ANKARA MEDICAL JOURNAL

Research Article

Ankara Med J, 2021;(4):561-572 // 10.5505/amj.2021.26878

EVALUATION OF PHYSICIANS' OPINIONS, ATTITUDES AND BEHAVIORS ABOUT ANTI-VACCINATION

HEKİMLERİN AŞI KARŞITLIĞI HAKKINDAKİ GÖRÜŞ, TUTUM VE DAVRANIŞLARININ DEĞERLENDİRİLMESİ

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Geliş Tarihi (Submitted): 17.11.2021 // Kabul Tarihi (Accepted): 09.12.2021

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ANKARA MEDICAL JOURNAL

Öz

Amaç: Son yıllarda gerek dünyada gerekse ülkemizde aşı karşıtlığı hızla yayılmaktadır. Aile Hekimleri başta olmak üzere tüm sağlık çalışanlarının aşı karşıtlığı konusunda bilgi sahibi olması gerekmektedir. Çalışmamızın amacı Aile Hekimliği kliniklerindeki asistan doktorların bu konudaki görüş, tutum ve davranışlarının değerlendirilmesidir.

Materyal ve Metot: Kesitsel tipteki çalışma 15.06.2019-15.11.2019 tarihleri arasında yürütülmüş olup Ankara'da bulunan tüm Aile Hekimliği kliniklerine ulaşılmıştır. 311 hekim çalışma grubunu oluşturmuştur. Katılımcılara veri toplama aracı olarak sosyodemografik-mesleki özelliklerinin, bağışıklama ve aşılar hakkındaki bilgilerinin ve aşı karşıtlığı ile ilgili görüş, tutum ve davranışlarının sorgulandığı anket formu uygulanmıştır. Tüm hesaplamalarda $p<0,05$ değeri istatistiksel anlamlılık olarak kabul edilmiştir.

Bulgular: Aşı karşıtlığıyla karşılaşanların oranı %59,5 (n=185) olarak saptanmıştır. Sözleşmeli Aile Hekimliği Uzmanlığı (SAHU) eğitimine tabi asistanların, 3 yıl ve üzeri asistanlık yapanların, birinci basamak tecrübesi olanlar daha fazla aşı karşıtlığı vakası yaşamışlardır. Bu katılımcıların %85,4'ü (n=158) kişileri ikna etmeye çalıştığını, %12,4'ü (n=23) kişilerin fikrine saygı duyduğunu belirtmiştir. Katılımcıların %94,9'u (n=295) aşı reddi fikrine, %82'si (n=255) aşı tereddütü fikrine karşıdır. %0,3 (n=1) katılımcı aşı reddi fikrini desteklemektedir. Katılımcıların %23,2'si (n=72) aşı karşıtlığı ile ilgili eğitim almış olup bunların %59,7'si (n=43) aldığı eğitimi yeterli bulmaktadır.

Sonuç: Aşı tereddüdünü destekleyen veya bu konuda kararsız olan katılımcıların oranı azımsanmayacak seviyededir. Asistanların aşı karşıtlığı konusunda eğitimlerinin yetersiz olduğu görülmektedir. Aşı karşıtlığı ile mücadelenin daha etkin ve başarılı olması için eğitimler planlanmalı, gerekli hukuki düzenlemeler yapılmalı, sağlık okuryazarlığı artırılmalıdır.

Anahtar Kelimeler: Aşı reddi, sağlık okuryazarlığı, eğitim, aile hekimliği.

Abstract

Objectives: Recently, anti-vaccination has been rapidly spreading both around the world and in our country. Healthcare workers, including Family Physicians, must have knowledge of anti-vaccination. This study aimed to assess views, attitudes and behaviors of residents in Family Medicine clinics toward this issue.

Materials and Methods: This cross-sectional study was performed between 15.06.2019 and 15.11.2019 and reached all Family Medicine clinics in Ankara. The study group consisted of 311 physicians. For data collection, participants received a questionnaire form questioning sociodemographic-occupational characteristics, knowledge of immunization and vaccines and views, attitudes and behaviors toward anti-vaccination. The value of $p<0.05$ was the cut-off point for statistical significance in all calculations.

Results: The rate of those having encountered anti-vaccination was 59.50% (n=185). Residents of Contract Family Medicine (CFM) training, those who had been a resident for three years and more, and those with primary care experience had encountered more anti-vaccination cases. Of these participants, 85.40% (n=158) tried to convince individuals and 12.40% (n=23) respected their opinions. Of the participants, 94.90% (n=295) were against vaccine refusal and 82% (n=255) were against vaccine hesitancy while 0.30% (n=1) supported vaccine refusal. Of the participants, 23.20% (n=72) received training on anti-vaccination, and 59.70% (n=43) of those found the training received sufficient.

Conclusion: The rate of participants supporting vaccine hesitancy or being unsure about it was considerable. Residents' training on anti-vaccination is insufficient. Therefore, training should be planned, necessary legal assessments should be performed, and health literacy should be increased to fight against anti-vaccination effectively and successfully.

Keywords: Vaccination refusal, health literacy, education, family practice.

Introduction

Vaccination is an effective, safe and cost-efficient method preventing disabilities and deaths caused by infectious diseases. By 2018, the general rate of immunization in Turkey was reported to be about 95%.[1] Besides the increasing vaccination rates in the world and Turkey, anti-vaccination and vaccine anxiety started to increase by the early 2000s and have been significant, particularly within the last eight years. Recently, anti-vaccination/vaccine refusal has been rapidly spreading both around the world and in our country. The number of vaccine refusals in Turkey was 183 in 2011 and reached 23,600 in 2017.[2] The leading reason for hesitancy in the implementation of vaccination schedule in Turkey has been revealed to be the lack of trust in the contents of vaccine, the second reason to be the lack of trust in the vaccine itself and the third to be the religious factors.[3]

According to the World Health Organization (WHO), the process of vaccine hesitancy has been degreed as relative acceptance, delay in acceptance and relative refusal between full acceptance of vaccination and outright refusal of it.[4] Vaccine refusal is the behavior of refusing all vaccines or getting none of the vaccines. Vaccine hesitancy is for one or more vaccines and the state of delay in acceptance of the vaccine or refusal of the vaccine although it is available. Vaccine refusal is not getting the vaccine through exhibiting a will to refuse all vaccines.[5] The WHO stated anti-vaccination among the factors threatening health and announced that they would fight against vaccine hesitancy-refusal in their five-year strategic plan aiming to create a healthier world for everyone.[6]

It is necessary for all healthcare workers, particularly family physicians, to be aware of anti-vaccination thoughts being an important and increasingly more common barrier to vaccination and answer the question marks in the individuals' minds clearly, accurately and effectively. This study aimed to assess the views, attitudes and behaviors of the residents continuing their specialty training in Family Medicine clinics toward that issue in our country where the anti-vaccination/vaccine refusal had rapidly been increasing. The results obtained from this study are expected to be guiding for healthcare workers about vaccine refusal/anti-vaccination, measures to be taken for society and planning to be done as well as reveal the present condition in terms of family physicians.

Materials and Methods

This cross-sectional study was performed between the 15th of June 2019 and 15th of November 2019. All Family Medicine clinics and departments in Ankara were reached for the study and the study population consisted of 360 residents working in these clinics or departments. A total of 311 residents were reached, and 49 physicians could not be reached due to some reasons such as permission, report, etc. A total of 311 physicians constituted the study group. For data collection, the participants received a questionnaire form in which they were

questioned about their sociodemographic-occupational characteristics, knowledge of immunization and vaccines and views, attitudes and behaviors toward anti-vaccination. Participation in the study was based on voluntariness. None of the physicians who were reached refused to participate in the study. The data were analyzed with the SPSS v22 software program. Numbers and percentiles were used in presenting the frequency tables, and mean values were expressed with standard deviation. The value of $p<0.05$ was accepted as the statistical significance in all calculations.

Results

A total of 311 Family Medicine residents were included in the study. While the mean age of the participants was 31.66±7.53 years, the mean age was 30.69±7.53 years in female participants and 33.45±8.57 years in male participants. Of the participants, 30.20% (n=94) had at least one child. Some sociodemographic and occupational characteristics of the participants were given in Table 1.

The question "Have you ever hesitated to get your child vaccinated" was asked to the participants who had children, and ten individuals (10.63%) stated that they had hesitated at least once and 84 (89.70%) stated that they had never hesitated. While no statistically significant relationship was found between the answers to that question and title and experience in primary care, there was a statistically significant relationship with gender ($p=0.005$) and age ($p<0.001$). The rate of hesitancy among the female participants compared with the male participants and in the age group of 41 years and above compared with the other age groups was higher while getting their children vaccinated.

The participants were asked whether they had ever hesitated to get the adult vaccines or not, and 7.40% (n=23) of them stated that they had hesitated at least once, and 92.60% (n=288) stated that they had never hesitated. While no statistically significant relationship was found between the answers to that question and age, marital status, title, number of years as a resident, experience in primary care, and years of experience in primary care, there was a statistically significant relationship between the status of having hesitated to get the vaccine and age ($p=0.017$) and years of experience in primary care ($p=0.027$). The age group of 41 years and above compared with the other age groups and those who worked in primary care for more than four years compared with those working for a shorter time had hesitated while getting themselves vaccinated at a higher rate. The participants' reasons for hesitancy while getting the vaccine were exhibited in Table 2.

When the distribution of the participants' knowledge on the vaccine side effects was assessed, the flu-like symptoms were in the first place with a rate of 94.60%, while vaccine-associated sensitivity reactions were in the second place (80.39%) and rash/skin lesions (71.06%) in the third place. Of the participants, 8.04% evaluated multiple sclerosis, and 5.14% evaluated autism as a vaccine side effect. The participants worked in

primary care for four years and more compared with those who did not evaluate multiple sclerosis and autism as a vaccine side effect at a higher rate (p=0.009). There was no statistically significant difference between the participants' status of evaluating multiple sclerosis and/or autism as a side effect and their vaccine hesitancy, reasons of hesitancy and opinions about hesitancy (p>0.05).

Table 1. Distribution of some sociodemographic and occupational characteristics of the participants (n=311)

Sociodemographic Characteristics		**n**	**%**
Gender	Female	201	64.63
	Male	110	35.37
Age	30 years and below	211	67.85
	31-40 years	54	17.36
	41 years and above	46	14.79
Marital status	Married	182	58.52
	Single	129	41.48
Occupational Characteristics		**n**	**%**
Title	Full-time resident	235	75.56
	Contract resident	76	24.44
Years of Specialty Training	0-1 year	134	43.09
	1-2 years	66	21.22
	2-3 years	46	14.79
	3 years and more	65	20.90
Experience in Primary Care	Yes	194	62.38
	No	117	37.62
Duration of Experience in Primary Care (n=194)	<4 years	117	37.62
	≥4 years	77	24.76

Table 2. The participants' reasons for hesitancy while getting the vaccine

Reasons of Vaccine Hesitancy for Their Children	**n**	**%**
Side Effects	4	40
Effectiveness – Safety	3	30
Content of the Vaccine	2	20
Complication	1	10
Reasons of Vaccine Hesitancy for Themselves	**n**	**%**
Side Effects	13	56.52
Effectiveness – Safety	4	17.39
Content of the Vaccine	4	17.39
Fear of Vaccine – Fainting	2	8.69

The participants' levels of knowledge on the vaccine side effects were assessed over the number of side effects they accurately knew. The ones for which the consensus was reached with the latest updates in literature were presented as the vaccine side effects, and the participants were asked which side effects they knew. [7–10] Mean

number of the side effects that were accurately known by the participants was 6.3±2.06, and the median number was 6.00. Their levels of knowledge on the vaccine side effects were categorized into three groups (low, moderate and high), and 20% of the participants had a low level of knowledge (Fig. 1). The participants who had encountered anti-vaccination before had a higher level of knowledge on the side effects compared with those who had not encountered ($p=0.036$).

The participants were asked whether they had ever encountered any negative information about the vaccines, and 31.20% (n=97) stated that they had encountered. No statistically significant relationship was found between the answer of the participants to that question and their sociodemographic and occupational characteristics ($p>0.05$). The internet came first as a way of getting negative information.

The participants were asked about their opinions about the vaccines in the national vaccination schedule, and while 91% (n=283) stated that they must be compulsory and 5.10% (n=16) stated that they must be based on voluntariness, 3.90% (n=12) did not express any opinions. The number of those who gave the answer that the vaccines must be compulsory was higher among the participants who worked in primary care for more than four years ($p<0.001$).

Of the participants in our study, 34.70% stated that there were people defending anti-vaccination around them. The rate of participants stating that they had encountered anti-vaccination before was 59.50% (n=185). There were statistically significant relationships between the status of having encountered anti-vaccination before and sociodemographic characteristics of the participants and the residents subject to the Contract Family Medicine (CFM) training compared with the full-time residents, those who had been a resident for three years and above compared with those with less duration of experience and those with experience in primary care compared with those with no experience encountered anti-vaccination cases at higher rates ($p<0.001$).

Of the participants who stated that they had encountered anti-vaccination before, 85.40% (n=158) tried to convince the individuals to get the vaccine and 12.40% (n=23) respected opinions of the anti-vax and did not persist. Sociodemographic and occupational characteristics of the participants did not cause a difference here ($p>0.05$).

Of the participants, 90% (n=280) stated that they would try to convince the anti-vax and 8.70% (n=27) stated that they would respect their opinion and not persist in case they encountered anti-vaccination in the future. Sociodemographic and occupational characteristics of the participants did not cause a difference here ($p>0.05$).

Of the participants, 94.90% (n=295) were against vaccine refusal, and 82% (n=255) were against vaccine hesitancy. Only 0.30% (n=1) of the participants supported the vaccine refusal. While 90.70% (n=282) stated that they must report anti-vaccination to the legal authorities and 71.10% (n=221) stated that it must be

punished, 19.90% (n=62) stated that they were unsure about that. Sociodemographic and occupational characteristics of the participants did not cause a difference here (p>0.05). However, men tended more to report the anti-vaccination to the legal authorities compared with women (p=0.021).

Of the participants, 23.20% (n=72) stated that they had received training or attended a seminar about anti-vaccination, but most of the residents within the first year of residency had not received any training. Of those who had received training, 59.70% (n=43) found the training received sufficient. The rate of having received training on anti-vaccination was higher among CFM residents compared with the full-time residents and among those with experience in primary care for four years and above compared with the others (p=0.009, p=0.025, p=0.039). The rate of stating that the training received was sufficient was higher among those without any experience in primary care compared with those who had experience (p=0.044).

The participants were asked about their opinions about the possible reasons for anti-vaccination, and the answers given were presented in Table 3.

The participants' opinions about what could be done to prevent anti-vaccination were presented in Table 4.

Table 3. Basic reasons of anti-vaccination according to the participants

Basic Reasons of Anti-Vaccination*	n	%
The press, broadcast, media, and social media include negative opinions about the vaccines.	289	92.93
Some members of healthcare have negative opinions about the vaccines.	224	72.03
The individuals avoid vaccination due to their religious and cultural beliefs.	210	67.52
The legal basis for the implementation of the vaccination is not sufficient.	198	63.67
There are negative articles and publications about the vaccines.	149	47.91

* More than one reason could be preferred.

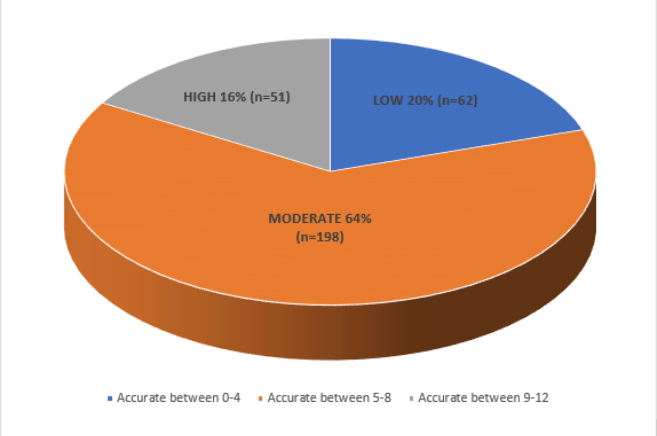

Figure 1. Distribution of the participants' levels of knowledge on the vaccine side effects

Table 4. Distribution of the participants' opinions about the actions to be taken to prevent anti vaccination

Actions to Be Taken to Prevent Anti-Vaccination	n	%
Conducting a propaganda to support vaccination on social media	268	86.17
Focusing on the fight against anti-vaccination in the National Health Policy	267	85.85
Administering a legal sanction for vaccination	257	82.64
Informing the healthcare workers about anti-vaccination and fighting against it	245	78.78
Developing various strategies to eliminate the religious and cultural vaccine hesitancy by the central and local authorities	244	78.46
Preventing the broadcasts encouraging anti-vaccination in the visual-auditory and written media tools	240	77.17
Forming a platform against anti-vaccination by the non-governmental organizations	205	65.92
Encouraging the production of domestic vaccine by the government	180	57.88

Note: More than one option could be preferred.

Discussion

One of the most important results obtained from this study assessing the views, attitudes and behaviors of the physicians toward vaccine refusal/vaccine hesitancy is that although the majority of the participants stated that they were against vaccine refusal or hesitancy, 7.70% supported vaccine hesitancy and 10.30% did not have an opinion about that. In terms of vaccine refusal, there was 1 participant who supported the vaccine refusal, and the rate of those with the ones who stated that they had no idea was about 5% among all participants. In literature, there is more opposition to vaccine refusal compared with vaccine hesitancy.[10–12] In a study performed on healthcare workers in Turkey in 2019, 89.50% of the participants were against vaccine refusal while 1.30% supported it.[13] There is a considerable rate of attitudes supporting the vaccine hesitancy in the results obtained from studies, particularly on the healthcare workers, which may pose a risk for vaccination services.

In a study, the information or assurance provided by the healthcare workers for the parents intending to refuse the vaccine or having vaccine hesitancy was the most important factor in terms of changing their minds.[14] The role of physicians and good communication with the patient is essential in decreasing vaccine refusal or vaccine hesitancy in society.[15] In our study, the number of participants who were against vaccine hesitancy was lower than the number of those who were against vaccine refusal, which appears to be a point that needed to be addressed. Physicians' unsureness about this issue or their support of these opinions may increase the anti-vaccination movements as well as invalidate the efforts to prevent anti-vaccination.

In our study, about 10% of the participants who had children had hesitated to get their children vaccinated, and the most common reason for that hesitancy was the vaccine side effects. In a study performed on healthcare

workers in 4 different countries, the most common reason for hesitancy was the vaccine side effects.[16] The hesitancy of the parents while having their children vaccinated for a similar reason may be due to their approach to the issue with the parent's point of view beyond being a health professional.

One-third of the participants in our study received negative information about the vaccines in different ways, and the most common way of getting negative information was the internet. In a study performed over search engines, 55% of the adults in the United States of America received health-related information via the internet, and when the first ten results in 7 search engines were assessed, 43% of the websites there were against vaccination.[17] There may be a considerable amount of false unaccredited, and unscientific information about health and vaccines on social media and the internet. It is possible for individuals apart from health professionals to have vaccine hesitancy resulting in vaccine refusal by getting false information about the vaccines.

According to the participants' status of having encountered anti-vaccination before, 59.50% of the participants in our study had encountered and 85.40% of those tried to convince the anti-vaccine individual while 12.40% respected him or her and did not persist. When they were asked what they would do in case of anti-vaccination, 90% stated that they would try to convince the anti-vax, while 8.70% stated that they would respect his/her opinion and not persist, and 1.30% had no idea about that. The vaccination schedule determined by the Turkish Ministry of Health is advisory in Turkey, and no sanction is administered to the patients who do not want to get the vaccine or vaccine refusals.[18] The rate of participants who did not/would not convince the anti-vax person was considerably high in our study, which may be because no legal sanction is administered for anti-vaccination in Turkey. In addition, the unsureness of some healthcare workers in our study about the fight against anti-vaccination may be another factor for this rate.

Of the participants, 34.70% stated that there were people defending anti-vaccination around them. According to research conducted by the European Center for Disease Prevention and Control (ECDC) in 2015, a single group could not be completely unsure about the vaccines, but more than one unsure and hesitant group could affect the entire society.[19] Although the influence of surrounding people on anti-vaccination is important, and it may allow the physicians involved in the vaccination process to convince the individuals defending anti-vaccination around them while not sensitively handling the anti-vaccine approaches may cause an increase in the number of anti-vaccine groups and endanger the public health.

Of the participants, 23.20% received training on anti-vaccination, which reveals that there is a lack of training. Vorster's et al. stated that training must be organized for future healthcare providers to improve pre-service training on fighting against anti-vaccination and close the gap in that issue.[20] It may not be possible for a family physician who had not received sufficient training on vaccination yet and who thought that s/he was lack of

knowledge to fight against anti-vaccination. This problem can be overcome with the training on both vaccination and anti-vaccination. The participants with experience in primary care found the training they had received insufficient compared with those without experience. This may be because the physicians working in the field encounter anti-vaccination more often and need new approaches during this process.

For the actions to be taken to prevent anti-vaccination, the participants focused on the usage of social media and the administration of penal sanctions for the anti-vax. The study performed in the USA revealed that most of the adults got the information about health on the internet and that 43% of the websites there were opposed to the vaccines, which supports the participants' opinions.[17] Therefore, using media to prevent anti-vaccination can be a practical, effective and fast way. On the other hand, there is no penal sanction for anti-vaccination in Turkey.[18] This may be one of the reasons for the increase in anti-vaccination. Therefore, carrying out legal arrangements on vaccination and administering penal sanctions for anti-vaccination can be effective in the prevention of anti-vaccination.

In our study, the participants with experience in primary care and those who had more years of experience had encountered anti-vaccination more frequently. As the primary care workers are responsible for childhood vaccination, the difference caused by working in primary care and duration of the experience is an expected condition.

Of the participants, 92.93% stated the basic reason for anti-vaccination as "the press, broadcast, media, and social media including negative opinions about the vaccines". One of the objectives of the Turkish Ministry of Health is to increase health literacy in our country.[21] Giving priority to the press, broadcast and social media here can not only increase the success of health literacy but also allow the relevant target to be reached in a shorter time.

All participants except for one stated that they were against vaccine refusal. However, the rate of participants who supported vaccine hesitancy or who were unsure about that was considerable. It was concluded that the Family Medicine residents were lack of training on vaccines and anti-vaccination. Firstly, the reasons for this condition should be revealed, and the physicians' lack of training should be made up. Moreover, training on how to cope with anti-vaccination should be provided for the residents and family physicians working in primary care. The necessary legal arrangements for anti-vaccination should be carried out. The fight against anti-vaccination should be comprehensively carried out by increasing health literacy in society.

Ethical Considerations

Approval from the Ethics Committee of Ankara Yildirim Beyazit University (29.05.2019/2019-265, Decision Number: 54) was granted, and informed consent was obtained from each participant.

Funding

The authors received no financial support for the research, authorship and/or publication of this article.

Conflict of Interest

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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