10.6)	0.007
Pediatric	250	8.4 (7.4-9.8)	
Marital status			
Married	110	8.8 (7.8-10.0)	0.55
Single	196	8.6 (7.6-9.8)	
Residency duration			
Less than 24 months	115	8.4 (7.4-10.2)	0.71
More than 25 months	191	8.6 (7.8-9.8)	
Knowledge level about HPV			
I know	104	10.5 (9.0-11.2)	<0.001
I do not know	202	8.4 (7.4-9.6)	
Child Status			
No child	261	8.6 (7.6-9.8)	0.45
Having children	45	8.8 (8.0-10.4)	

HPV: Human papillomavirus, Q_1-Q_3: 25th-75th percentile.
*Bold values indicate statistical significance at the p<0.05 level

The vaccination rate of female residents was 13.6%. Only one male resident (1.1%) reported HPV vaccination. Female residents had significantly higher HPV vaccination rates than male residents (p<0.01). The HPV vaccination rates of residents were not significantly different according to their specialty (p=0.07).

Among residents, 7.1% indicated that they would only vaccinate their daughters against HPV, while 68.3% stated that they would vaccinate both their sons and daughters against HPV. It was observed that 31.5% of male and 16% of female residents chose the option "*I do not want to have my children vaccinated against HPV*". On the other hand, 58.7% of male and 72.8% of female residents chose the option "*I would get both my daughter and my son vaccinated*". A significant difference was found between the residents' opinions about vaccinating their children according to gender (p=0.01).

Those who did not intend to vaccinate their children were asked to provide their reasons. Most of those who did not intend to vaccinate their son (55.2%) believed the vaccine was unnecessary. In contrast, the majority of those who did not intend to vaccinate their daughter (55.5%) stated that they lacked sufficient information about the vaccine. The proportion of respondents who cited high cost as a reason for not vaccinating their daughters was 6.9%, whereas the corresponding figure for sons was 3.5%.

When queried about their recommendations for HPV vaccination, 13.1% (n=40) of the residents indicated that they would always recommend it, 29.7% (n=91) that they would often recommend it, 18.6% (n=57) that they would sometimes recommend it, 30.4% (n=93) that they would rarely recommend it, and 8.2% (n=25) that they would never recommend it. There were no statistically significant differences between gender, specialty, duration of residency, age, marital status, having children, or having had their children vaccinated in terms of recommending HPV vaccination to their patients.

The vaccination recommendations and knowledge scores of residents are presented in Table 3. When the residents were grouped according to the status of recommending vaccination to their patients, there was no significant difference between the groups in terms of the median knowledge score (H(4, n=301) = 8.88, p=0.069). When residents were grouped according to the vaccination (or considered vaccination) status of their children, a significant difference was observed between the groups in terms of knowledge score (H(3, n=301) = 8.45, p=0.034). A post hoc analysis revealed that the median knowledge score of individuals who selected "both" was statistically significantly higher than that of those who selected "only daughter" (n 209 and 22; median (IQR) 8.8 (7.8-10.2) and 7.8 (7.0-9.0), respectively; p=0.039).

The vaccine recommendations grouped by specialty and knowledge score are shown in Figure 1. No statistically significant correlation was identified between vaccination recommendation and specialty (χ^2(3)=4.15, p=0.246; χ^2(4)=4.33, p=0.363; respectively).

The proportion of residents who thought that the HPV vaccine should be included in the national vaccination schedule was 50.6%, and 96.7% of the residents who participated in the study stated that they wanted to receive information about the HPV vaccine.

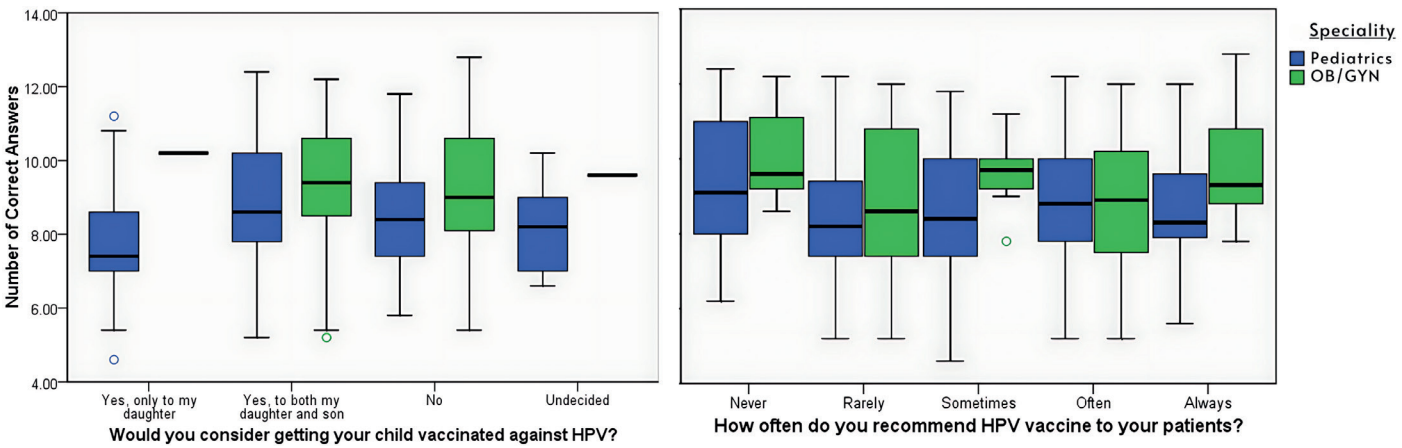

Figure 1. Vaccination recommendations and the number of correct answers by residents grouped according to their areas of specialty
G&O: Gynecology & obstetrics, HPV: Human Papillomavirus
In the box plot, the lower end of the black box represents the 25th quartile, the upper end represents the 75th quartile, the length represents the interquartile range (IQR), the length of the line extending outside the box represents the range, and the black line inside the box represents the median.

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Table 3. Vaccination recommendations and numbers of correct answer of residents

Would you consider getting your child vaccinated against HPV?			How often do you recommend HPV vaccine to your patients?					
			Never	Rarely	Sometimes	Often	Always	Total
Yes, only to my daughter		n	2	4	5	7	4	22
		Row %	9.1%	18.2%	22.7%	31.8%	18.2%	100.0%
		Column %	8.0%	4.3%	8.8%	7.7%	10.3%	7.2%
	NCA	Median	8.50	7.30	6.60	8.20	8.40	7.80
		Q1	6.20	6.30	6.00	7.40	7.70	7.00
		Q3	10.80	8.20	7.20	9.60	9.00	9.00
		IQR	4.6	1.9	1.2	2.5	2.7	2.0
Yes, to both my daughter and son		n	20	68	35	64	22	209
		Row %	9.6%	32.5%	16.7%	30.6%	10.5%	100.0%
		Column %	80.0%	73.1%	61.4%	70.3%	56.4%	68.5%
	NCA	Median	9.40	8.30	9.40	8.90	8.70	8.80
		Q1	8.90	7.40	8.00	7.80	8.00	7.80
		Q3	11.20	9.50	10.40	10.50	10.20	10.20
		IQR	2.3	1.9	2.4	2.7	2.2	2.4
No		n	3	17	13	19	11	63
		Row %	4.8%	27.0%	20.6%	30.2%	17.5%	100.0%
		Column %	12.0%	18.3%	22.8%	20.9%	28.2%	20.7%
	NCA	Median	8.40	9.00	7.80	9.00	8.40	8.60
		Q1	8.00	8.00	7.40	7.00	7.40	7.40
		Q3	8.80	10.00	8.60	9.80	9.80	9.40
		IQR	0.8	2	1.2	2.8	2.4	2.0
Undecided		n	0	4	4	1	2	11
		Row %	0.0%	36.4%	36.4%	9.1%	18.2%	100.0%
		Column %	0.0%	4.3%	7.0%	1.1%	5.1%	3.6%
	NCA	Median	.	7.20	8.30	8.40	9.70	8.40
		Q1	.	6.80	7.30	8.40	9.20	7.00
		Q3	.	8.20	9.10	8.40	10.20	9.20
		IQR	-	1.4	1.8	0.0	2	2.2
Total		n	25	93	57	91	39	305
		Row %	8.2%	30.5%	18.7%	29.8%	12.8%	100.0%
		Column %	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	NCA	Median	9.40	8.40	8.60	8.80	8.60	8.60
		Q1	8.60	7.40	7.40	7.80	8.00	7.80
		Q3	11.00	9.40	10.00	10.20	9.80	10.00
		IQR	2.4	2	2.6	2.4	1.8	2.2

HPV: Human Papillomavirus, NCA: Number of Correct Answers, IQR: Interquartile range, Q_1: 25th percentile, Q_3: 75th percentile.

4. Discussion

This study aimed to assess the knowledge, attitudes, and practices of OB/GYN and pediatric residents in Izmir, Turkey, regarding the HPV vaccine. The main findings of the study were as follows: Only 25.2% of residents had adequate knowledge about HPV and HPV vaccine, residents had unexpectedly low vaccination rates, and only 13.1% of residents always recommended HPV vaccine to their patients. The findings indicate that these physician groups, which play a pivotal role in disseminating information and guidance to the community, should receive enhanced training and support in the dissemination of the HPV vaccine, given that it is not included in the national vaccination program in Turkey.

The results of the study are in accordance with the findings of previous studies. For instance, numerous studies have demonstrated that health workers' knowledge of HPV infection and HPV vaccination is insufficient (17-19,21,23-26). However, in contrast to these studies, Mexican doctors' knowledge of cervical cancer was reported to be adequate (27). A study conducted in Turkey revealed that the average HPV knowledge level of non-OB/GYN physicians was adequate (16). These differences may be attributed to variations in health policies, educational systems, and cultural norms between countries.

It is notable that the vaccination rates of residents were low, which is similar to other studies in the literature. In a study by Özçam et al. it was found that the vaccination rate among female health workers was 6.5% (28). This can be explained by factors such as the cost of the vaccine, reliability concerns, and potential impact on sexual practices (29-32). Furthermore, these low rates are inadequate in light of the vaccine's protective efficacy.

The proportion of residents who had received or were considering HPV vaccination for their children was consistent with those reported in the existing literature. The high rate of pediatricians vaccinating their daughters was consistent with the findings of the study by Ozsurekci et al. (33). Similarly, Tolunay et al. reported that pediatricians and obstetricians had high rates of vaccination of their girls (14). In one study, physicians in Malaysia recommended vaccination for only 26.3% of boys (34). Similarly, Tolunay et al. reported that 79.5% of pediatricians and obstetricians/gynecologists preferred to vaccinate girls, while 36.7% preferred to vaccinate boys (14). In a separate study conducted in Turkey, 52.7% of non-OB/GYN physicians indicated approval for vaccination for themselves, 84.3% for their daughters, and 56.8% for their sons (16). This study found that the rates of residents who had or were considering HPV vaccinations for their children were consistent with the literature. However, although the proportion of residents who would consider vaccinating their children was high, the proportion of those who vaccinated themselves was low. This finding indicated that there was a clear inconsistency between the health practices of health workers and their professional advice, which requires further investigation.

A previous study revealed that general practitioners/family doctors who did not vaccinate their daughters against HPV were 20% less likely to recommend HPV vaccination to their patients (35). In another study conducted among health workers, it was found that the most common reasons for not vaccinating girls were the safety of the vaccine (41.2%), the cost of the vaccine (10%) and the increased freedom of sexual intercourse after vaccination (5%) (29). A previous study reported that gynecologists demonstrated a high level of knowledge regarding vaccination, yet they cited financial concerns and patient refusal as significant barriers to its implementation (30). In their study, Yıldırım et al. found that cost was the most frequently cited reason by pediatricians for not recommending vaccination (31). In another study conducted in Turkey, the high cost of the HPV vaccine was cited by 50 percent as the reason for not getting the vaccine (32). These findings indicate that cost and concerns about the safety of the HPV vaccine have a considerable influence on health professionals and families regarding the dissemination of HPV vaccination.

The low rate of residents who recommended HPV vaccination to their patients was similar to that reported in another study conducted in Turkey (36). In the same study, it was reported that 29.6% of family physicians and 36.6% of pediatricians provided information about adolescent vaccines, including HPV vaccinations if the adolescent or the adolescent's family requested such information. This may be attributed to a lack of knowledge among physicians regarding the subject of vaccination.

It has been demonstrated that patients' inclination toward vaccination is contingent on the extent of knowledge that physicians possess regarding vaccines (37). Similarly, Rosen et al. obtained similar results in terms of participants' level of knowledge. The study also emphasized that the opportunities offered by the HPV vaccine should be utilized and the level of knowledge of physicians about this vaccine should be increased (20).

The findings of this study highlight the necessity to address the deficiency in knowledge regarding HPV vaccination among OB/GYN and pediatric residents. Eliminating this deficiency may increase vaccination rates in the community and reduce diseases associated with HPV infection (38). In addition, as in

many countries, it is necessary to identify barriers to the HPV vaccine in Turkey and develop strategies to increase vaccine coverage (39).

Strengths and limitations

This study was conducted only with pediatric and OB/GYN residents in Izmir and is not generalizable nationally. Therefore, a multicenter national study is needed. The reasons for non-participation among residents who declined to participate in the study were not evaluated. Although the internal consistency of the questionnaire was appropriate, a pre-test questionnaire would be preferable. Residents were asked whether they intended to have their children vaccinated against HPV. However, the question should have been phrased in a way that distinguished between the rates at which they had been vaccinated and at which they planned to vaccinate.

This study is one of a limited number of available studies that report on the attitudes, practices, and knowledge levels of pediatric and OB/GYN residents regarding HPV and the HPV vaccine. As a result, this study may inform the clinical approach of physicians, residency training, and future studies on this subject.

As a result, the findings of this study offer valuable insights that can inform the dissemination of the HPV vaccine. It also underscores the necessity for enhanced educational and support initiatives to augment the knowledge of pediatric and obstetrics/gynecology residents in Turkey regarding HPV vaccines. This may increase vaccination rates within the community, thereby contributing to a reduction in HPV infection and the diseases that are a consequence of it.

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Declaration of AI and AI-assisted technologies in the writing process

In the course of composing the article, the DeepL Translator & Write and PoolText were employed for the purposes of spelling, grammar, and reference accuracy. After using this tools/services, the authors reviewed and edited the content as needed and take(s) full responsibility for the content of the publication.

Author contribution

Study conception and design: NE and İG; data collection: NE and DO; analysis and interpretation of results: NE, DO, AE, and İG; draft manuscript preparation: NE, DO, AE, and İG. All authors reviewed the results and approved the final version of the manuscript.

Ethical approval

The study was approved by the Dr. Behçet Uz Pediatric Diseases and Surgery Training and Research Hospital Clinical Research Ethics Committee (Protocol no. 06/02.01.2020).

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Conflict of interest

The authors declare that there is no conflict of interest.

Yazar katkısı

Araştırma fikri ve tasarımı: NE ve İG; veri toplama: NE ve DO; sonuçların analizi ve yorumlanması: NE, DO, AE, ve İG; araştırma metnini hazırlama: NE, DO, AE, ve İG . Tüm yazarlar araştırma sonuçlarını gözden geçirdi ve araştırmanın son halini onayladı.

Etik kurul onayı

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