

# Attitude of healthcare professionals in Türkiye to COVID-19 vaccine

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## Abstract

**Background:** The COVID-19 vaccine has been effective in reducing infection rates and disease severity; however, vaccination coverage has been lower than expected because of vaccine hesitancy, even among healthcare workers.

**Aim:** To investigate the attitude of healthcare professionals in Türkiye to the COVID-19 vaccine.

**Methods:** This cross-sectional study was conducted between December 2020 and February 2021 among physicians, nurses, midwives, emergency medical technicians, dieticians, and physiotherapists in Türkiye, using the snowball sampling method for data collection. Data were analysed using SPSS version 23 and correlation analysis was conducted to evaluate linear relationship, and multivariate analysis to examine the cause-effect relationship between the variables ( $\alpha = 0.05$ ).

**Results:** A total of 1057 healthcare professionals participated; average age  $38.98 \pm 9.044$  (min = 19; max = 71), 71.7% ( $n = 758$ ) women, 69.9% ( $n = 739$ ) physicians. Of the respondents, 48.3% wanted to be vaccinated whether the vaccine was free or not, 12.1% ( $n = 128$ ) did not want to be vaccinated and 36.8% were not decided. The most common reasons for wanting to be vaccinated were to end the pandemic (25%,  $n = 264$ ), seeing vaccination as a good way to prevent COVID-19 disease (30.1%,  $n = 318$ ), protecting oneself and high-risk individuals from infection (22.2%,  $n = 235$ ), and hoping that vaccine would reduce the duration and severity of disease (22.9%,  $n = 242$ ). The most common reasons for not wanting to be vaccinated were fear of side-effects (26.1%,  $n = 276$ ) and lack of confidence in the reliability of a new vaccine (27.2%,  $n = 288$ ). The desire to be vaccinated had relationship with influenza vaccination, pneumococcus vaccination, history of COVID-19 infection or contact with a COVID-19 patient, and adherence to infection prevention measures ( $P < 0.05$ ).

**Conclusion:** Almost half of the healthcare workers in this study were not decided about being vaccinated. To increase acceptance in Türkiye, it is essential to conduct COVID-19 vaccine awareness and education among healthcare professionals because they are perceived as role models in the society, particularly in the health sector.

Key words: attitude, COVID-19, vaccine, healthcare professional, vaccination, Türkiye

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## Introduction

The COVID-19 pandemic has affected the whole world, with cases reported in every country (1). Clinical studies have been conducted to test the efficacy, effectiveness and safety of various drugs and vaccine candidates in several countries including Türkiye.

Vaccines are well-known for their effectiveness in building long-lasting immune response for the control of infectious diseases, and they have been found to prevent 2–3 million deaths per year (1). Vaccines have been developed in the past (1957, 1968, 1976, 1977) to control disease outbreaks, for example, the H5N1 outbreak in 1997/1998, the H1N1 outbreak in 2009, and other outbreaks (2,3). The discovery of safe and effective COVID-19 vaccines was expected to lead to great progress in the control of the pandemic (4). The billions of doses of vaccines administered globally have been instrumental to curbing the spread of the disease and mitigating its severity. Vaccination rates have reached up to 31.91 per

100 population (1), with a noticeable decrease in infection rates and a marked reduction in the severity of COVID-19 cases.

However, vaccine hesitancy, or reluctance to vaccinate, continues to increase, and it has been ranked among the 10 highest global health threats by WHO (1). Such hesitancy is a major problem in the control of epidemics such as the COVID-19 pandemic. Exposure to misinformation about the safety and effectiveness of the COVID-19 vaccine has resulted in reduced willingness to vaccinate against the disease (5), and refusal or unwillingness to vaccinate is reversing progress made in the fight against the disease. It therefore became important to know the attitude of healthcare professionals in Türkiye, who are seen as role models especially on health issues, and who are at the forefront of immunization services, about the COVID-19 vaccine.

Some studies conducted on the attitudes of healthcare professionals to influenza vaccine have reported that the most common reasons for not taking the vaccine were the

fear of side-effects and perception of its ineffectiveness (6,7). Other studies have examined the vital role of healthcare professionals in COVID-19 vaccination and their influence on the public regarding the decision to accept the vaccines (8, 9).

The public tends to assume that healthcare professionals will not hesitate to take the vaccine (10), especially because vaccination is perceived as the most effective way to achieve herd immunity and the starting point to get rid of the pandemic. While the discussions and curiosity about the effectiveness and side effects of the new COVID-19 vaccines continue, the attitudes and perceptions of healthcare professionals about the vaccines continue to gain relevance.

Studies on vaccine hesitancy among healthcare workers have reported concerns about safety and efficacy, mistrust of government and health institutions, insufficient data, and infringement of personal rights. Despite their medical training and clinical experience, healthcare workers cannot be exempted from experiencing the same emotions and dilemmas as members of the general population (11). A rapid systematic review has shown COVID-19 vaccine acceptance rates of 27.7–77.3% among healthcare workers (12). To the best of our knowledge, a comprehensive study on vaccine hesitancy among healthcare professionals had not been conducted in Türkiye before the commencement of this one. We, therefore, aimed to analyse the attitude of healthcare professionals in Türkiye about COVID-19 vaccines and the related factors.

## Methods

This cross-sectional study was conducted in Türkiye between December 2020 and February 2021 using the snowball sampling method and a questionnaire that was administered online. The participants included physicians, nurses, midwives, emergency medical technicians, dietitians, professionals and physiotherapists. The sample size was estimated as 384 adults, assuming 95% confidence interval and 5% sampling error.

The questionnaire contained 30 questions focusing on sociodemographic characteristics, health status, history of COVID-19 infection, prevention methods, and opinions and attitudes towards vaccines in general and the COVID-19 vaccine. The questionnaire was developed following extensive literature review, pretested among 30 individuals from 5 health worker professional groups and revised. It was then shared to participants online.

The research ethics committees of the Republic of Türkiye Ministry of Health and Hacettepe University Non-Interventional Clinical Research evaluated and approved the study. Each participant filled a consent form online to participate in the study.

Of the 2500 individuals reached, 1057 completed the survey, giving a response rate of 42.2%. Data management and analysis were done using SPSS version 23. Descriptive

statistics were presented as distributions, percentages, means, medians, quarters, minimum-maximum values, and standard deviation. When necessary, compliance of the variables to normal distribution was checked using the Shapiro-Wilk tests. T-test in independent groups was used for comparison of independent two-group continuous variables conforming to normal distribution, Mann-Whitney U test for comparison of continuous variables with independent two-groups that did not comply with normal distribution, Pearson Chi-square test for categorical variables to evaluate whether there was a difference between groups, and when necessary Fisher's exact test. ANOVA was used to compare the means of more than 2 independent groups, and Kruskal Wallis variance analysis was used when parametric conditions were not met. Correlation analysis was used to evaluate the linear relationships and multivariate analysis to analyse the cause-effect relationships between variables ( $\alpha = 0.05$ ).

## Results

Of the 1057 healthcare professional participants, 69.9% ( $n = 739$ ) were physicians, 23.4% ( $n = 247$ ) were nurses, and 6.7% ( $n = 71$ ) were from other occupations (Table 1). Also, 74.6% of them worked in internal medicine. Their mean age was  $38.98 \pm 9.044$  (min = 19, max = 71), 71.7% ( $n = 758$ ) were women, 77.4% ( $n = 818$ ) were married, 74.6% ( $n = 789$ ) were living with 3 or more people in the same household, 11.0% ( $n = 116$ ) were living with people aged 65 years and above, and 64.7% ( $n = 684$ ) were living with people aged 18 years or younger.

Some 40.6% ( $n = 401$ ) of the participants were of normal weight, 27.8% ( $n = 298$ ) had a chronic disease, 4.1% quit smoking during the pandemic, 22.9% ( $n = 242$ ) were current smokers, and 23.7% ( $n = 251$ ) were vaccinated against influenza in last 1 year before the survey.

Workplace distribution in the last 3 months before the survey showed that 71.1% ( $n = 305$ ) of the participants were working at outpatient clinics, 29% ( $n = 137$ ) at COVID-19 outpatient intensive care units, 32.1% ( $n = 339$ ) at family health care units (Figure 1).

Among the participants, 17.6% ( $n = 186$ ) and 88% ( $n = 930$ ) had close people who had been infected with COVID-19, 54.8% ( $n = 579$ ) had had close contact with someone who was infected with COVID-19, 26.0% ( $n = 275$ ) had been quarantined because of COVID-19.

Of the participants, 88.5% ( $n = 935$ ) said they had observed hand hygiene, 69.0% ( $n = 729$ ) observed physical distancing, 93.1% ( $n = 984$ ) had used the masks, 60.5% ( $n = 640$ ) had used vitamin/mineral supplements, and 39.5% ( $n = 417$ ) agreed that they were among the high-risk group.

Of the participants, 48.3% ( $n = 511$ ) said they were willing to take the COVID-19 vaccine whether it was free or not, 12.1% ( $n = 128$ ) said they would not take the vaccine in any case, and 36.8% were not decided (Figure 3). Among those who were willing to take the

**Table 1** Socio-demographic and health characteristics and willingness to take the COVID-19 vaccine, Turkiye, 2021

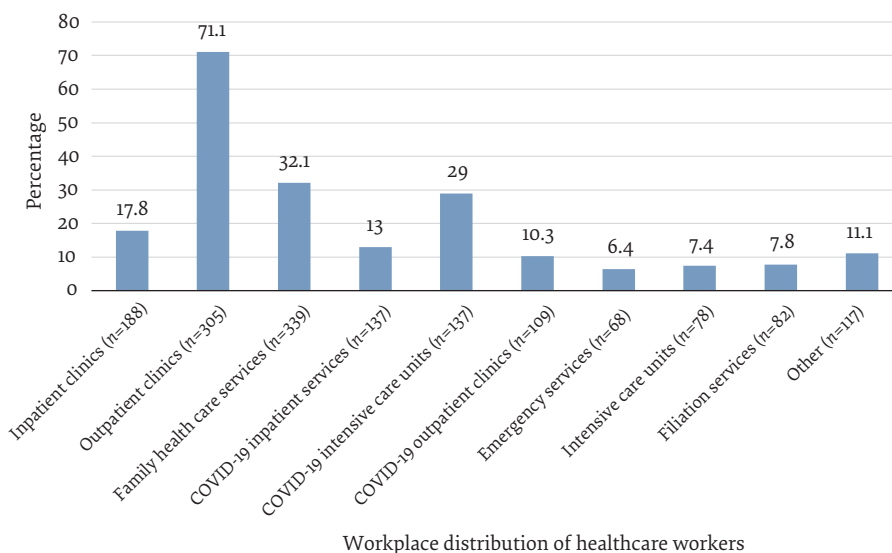
	Decided to vaccinate against COVID-19		Not decide to vaccinate against COVID-19		P
	n	%	n	%	
<b>Gender</b>					
Female	357	47.1	401	52.9	0.197
Male	154	51.5	145	48.5	
<b>Age (years)</b>					
18–29	73	45.9	86	54.1	0.209
30–39	189	45.7	225	54.3	
40–49	166	49.8	167	50.2	
≥50	83	55	68	45	
<b>Occupation</b>					
Physician	363	49.1	376	50.9	0.441
Others	148	46.5	170	53.5	
<b>Marital status</b>					
Married	400	48.9	418	51.1	0.504
Widow/single	111	46.4	128	53.6	
<b>Medical unit</b>					
Internal medicine	382	51.6	358	48.4	0.001
Others	110	40.3	163	59.7	
<b>Chronic disease</b>					
Yes	158	53.4	138	46.6	0.047
No	353	46.6	405	53.4	
<b>Body mass index</b>					
Underweight	182	48.8	191	51.2	0.309
Normal	191	47.6	210	52.4	
Overweight/ obese	115	54.0	98	46.0	
<b>Smoking status</b>					
Never smoked	299	45.8	354	54.2	0.006
Quit smoking	93	60.0	62	40.0	
Current smoker	116	47.9	126	52.1	
<b>Number in household</b>					
≤2	122	45.5	146	54.5	0.285
≥3	389	49.3	400	50.7	
<b>Living with people aged &gt;18 in same household</b>					
Yes	61	52.6	55	47.4	0.337
No	448	47.9	488	52.1	
<b>Living with people aged &gt;65 in same household</b>					
Yes	337	49.3	347	50.7	0.413
No	173	46.6	198	53.4	
<b>Vaccinated against Influenza in last year</b>					
Yes	174	69.3	77	30.7	>0.001
No	511	48.5	543	51.5	
<b>Infected with COVID-19</b>					
Yes	69	37.1	117	62.9	0.001
No	438	50.5	429	49.5	
<b>Close people infected with COVID-19</b>					
Yes	457	49.1	473	50.9	0.109
No	51	41.5	72	58.5	

**Table 1** Socio-demographic and health characteristics and willingness to take the COVID-19 vaccine, Turkiye, 2021 (concluded)

	Decided to vaccinate against COVID-19		Not decide to vaccinate against COVID-19		P
	n	%	n	%	
<b>Had contact with a person infected with COVID-19</b>					
Yes	256	44.2	323	55.8	0.003
No	255	53.5	222	46.5	
<b>Had a history of COVID-19 related quarantine</b>					
Yes	119	43.3	156	56.7	0.050
No	391	50.1	389	49.9	
<b>Vitamin intake during pandemic</b>					
Yes	307	48.0	333	52.0	0.765
No	2020	48.9	211	51.1	
<b>Observed hand hygiene</b>					
Yes	463	49.5	472	50.5	0.107
No	46	41.4	65	58.6	
<b>Observed physical distancing</b>					
Yes	387	53.1	342	46.9	>0.001
No	113	39.2	175	60.8	
<b>Observed mask-wearing</b>					
Yes	481	48.9	503	51.1	0.508
No	29	45.3	35	54.7	

$\chi^2$  test was used for statistical analysis;  $P < 0.05$  was accepted as statistically significant

**Figure 1** Workplace distribution of healthcare workers during the last 3 months before the survey

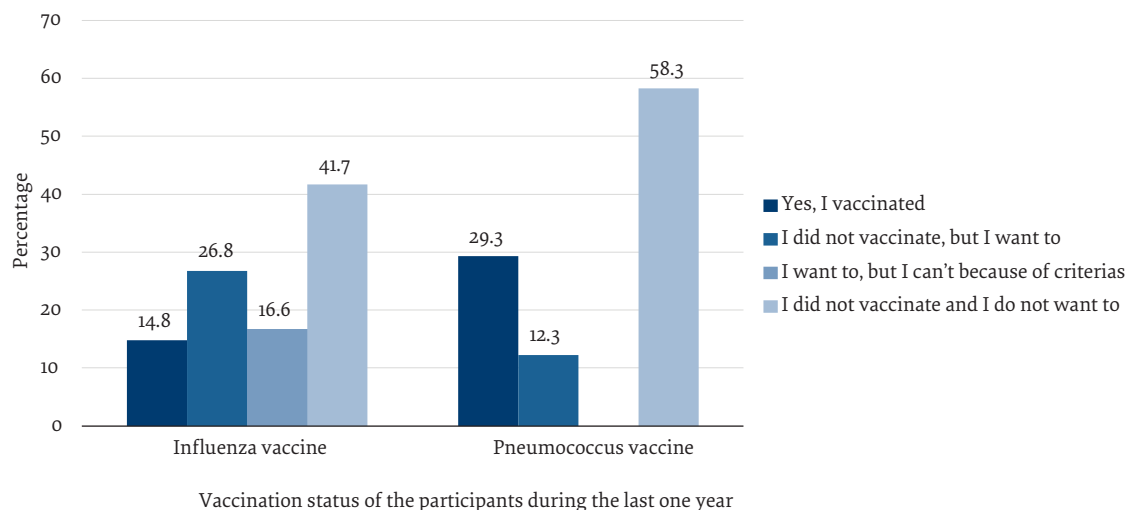


vaccine, the most common reasons for willingness was that the vaccine would end the epidemic (25%,  $n = 264$ ), thinking that vaccination is a good way to prevent COVID-19 (30.1%,  $n = 318$ ), thinking that the vaccine would protect not only themselves but also high-risk individuals from infection (22.2%,  $n = 235$ ), and thinking that the vaccine would reduce the duration and severity of the disease (22.9%,  $n = 242$ ). The fear of vaccine side-effects (26.1%,  $n = 276$ ) and the lack of confidence in the reliability

of a new vaccine (27.2%,  $n = 288$ ) were the most common reasons for not wanting to take the vaccine.

Healthcare professionals who were from internal medicine ( $P = 0.001$ ), who had had chronic disease ( $P = 0.047$ ), who had quit smoking ( $P = 0.006$ ), who were vaccinated against influenza during the last year before the survey ( $P < 0.001$ ), who had not been infected with COVID-19 ( $P = 0.001$ ), who had not had contact with a COVID-19-infected person ( $P = 0.003$ ), and who

**Figure 2 Vaccination status of participants during the last one year before the survey**



had observed physical distancing ( $P < 0.001$ ) were more willing to take the vaccine than others.

### Discussion

Vaccine hesitancy appears to be an increasing problem not only in the community but also among healthcare professionals (13). Healthcare professionals are like role models for the society in behaviour, and they are expected to guide them on health issues. This study aimed to determine the attitude of healthcare professionals to the COVID-19 vaccine; only 48.3% of the participants were willing to be vaccinated. This rate is much lower than findings from most studies (10-20). The internal dynamics of the countries, cultural factors and the period of conducting the studies may have been responsible for the difference in results. The desire to be vaccinated was much lower at the beginning of the pandemic, but as the pandemic progressed and its severity became clearer, willingness to be vaccinated increased.

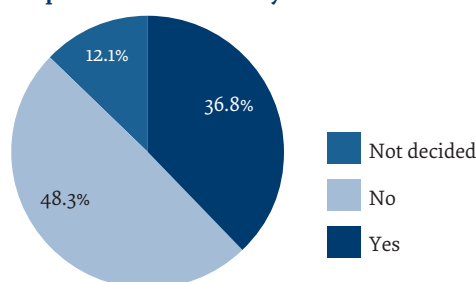
In our study, more men were willing to be vaccinated, but there was no statistically significant difference between men and women. In many other studies (14,15,21-29) more men were willing to be vaccinated. Considering that COVID-19 affected more men and caused more severe disease and mortality among men, this result is not surprising (30).

Participants who had quit smoking were more likely to be willing to be vaccinated than current smokers and non-smokers. Unlike our study, Kaplan et al reported no significant difference between smoking and willingness to be vaccinated (9). This may be because Kaplan et al evaluated smoking as only presence or absence. Chew et al found no relationship between smoking and the willingness to be vaccinated (19). Our results are different from the literature probably because people who quit smoking tend to live a healthier lifestyle after quitting and accept behaviours that may have positive effects on their health, and vaccination is one of such behaviours.

Participants who had taken the influenza vaccine during the last year before the survey were more willing, significantly, to be vaccinated, similar to findings from many studies (9, 16, 17, 20, 23, 28, 31-34). In a study among 2046 healthcare workers in France (27) and a study among 806 nurses in Hong Kong (24), participants who had previously taken the flu vaccine were associated with a higher rate of COVID-19 vaccine acceptance. In a review, Biswas et al reported that compliance with vaccinations, reliance on vaccination, or a history of influenza vaccination were indicators of COVID-19 vaccine acceptance in over half of study participants (14). This may be because, as in the study by Kaplan et al, healthcare workers who had taken the regular adult vaccines believed in the efficacy and protection offered by vaccines and perceived that the COVID-19 vaccine was an effective solution (11).

Healthcare workers who had not been infected with COVID-19 were significantly more likely to be willing to be vaccinated. Yurttas et al reported that participants who had been infected with COVID-19 had less desire to be vaccinated, probably because they believed that the disease had given them immunity against a repeat infection (10). Eguia et al reported that healthcare workers who had not been infected with COVID-19 had a higher desire to be vaccinated (35).

**Figure 3 Willingness to take the COVID-19 vaccine among healthcare professionals in Türkiye**



A regression analysis by Kaplan et al found that not being infected with COVID-19 affected vaccine acceptance (10), and the review by Biswas et al showed that not being infected with COVID-19 was associated with higher COVID-19 vaccination acceptance (13). Chew et al reported that 96.2% of those who had not been infected with COVID-19 and 97.2% of those who had been infected were willing to be vaccinated; there was no significant difference (19). Although there are different opinions in literature on this issue, it can be said that those who have not been infected with COVID-19 have a more positive attitude towards the vaccine.

Individuals who had had no contact with a COVID-19 patient were more willing to be vaccinated because participants thought that being in contact with the disease could trigger immunity can't because of this vaccination was not required.

Individuals who observed physical distancing had a stronger desire to be vaccinated, and this is supported by the Taiwan study (21). Kukreti et al reported a relationship between COVID-19 preventive behaviours and a high desire for vaccination (21). Jaspal et al reported that preventive behaviours had a positive relationship with vaccination willingness (36). Mask-wearing, physical distancing and hand hygiene have been suggested as the most effective measures for preventing the transmission of COVID-19 (37). However, as the pandemic progressed, it was understood that these were not the only preventive measures, and, therefore, a more effective solution was needed, which is vaccination (37). It is expected that individuals who observed COVID-19 preventive behaviours such as mask-wearing, physical distancing and hand hygiene would have a positive attitude to the vaccine, which is supposed to be more effective than the preventive measures.

The 4 important factors that affected the willingness of healthcare professionals to take the COVID-19 vaccine were the believe that vaccination was a good way to prevent COVID-19 infection, that COVID-19 vaccine would end the epidemic, that COVID-19 vaccine would reduce the duration and severity of the disease, and that it would protect them and the high-risk individuals in the society. Chew et al reported the seriousness of the COVID-19 pandemic and effects on daily life, the belief that vaccines are safe and effective, and the belief that vaccines would help return to normal life without physical distancing and mask-wearing (19). Half of the healthcare workers in the study by Yurttaş et al believed that the vaccine was protective (10). An article that compiled 35 studies from many countries associated the belief that vaccines could protect friends, families and community members with higher COVID-19 vaccination acceptance (11).

Among the reasons for not wanting to take the COVID-19 vaccine were doubts about its safety (27.2%)

because it's new, fear of side-effects (26.1%), and not having enough information about the vaccines (11.4%). Yurttaş et al reported fear of side-effects (33.8%), not knowing the scientific results (31.9%), and not trusting the vaccine (10.3%) as the most common reasons for not willing to be vaccinated (10). Grech et al reported fear of long-term side-effects, insufficient knowledge, worries about the effectiveness of the vaccine, fear of short-term side-effects, and general hesitancy against vaccines (12). In a study among 806 nurses, Wang et al gave the first 3 reasons as doubts about the efficacy and safety of the vaccine, not believing the necessity of the vaccine, and not finding time to go and take the vaccine (19). Chew et al reported concerns about physical harm caused by the COVID-19 vaccine, and possible side-effects of the vaccine such as death or permanent disability, illness if vaccinated, and acquiring COVID-19 from the vaccine (19). Other reasons by Chew et al were inadequate information about the vaccines, belief that COVID-19 does not exist or is not a serious disease, rapid development of the vaccines, policies surrounding the vaccine development process, misinformation from social media, previous COVID-19 infection or health, and distrust in the authorities including healthcare professionals and pharmaceutical companies (19). Our results align with the literature.

This study had some limitations. As a cross-sectional study, the results cannot be generalized. The questionnaire was sent over the internet, therefore participant characteristics may not be representative of the whole healthcare workforce in the country, and there are potential biases, such as self-selection bias. The results may not be representative of the whole society because relatively more educated participants were included in the quantitative data and they are more likely to use the internet and electronic devices that were used for the study.

## Conclusion

Almost half of the healthcare workers in this study were not decided to take the COVID-19 vaccine. There were reservations among healthcare professionals about the vaccination as observed among the general population, and this can affect their disposition towards vaccination recommendations. To increase COVID-19 acceptance in Türkiye, it is essential to conduct COVID-19 vaccine awareness and education among healthcare professionals because they are perceived as role models in the society, particularly in the health sector. Securing the trust of healthcare professionals is the first and most crucial step towards increasing vaccination rates and reaching herd immunity against COVID-19.

**Funding:** None.

**Competing interests:** None declared.

## Attitude des professionnels de la santé en Türkiye à l'égard du vaccin contre la COVID-19

### Résumé

**Contexte :** Le vaccin contre la COVID-19 a permis de réduire efficacement les taux d'infection et la gravité de la maladie. Cependant, la couverture vaccinale a été inférieure aux attentes en raison de la réticence face à la vaccination, y compris parmi les professionnels de santé.

**Objectif :** Examiner l'attitude des professionnels de santé en Türkiye à l'égard du vaccin contre la COVID-19.

**Méthodes :** La présente étude transversale a été réalisée auprès de médecins, d'infirmiers, de sage-femmes, de techniciens d'urgence médicale, de diététiciens et de physiothérapeutes en Türkiye entre décembre 2020 et février 2021, utilisant la méthode de l'échantillonnage en boule de neige pour la collecte de données. Celles-ci ont été analysées à l'aide du logiciel SPSS version 23. Une analyse de corrélation a été effectuée pour évaluer la relation linéaire et une analyse multivariée a été menée pour examiner les relations de causalité entre les variables ( $\alpha = 0,05$ ).

**Résultats :** Au total, 1057 professionnels de santé ont participé ; âge moyen de 38,98 ans  $\pm$  9,044 (19-71 ans), 71,7 % ( $n = 758$ ) de femmes et 69,9 % ( $n = 739$ ) de médecins. Parmi les personnes interrogées, 48,3 % souhaitaient être vaccinées, que le vaccin soit gratuit ou non, 12,1 % ( $n = 128$ ) refusaient la vaccination et 36,8 % étaient indécises. Les raisons les plus fréquentes de vouloir se faire vacciner étaient de mettre fin à la pandémie (25 %,  $n = 264$ ), de considérer la vaccination comme un bon moyen de prévenir la COVID-19 (30,1 %,  $n = 318$ ), de se protéger et de protéger les personnes à haut risque contre l'infection (22,2 %,  $n = 235$ ) et d'espérer que le vaccin réduise la durée et la gravité de la maladie (22,9 %,  $n = 242$ ). Par ailleurs, les raisons les plus fréquentes de ne pas vouloir se faire vacciner étaient la crainte des effets secondaires (26,1 %,  $n = 276$ ) et le manque de confiance dans la fiabilité d'un nouveau vaccin (27,2 %,  $n = 288$ ). Le désir de se faire vacciner avait un lien avec la vaccination contre la grippe, la vaccination contre le pneumocoque, les antécédents d'infection COVID-19 ou les contacts avec un patient atteint par cette maladie ; il était également associé au respect des mesures de prévention des infections ( $p < 0,05$ ).

**Conclusion :** Près de la moitié des agents de santé interrogés dans le cadre de cette étude étaient indécis quant au fait de se faire vacciner. Pour augmenter l'acceptation du vaccin en Türkiye, des programmes de sensibilisation et d'éducation à la vaccination contre la COVID-19 sont essentiels pour les professionnels de santé, qui sont considérés comme des modèles dans la société, en particulier dans le secteur de la santé.

### موقف مهنيي الرعاية الصحية من لقاح كوفيد-19 في تركيا

راضية شوله جوموشتاكيم، دويو آيهان باشر، مراد جوك، بينار دونر جونر

### الخلاصة

الخلفية: اتسم لقاح كوفيد-19 بفعالته في الحدّ من معدلات العدوى ووخامة المرض، غير أنّ التغطية بالتطعيم كانت أقل من المتوقع بسبب التردد في أخذ اللقاحات، حتى بين العاملين في الرعاية الصحية.

الأهداف: هدفت هذه الدراسة الى استقصاء موقف مهنيي الرعاية الصحية من لقاح كوفيد-19 في تركيا.

طرق البحث: أُجريت هذه الدراسة المقطعية على الأطباء وطواقم التمريض والقابلات وتقنيي طب الطوارئ وأخصائيي التغذية وأخصائيي العلاج الطبيعي في تركيا في الفترة بين ديسمبر/ كانون الأول 2020 وفبراير/ شباط 2021، باستخدام أخذ العينات بطريقة كرة الثلج (عينة الإحالة المتسلسلة) لجمع البيانات. وخضعت البيانات للتحليل بالإصدار 23 من برنامج SPSS، في حين أُجري تحليل الارتباط لتقييم العلاقة الخطية، وأجري التحليل المتعدد المتغيرات لدراسة علاقة السبب والنتيجة بين المتغيرات ( $? = 0.05$ ).

النتائج: شارك في الدراسة 1057 مهنيًا في مجال الرعاية الصحية إجمالاً؛ وبلغ متوسط أعمارهم  $38.98 \pm 9.044$  (يحد أدنى = 19؛ يحد أقصى = 71)، منهم 71.7% (العدد = 758) من النساء، و 69.9% (العدد = 739) من الأطباء. وأبدى 48.3% من المشاركين رغبتهم في الحصول على التطعيم، سواء كان اللقاح مجانيًا أم لا، بينما لم يرغب 12.1% (العدد = 128) في الحصول على التطعيم، ولم يتخذ 36.8% منهم قرارًا بالحصول على التطعيم أو عدمه. وكانت أكثر الأسباب شيوعًا للرغبة في الحصول على التطعيم هي إنهاء الجائحة (25%، العدد = 264)، واعتبار التطعيم وسيلة جيدة للوقاية من مرض كوفيد-19 (30.1%، العدد = 318)، وحماية النفس والأفراد المعرضين لمخاطر مرتفعة للإصابة بالعدوى (22.2%، العدد = 235)، والأمل في أن يقلل اللقاح من مدة المرض ووخامته (22.9%، العدد = 242). وكانت الأسباب الأكثر شيوعًا لعدم الرغبة في الحصول على التطعيم هي الخوف من الآثار الجانبية (26.1%، العدد = 276) وعدم الثقة في موثوقية اللقاحات الجديدة (27.2%، العدد = 288). وكانت هناك علاقة بين الرغبة في التطعيم والتطعيم ضد الإنفلونزا، والتطعيم ضد المكورات الرئوية، وتاريخ الإصابة بعدوى كوفيد-19 أو مخالطة مريض مصاب بكوفيد-19، والالتزام بتدابير الوقاية من العدوى (القيمة الاحتمالية  $> 0.05$ ).

الاستنتاجات: لم يتخذ ما يقرب من نصف العاملين في مجال الرعاية الصحية المشمولين بهذه الدراسة قرارًا بشأن الحصول على التطعيم. ولزيادة نسبة الإقبال على التطعيم في تركيا، من الضروري توعية المهنيين في مجال الرعاية الصحية وتنقيتهم بشأن لقاحات كوفيد-19، إذ يُنظر إليهم على أنهم قدوة يُتخذى بها في المجتمع، لا سيّما في القطاع الصحي.

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