



Vaccine Opposal in People Over 60 Years of Age in Mardin/ Turkey-A Territory with Low Rate of Vaccination

COVID-19'a Karşı Aşılamanın Düşük Olduğu Mardin/Türkiye İlinde 60 Yaş Üzeri Kişilerde Aşı Tutumu

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Abstract

Objective: One of the most important public health practices in the prevention of communicable diseases is vaccination. In this study, it was desired to evaluate the vaccination attitude of individuals over the age of 60 years in cities where the rate of vaccination against COVID-19 was low rate.

Material and Method: Our research was carried out by reaching 396 people over the age of 60 in Mardin/Turkey. A questionnaire including the positive and negative attitudes of the participants towards the vaccine was filled in by face to face interviews.

Results: We found that 110 (45.8%) of the participants who have not been inoculated in the provinces where the study was conducted did not trust the vaccine. Again, it was seen that 128 (53.3%) of those who did not get inoculated were illiterate and 68 (28.3%) were primary school graduates. There were no university graduates in the group that did not receive the vaccine. When positive and negative attitudes were evaluated, it was seen that 64 (16.2%) people strongly disagree with the positive attitude, I would like to be vaccinated at the first opportunity, and 48 (12.1%) strongly disagree with the positive attitude, I think everyone should be vaccinated. When the positive attitude of I trust the studies about the vaccine was examined, it was seen that 108 (27.3%) people gave the answer of strongly disagree. Again, it was seen that 53.3% of the participants who did not get vaccinated were illiterate and 28.3% were primary school graduates.

Conclusion: The high level of concern about vaccine safety needs to be addressed. Future introduction of the vaccine should address these concerns, and a properly and thoroughly tested vaccine will help win the public's trust. In addition, campaigns should be organized to target low-educational groups, and they should be informed, due to the increase in the fear of vaccination as the level of education decreases.

Keywords: COVID-19 vaccine, low vaccination, vaccine hesitancy

Öz

Amaç: Bulaşıcı hastalıkların önlenmesinde en önemli halk sağlığı uygulamalarından biri aşılamadır. Bu çalışmada COVID-19'a karşı aşılanmanın düşük olduğu şehirlerde 60 yaş üstü bireylerde aşı tutumu değerlendirilmek istendi.

Gereç ve Yöntem: Araştırmamız Mardin/Türkiye ilinde 60 yaş üstü 396 kişiye ulaşılarak yapıldı. Katılımcılara aşıya karşı olumlu ve olumsuz tutumlarını içeren bir anket yüzyüze sorularak dolduruldu.

Bulgular: Çalışmanın yapıldığı ilde aşı yaptırmayan katılımcıların 110 (%45,8)'unun aşıya güvenmediğini gördük. Yine aşı yaptırmayanların 128 (%53,3)'inin okur yazar olmadığını, 68 (%28,3)'ininse ilköğretim mezunu olduğunu gördük. Aşı yaptırmayan grupta üniversite mezunu yoktu. Olumlu ve olumsuz tutumlar değerlendirildiğinde ilk fırsatta aşı olmak isterim olumlu tutumuna 64 (%16,2) kişinin kesinlikle katılmıyorum, bence herkes aşı olmalı olumlu tutumuna 48 (%12,1) kişinin kesinlikle katılmıyorum cevabını verdiği görüldü. Aşı hakkında yapılan çalışmalara güveniyorum olumlu tutumu incelendiğinde 108 (%27,3) kişinin kesinlikle katılmıyorum cevabını verdiği görüldü.

Sonuç: Aşı güvenliği konusundaki yüksek düzeyde endişenin giderilmesi gerekmektedir. Aşının gelecekteki tanıtımı bu endişeleri gidermeli ve düzgün ve kapsamlı bir şekilde test edilmiş bir aşı, halkın güvenini kazanmaya yardımcı olacaktır. Ek olarak eğitim seviyesi düşüklüğe aşı tereddütünün artması nedeniyle düşük eğitim seviyeli kitleleri hedef alacak kampanyalar düzenlenmeli, bilgilendirilmeleri sağlanmalıdır.

Anahtar Kelimeler: COVID-19 aşısı, aşılanma düşüklüğü, aşı tereddütü



INTRODUCTION

Coronavirus-19 (COVID-19) first appeared in Wuhan, China.^[1] The clinical features of the disease range from simple flu-like symptoms to severe acute respiratory syndrome. It has been reported that mild symptoms in 81% of patients due to COVID-19 infection, severe respiratory failure symptoms in 14%, and septic shock and multi-organ dysfunction in addition to respiratory failure in 5% has been observed.^[2]

Therefore, the development and administration of COVID-19 vaccines becomes crucial for the prevention and eradication of the disease.^[3] Vaccines are one of the most effective methods used in the prevention of infectious diseases from past to present. Since the use of vaccines, there have been anti-vaccine activism events. The reasons for this have been shown to be religious perspectives, differences in political views, and insufficient information about the safety of the vaccine.^[4] Despite the great advances in vaccination in the past century, the re-emergence of vaccine-preventable diseases has also created distrust in the society against newly discovered vaccines.^[5]

In this study, it was aimed to evaluate positive and negative attitudes towards vaccination in a province with a low vaccination rate.

MATERIALS AND METHOD

This study was conducted in 01.06.2021- 30.06.2021 June 2021 by contacting 396 patients over 60 years of age in a face to face interview. The study questionnaire was administered face-to-face with patients by a nurse in a family practice. Signed informed consent forms were obtained from all participants, and our study, which complies with the Principles of the Declaration of Helsinki, was approved by the ethics committee. (Dicle University Ethics committee Number: 309)

An internationally validated questionnaire was used in the study to assess participants' attitudes towards the COVID-19 vaccine.^[6] The volunteers included in the face-to-face survey study were first asked their demographic information; age, gender, educational background, occupation and COVID-19 experience; whether they had COVID-19 infection, whether they believed in the protection of the CoronaVac vaccine, or have been inoculated with the I. and II. dose of CoronaVac vaccine. If their answer was no, then they were asked about the reason. In addition, the Attitudes Towards COVID-19 Vaccine Scale was applied. The Attitudes Towards COVID-19 Vaccine Scale has 9 items and has two sub-dimensions (positive and negative attitudes). This scale consists of 9 items in total, including 4 items for positive attitudes and 5 items for negative attitudes, and its validity and reliability have been established.^[6]

As a positive attitude, the participants were presented with options such as 'I would like my family to have the vaccine to be developed/developed for this disease', 'I would like to have the vaccine to be developed/developed for this disease

at the first opportunity', 'I think everyone should have the vaccine to be developed/developed for this disease', 'I trust the explanations made about the vaccine to be developed/developed'.

As a negative attitude; 'the vaccine to be developed/developed may cause transmission of the disease'. (I), 'I think that the vaccine to be developed/developed will/will not have a protective effect'. (I), 'The vaccine to be developed/developed is dangerous'.(I), 'I think the efficacy of the vaccine to be developed/developed will not/have not been adequately tested'.(I)'I think I can survive the epidemic without a vaccine'.(I) options were presentation. I= Inverse substances.

The statements in the scale were evaluated as "Strongly disagree (1)", "Disagree (2)", "Undecided (3)", "Agree (4)", "Strongly agree (5)". Items in the negative attitude sub-dimensions were scored inversely. A value between 1-5 was obtained by dividing the total score obtained by summing the item scores in the scale sub-dimension by the number of items in that sub-dimension.

High scores obtained from the positive attitude sub-dimension indicate that the attitude towards the vaccine was positive. It was calculated after the items in the negative attitude sub-dimension have been reversed, and the high scores in this sub-dimension indicated that the negative attitude towards the vaccine was less.

Inverse items 1→5; 2→4; 3→3; 4→2; It was encoded as 5→1.

In order to increase the reliability of this study, the survey was conducted in areas of different socioeconomic levels.

Inclusion criteria: Individuals over 60 years old, who did not have mental health, auditory or speech problems, and who voluntarily accepted to participate in the study.

Exclusion criteria: Being too old to answer the questions, having mental disorder, speech or hearing impairment, and refusing to participate in the study.

Statistical Analysis

Statistical Package for the Social Sciences (SPSS) program was utilized for data evaluation and statistical analysis. Chi-square test was used when comparing percentage data in descriptive statistics, data expressed as mean, standard deviation and count. In comparisons, values with $p < 0.05$ were considered statistically significant.

RESULTS

A total of 396 volunteers were enrolled in this research. Of the people who agreed to participate in the study, 44.4% (n=176) were female and 55.6% (n=220) were male. As of the date of the survey, 60.6% (n=240) of the participants have not been vaccinated against COVID-19, and 39.4% (n=156) have been vaccinated. As of the date of the survey, 74.7% (n=296) of the people who participated in our research did not have COVID-19 infection, while 25.3% (n=100) had

COVID-19 infection. Of the participants, 44.4% (n=176) were illiterate, 34.3% (n=136) were primary school graduates, 7.1%(n=28)were secondary school graduates, 12.1%(n=48) were high school graduates, and 2% (n=8) of them were university graduates (**Table 1**).

Table 1. Descriptive demographic characteristics of the study population

	N	%
Gender		
Female	176	44.4%
Male	220	55.6%
Age (years)		
60-64	212	53.5%
65-69	140	35.4%
70-75	32	8%
75<	12	3%
Educational Status		
Illiterate	176	44.4%
Primary School	136	34.3%
Secondary School	28	7.1%
High School	48	12.1%
University Graduates	8	2%
Had COVID-19 Infection		
Yes	100	25.3%
No	296	74.7%
Inoculated with COVID-19 vaccine		
Not inoculated	240	60.6%
Inoculated	156	39.4%
Total	396	100%

When we tried to analyze the reasons for not getting vaccinated, 75% (n=180) of the participants did not trust the vaccine, 2% (n=5)of the participants stated that they had relatives who had COVID-19 after vaccination (**Table 2**).

Table 2. Reasons for not being inoculated

	N	%
Reasons for not being inoculated		
Does not trust vaccine	180	75 %
Presence of relatives who had COVID-19 after inoculation	5	2%
Has been infected with COVID-19 previously	11	4.5%
Believing that vaccine could cause other diseases	11	4.5%
Other	33	13.7%
Toplam	240	100%

It was shown that 53.3% of the participants who did not get vaccinated were illiterate, 28.3% were primary school graduates, 5% were secondary school graduates, and 13.3% were high school graduates. On the other hand 5.1% of the participants who had the vaccine were university graduates and 30.8% were illiterate. There was no university graduate who has not been vaccinated (**Table 3**).

Table 3. The educational status of the participants who refused to get vaccinated

Educational Status	Vaccination Status		Total
	Not vaccinated N(%)	Vaccinated N(%)	
Illiterate	128 (53.3%)	48(30.8%)	176
Primary School	68(28.3%)	68(43.6%)	136
Secondary School	12(5.0%)	16(10.3%)	28
High School	32(13.3%)	16(10.3%)	48
University	0(0%)	8(5.1%)	8
Total	240	156	396

When the responses of the participants to the positive attitudes were examined; it was seen that 64 (16.2%) people strongly disagree, 40 (10.1%) disagree, and 44 (11.1%) undecided. The phrase: 'I think everyone should be vaccinated', 48 (12.1%) people strongly disagree, 44 (11.1%) disagree, 68 (17.2%) people were undecided. When the positive attitude of 'I trust the studies about the vaccine' was examined, it was seen that 108 (27.3%) people strongly disagree, 68 (17.2%) disagree, 68 (17.2%) people were undecided.

When the responses of the participants to the negative attitudes were examined; 'I do not believe that the vaccine is protective', 148 (37.7%) 'people strongly agree', 64 (16.16%) 'agree', 104 (26.26%) people answered 'undecided'. I strongly agree, 64 (16.16%) people agree, 100 (25.25%) said 'I am undecided', 'I think I overcome the disease without vaccination', 64 (16.16%) strongly agree, 20 (5.05%) and it was observed that 136 (34.34%) respondents gave the answer "I agree" and "I am undecided" (**Table 4**).

DISCUSSION

The current study has important implications. We found that 110 (45.8%) of the participants who were not inoculated did not trust the vaccine. It was also determined that 128 (53.3%) of those who did not get vaccinated were illiterate and 68 (28.3%) were primary school graduates. There were no university graduates in the group that did not receive the vaccine.

When positive and negative attitudes were evaluated, 'I would like to be inoculated in the first possible opportunity' phrase has been interpreted as: 64 (16.2%) people strongly disagree, 40 (10.1%) disagree, and 44 (11.1%) undecided. 'I think everyone should be vaccinated', 48 (12.1%) people strongly disagree, 44 (11.1%) disagree, 68 (17.2%) people are undecided. When the positive attitude of 'I trust the studies about the vaccine' was examined, it was seen that 108 (27.3%) people strongly disagree, 68 (17.2%) disagree, 68 (17.2%) were undecided.

When the responses of the participants to the negative attitudes were examined; It was seen that 'I do not believe in the protective effects of vaccine' 148 (37.7%) people strongly agree, 64 (16.16) agree, and 104 (26.26%) undecided. It was observed that 172 (43.43%) people strongly agree, 64 (16.16%) agree, and 100 (25.25%) were undecided about the

Table 4. The opinions and attributes of participants on COVID-19 vaccine

POSITIVE ATTRIBUTE	Gender		Total	INVERSE ATTRIBUTE	Gender		Total			
	Female	Male			Female	Male				
I want my family members to be inoculated.				I do not believe in the protective effects of vaccine						
Strongly disagree	16 (9.1%)	32 (14.5%)	48 (12.1%)	Strongly Agree	80 (20.2%)	68(17.17%)	148 (37.37%)			
Disagree	28 (15.9%)	12 (5.5%)	40 (10.1%)	Agree	32 (8.08%)	32 (8.08%)	64(16.16%)			
Undecided	28 (15.9%)	32 (14.5%)	60 (15.2%)	Undecided	32 (8.08%)	72 (18.18%)	104 (26.26%)			
Agree	32 (18.2%)	44 (20.0%)	76 (19.2%)	Disagree	8 (2.02%)	24 (6.06%)	32 (8.08%)			
Strongly Agree	72 (40.9%)	100 (45.5%)	172 (43.4%)	Strongly Disagree	24 (6.06%)	24 (6.06%)	48 (12.12%)			
I would like to be inoculated in the first possible opportunity.				Vaccination may cause the spreading of the virus						
Strongly disagree	24 (13.6%)	40 (18.2%)	64 (16.2%)	Strongly Agree	84 (21.21%)	72 (18.18%)	156 (39.39%)			
Disagree	24 (13.6%)	16 (7.3%)	40 (10.1%)	Agree	20 (5.05%)	32 (8.08%)	52 (13.13%)			
Undecided	24 (13.6%)	20 (9.1%)	44 (11.1%)	Undecided	52 (13.13%)	80 (20.20%)	132 (33.33%)			
Agree	20 (11.4%)	44 (20.0%)	64 (16.2%)	Disagree	12 (3.03%)	16 (4.04%)	28 (7.07%)			
Strongly Agree	84 (47.7%)	100 (45.5%)	184 (46.5%)	Strongly Disagree	8 (2.02%)	20 (5.05%)	28 (7.07%)			
Everyone should be inoculated				Strongly Agree				72 (18.18%)	100 (25.25%)	172 (43.43%)
Strongly disagree	16 (9.1%)	32 (14.5%)	48 (12.1%)	Agree	28 (7.07%)	36 (9.09%)	64 (16.16%)			
Disagree	24 (13.6%)	20 (9.1%)	44 (11.1%)	Undecided	48(12.12%)	52 (13.13%)	100 (25.25%)			
Undecided	36(20.5%)	32 (14.5%)	68 (17.2%)	Disagree	8 (2.02%)	12 (3.03%)	20 (5.05%)			
Agree	16 (9.1%)	32 (14.5%)	48 (12.1%)	Strongly Disagree	20 (5.05%)	20 (5.05%)	40 (10.10%)			
Strongly Agree	84 (47.7%)	104 (47.3%)	188 (47.5%)	Thinks that the vaccine has not been tested sufficiently						
I trust the explanations & briefings on vaccination				Strongly Agree				32 (8.08%)	36 (9.09%)	68 (17.17%)
Strongly disagree	48 (27.3%)	60 (27.3%)	108 (27.3%)	Agree	32 (8.08%)	28 (7.07%)	60 (15.15%)			
Disagree	40 (22.7%)	28 (12.7%)	68 (17.2%)	Undecided	64 (16.16%)	96 (24.24%)	160 (40.40%)			
Undecided	24(13.6%)	44 (20.0%)	68 (17.2%)	Disagree	28 (7.07%)	28 (7.07%)	56 (14.14%)			
Agree	4 (2.3%)	24 (10.9%)	28 (7.1%)	Strongly Disagree	20(5.05%)	32 (8.08%)	52 (13.13%)			
Strongly Agree	60(34.1%)	64 (29.1%)	124 (31.3%)	I can overcome COVID-19 disease without getting vaccinated						
				Strongly Agree				44 (11.11%)	20 (5.05%)	64 (16.16%)
				Agree				4 (1.01%)	16 (4.04%)	20 (5.05%)
				Undecided				56 (14.14%)	80 (20.20%)	136 (34.34%)
				Disagree				28 (7.07%)	68 (17.17%)	96 (24.24%)
				Strongly Disagree				44 (11.11%)	36 (9.09%)	80 (20.20%)

negative attitude that 'the vaccine is dangerous'. It was seen that 64 (16.16%) people strongly agree, 20 (5.05%) agree, and 136 (34.34%) were undecided with the negative attitude of "I think I can overcome the disease without vaccination."

It has been reported that vaccine rejection and hesitations have increased in recent years.^[7] This increased vaccine rejection and hesitation can eventually lead to a reduction in vaccine coverage and affect its efficacy.^[8-10] Vaccine hesitancy is also listed among the top ten global health threats by the World Health Organization (WHO).^[7] Therefore, there is a need to determine the willingness of communities to accept the COVID-19 vaccine.

As technology develops, misinformation through the internet and media has led to an increase in anti-vaccine opinions. Clear and concise evidence-based communication to a broad audience will be crucial in the fight against anti-vaccination opposals.^[4] In the light of the COVID-19 outbreak, anti-vaccine sentiments are rising and anti-vaccine activists are increasing on social media.^[5]

Research in China found that although more than 90% of respondents indicated they would accept the COVID-19 vaccine when available, almost 50% of these people would

like to delay vaccination until the vaccine is confirmed to be safe.^[11] In a study conducted in Canada, the acceptance rate of the COVID-19 vaccine was found to be low. In this study, as the main factors in not accepting the vaccine has been stated that vaccination has risks, safety and side effect concerns.^[12] Most of the survey studies among the general population classified by country showed a level of $\geq 70\%$ acceptance about the COVID-19 vaccine. Low COVID-19 vaccine acceptance rates have been reported in the Middle East, Russia, Africa and several European countries.^[13]

In an Italian study, uncertainty about the rapid development of COVID-19 vaccines was found to be the second most common reason for "No" or "Not sure" responses to vaccine intent, given the high rate of hesitation attributed to low trust in pharmaceutical companies. These concerns appear to be specific to new COVID-19 vaccines, and lower levels of anti-influenza vaccine opposition have been reported for 2020-2021.^[14] In our study, the rate of women who strongly agree with the item "I absolutely do not believe in the protection of the vaccine" was 13.6%, while the rate of men was found to be 10.9% less. In our study, the rate of absolutely not believing in the protection of the vaccine was much higher (37.7%).

In a study conducted within the scope of Istanbul Medeniyet University Social Structure Research Program (TYAP) in Turkey, information was obtained about the society's approaches to vaccines. According to this study, the rate of those who want to be vaccinated immediately was 16.5%, the rate of those who want to be vaccinated after the effectiveness of the vaccine has been proven, 26%, the rate of those who will make their decision according to the type of vaccine to be made, 8.4%, the rate of those who have never thought of being vaccinated was 24.6% and they are undecided about getting vaccinated. The rate of those who did was determined as 24.6%.^[15] In our study, the rate of those who answered "I strongly disagree" with the item "I want to be vaccinated at the first opportunity" was 16.2%, while the rate of those who answered "I strongly agree" with this item was found to be 46.5%.

According to results from surveys of COVID-19 vaccine acceptance rates from 33 different countries, the highest COVID-19 vaccine acceptance rates among adults were Ecuador (97.0%), Malaysia (94.3%), Indonesia (93.3%) and China (91.3%). However, the lowest COVID-19 vaccine acceptance rates were Kuwait (23.6%), Jordan (28.4%), Italy (53.7%), Russia (54.9%), Poland (56.3%), USA (56.9%) and France (58.9%) (14). In our study, the rate of being vaccinated was 39.4%. The data we have obtained lags behind most countries in the world.

As there are studies indicating that the level of education increases, the anti-vaccination increases.^[16] There are also studies stating that the level of anti-vaccination increases as the level of education decreases.^[17] In our study, it was seen that 128 (53.3%) of those who did not get vaccinated were illiterate and 68 (28.3%) were primary school graduates. There were no university graduates in the group that did not receive the vaccine.

Although the sample was selected in accordance with the exclusion criteria, some difficulties in communication can be counted among the limitations of the study due to the fact that the participating individuals were over the age of 60 years.

The high level of concern about vaccine safety needs to be addressed. Future introduction of the vaccine should address these concerns, and a properly and thoroughly tested vaccine will help to win the public's trust. In addition, campaigns should be organized to target low-educational groups, and they should be informed, due to the increase in the fear of vaccination as the level of education decreases. We believe it is important and more effective to begin promotion, begin policy making, and establish priority guidelines for vaccination before vaccines are approved. More quantitative and qualitative studies can be conducted to track individuals' vaccination acceptance and reasons at different time points.

Healthcare professionals will always play an important role in this struggle, as they will continue to be both a high-risk population and the first resource for patients. We hope our data can help governments, public health professionals and legislators achieve their goals in the COVID-19 vaccine campaign.

ETHICAL DECLARATIONS

Ethics Committee Approval: This study was approved by the ethics committee. (Dicle Universitii Ethics committee Number: 309)

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

Referee Evaluation Process: Externally peer-reviewed.

Conflict of Interest Statement: The authors have no conflicts of interest to declare.

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

Author Contributions: All of the authors declare that they have all participated in the design, execution, and analysis of the paper, and that they have approved the final version.

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