

Knowledge Attitudes and Practices of Pregnants about the Influenza Vaccine

Hamile Kadınların Grip Aşısı Hakkında Bilgi, Tutum ve Davranışları

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ABSTRACT

Introduction: The aim of this study was to determine the extent of influenza vaccination coverage among pregnant during the 2019-2020 season, as well as their knowledge, attitudes and behaviors towards vaccination.

Methods: Pregnant patients who applied to an obstetrics outpatient clinic between June and July 2020 were included in the report. The convenience sampling method was used for sample selection in the study. Descriptive and categorical statistics were used for the study. Nominal data are given as numbers and percentages. Categorical variables were compared using the Chi-square test. Results were considered statistically significant when $p < 0.05$.

Results: A total of 402 patients accepted participation in the study. The rate of participation in the study was 80.4%. Of the participants, 56 (13.9%) were vaccinated before pregnancy and 346 (86%) were never vaccinated. Only five cases (1.2%) were vaccinated during pregnancy. A statistical comparison was made between the pregnant groups that had received at least one influenza vaccine and the group that never received one. There was a significant difference between the two groups in terms of sources of information. The reason for rejection of vaccine in both groups was safety concerns.

Discussion and Conclusion: In this study, 13.9% of patient had a previous history of vaccinations against influenza but only 1.2% were vaccinated during pregnancy. The reason for this low rate might be that the vaccine is not routinely recommended by the obstetrician or family physician. It is necessary to develop primary health care services for vaccines in our country.

Keywords: influenza vaccine, pregnancy, attitude, behaviors

ÖZ

Giriş ve Amaç: Bu çalışmanın amacı 2019-2020 sezonunda hamile kadınlardaki grip aşılama oranlarının belirlenmesi ve aşı hakkındaki bilgi, tutum ve davranışlarının araştırılmasıdır.

Yöntem ve Gereçler: Çalışma Haziran 2020-Temmuz 2020 tarihleri arasında Kadın-Doğum polikliniğine başvuran hastalarda yapıldı. Araştırmanın örnekleme seçiminde kolaylıkla bulunan örnekleme yöntemi kullanıldı. Tanımlayıcı ve kategorik değişkenler kullanıldı. Nominal veriler sayı ve yüzde olarak belirtildi. Kategorik değişkenlerin karşılaştırılmasında ki-kare testi kullanıldı. Pdeğeri 0.05'in altında olan sonuçlar anlamlı kabul edildi.

Bulgular: Planlanan süre içinde 402 kişi çalışmaya katılmayı kabul etti. Çalışmaya katılma oranı %80,4 idi. 402 hastanın 56 (%13,9) sı gebelik öncesi daha önceki grip sezonunda aşı yaptırmıştı. 346 (%86) hasta daha önce hiç aşı yaptırmamıştı. Beş (%1,2) hasta gebelikte aşı yaptırmıştı. Daha önce en az bir kez aşı yaptıran grup ile daha önce hiç aşılanmayan grup çeşitli özellikler yönünden karşılaştırıldı. Hekim tarafından bilgilendirilme aşılı grupta anlamlı olarak yüksekti. Her iki grupta, gebelikte aşırı reddetme nedeni güvenlik endişeleriydi.

Tartışma ve Sonuç: Hastaların %13,9'u önceki grip sezonlarında aşı olduğu halde, gebelikte aşı yaptıranların oranı sadece %1,2 idi. Bunun en önemli nedeni Aile Hekimi veya Kadın-Doğum Uzmanı tarafından hastaların yeterince bilgilendirilmemesi olabilir. Ülkemizdegrip aşısı hakkında temel sağlık hizmetlerinin geliştirilmesine ihtiyaç vardır.

Anahtar Kelimeler: grip aşısı, gebelik, tutum, davranış

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INTRODUCTION

Since seasonal epidemics and pandemics occur all over the world, influenza virus infections are highly critical for human health (1). The first pandemic of the 21st century appeared in 2009. An outbreak of disease due to a novel influenza originating from swine (H1N1) was discovered in Mexico, with subsequent cases recorded in a number of other countries. More than 375,000 laboratory confirmed cases and nearly 45,000 deaths (H1N1) were reported in the world in 2009 due to this pandemic (2). Influenza has a major impact on morbidity and mortality. The World Health Organization (WHO) reports that 3 to 5 million cases of serious illness and 250,000 to 500,000 influenza-related deaths occur annually worldwide (3). It also has significant socioeconomic impact. It causes to an economic burden of roughly 56 billion US dollars every year. Indirect costs of the disease are absenteeism and reduced productivity (4). In Turkey, the Sentinel surveillance program started via two laboratories in Istanbul and Ankara. Positivity rates for the results reported from Istanbul during 2003-2016 seasons varied from 6.4% to 45.0% (5). In the study reported from Ankara, including sentinel and non-sentinel data during the 2010-2015 season positivity rates varied from 20%-34% (6).

Pregnant women with influenza are more likely to be admitted to hospital than non-pregnant patients with influenza (7). In Turkey, during the 2009-2010 H1N1 epidemic, the highest number of deaths occurred in pregnant women, those over 65 years old, in the 0-4 age group and those with chronic disease. Pregnant women were 7.2 times more likely than non-pregnant women to be admitted to hospital, and they received 4.3 times more intensive care (8). Pregnancy was identified as one of the strongest risk factors for influenza-related ICU admission around the world (9). In addition, newborn infants born to mothers with influenza might be more likely to have ad-

verse outcomes such as preterm birth and low birth weight (10). Influenza vaccines have been recommended for use in pregnant women for many decades (11).

Because of the passive transplacental transfer of antibodies, the influenza vaccine administered during pregnancy was shown to be successful not only for mothers but also for newborns (12). The Centers for Disease Control and Prevention (CDC) and the American College of Obstetricians and Gynecologists (ACOG) recommended regular influenza vaccination for all pregnant women in any trimester since 2004 because of its efficacy (13). Although the guidelines recommend vaccination, results show low vaccination rates in European countries such as France (14).

This study aimed to determine the level of influenza coverage among pregnant woman during the 2019-2020 season and their knowledge, attitudes and behaviors towards vaccination in our region.

MATERIAL AND METHODS

This is a descriptive study conducted at Necmettin Erbakan University Meram Medical Faculty Hospital to determine the knowledge and attitudes of pregnant women about the efficacy and safety of the influenza vaccine.

Participants

The convenience sampling method was used for sample selection in the study. Pregnant woman who applied to the Obstetrics outpatient clinic consecutively between June 2020 and July 2020 were included in the study. Those who were younger than 18 years old, had additional chronic disease, could not speak Turkish and did not want to participate were excluded from the study. A total of 500 participants over the age of 18 who applied to the outpatient clinic and had a healthy pregnancy were invited to the study. Of these 402 patients volunteered to participate in the study. The participation rate in the study was 80.4%.

Questionnaire Form

A questionnaire consisting of 16 questions was created in two section, based on literature review and inquiring about the sociodemographic characteristics of the participants. Section one included items about socio-demographics (age, education, first pregnancy or not), and knowledge of influenza (source of information symptoms, risks, protection). Section one of the questionnaire is presented in Table 1.

Patients who had been vaccinated before but were not vaccinated during pregnancy were named group 1. Patients who had never had a vaccine before were named group 2. The reasons for both groups refusing vaccines during pregnancy were evaluated with the second part of the questionnaire. Section two of the questionnaire is presented in Table 2.

Question 1 How old are you?
Question 2 Your educational status	<ul style="list-style-type: none"> • Illiterate • Primary school • Secondary school • High school • University
Question 3 What is your pregnancy?	<ul style="list-style-type: none"> • Primiparae • Multiparae
Question 4 Have you ever had flu?	<ul style="list-style-type: none"> • Yes • No
Question 5 What is your source of information about the vaccine?	<ul style="list-style-type: none"> • Doctor • TV-newspaper • Social environment • Social media
Question 6 What are the flu symptoms? (you can mark more than one option)	<ul style="list-style-type: none"> • Fever • weakness • headache • cough, • dyspnea
Question 7 How to prevent flu	<ul style="list-style-type: none"> • Vaccination • Other (drug, herbal tea etc)
Question 8 Do you think the flu has serious consequences?	<ul style="list-style-type: none"> • Yes • No
Question 9 Are pregnant women at risk for the flu?	<ul style="list-style-type: none"> • Yes • No

Question 1 The vaccine has adverse effects	<ul style="list-style-type: none"> • I agree • I disagree
Question 2 I do not believe the benefit of the vaccine	<ul style="list-style-type: none"> • I agree • I disagree
Question 3 The vaccine has not been tried enough	<ul style="list-style-type: none"> • I agree • I disagree
Question 4 I think the vaccine is expensive	<ul style="list-style-type: none"> • I agree • I disagree
Question 5 Once done, it is necessary to be continuous	<ul style="list-style-type: none"> • I agree • I disagree
Question 6 Comments about the vaccine in the media affect me	<ul style="list-style-type: none"> • I agree • I disagree
Question 7 Flu is not a serious disease	<ul style="list-style-type: none"> • I agree • I disagree

Collection of Data

Ethics Committee approval was obtained prior to the study. The pregnant women were given information about the aim of the study and details about the data collection instruments. The questionnaires were filled out by the researchers during face-to-face interviews. Questions were asked about knowledge, attitudes and behaviors towards the flu vaccine.

Analysis

The data were analyzed using SPSS, version 22.0 (SPSS Inc, Chicago, IL, USA). Descriptive and categorical statistics were used for the study. Nominal data are given as numbers and percentages. Chi-square was used for categorical variables for comparison of two independent data groups. Results were considered statistically significant when $p < 0.05$.

RESULTS

Five hundred patients who applied to the obstetrics outpatient clinic were informed about the study. Of these 402 patients volunteered to participate in the study. Their ages ranged from 18 to 44 years, with a mean age of 27.9 ± 5.3 years. Of participants 65.4% were between the

ages of 18-29. The rate of people aged 30-39 was 32.04% and 2.4% were over 40 years old.

Of the 402 participants, 56 (13.9%) had been vaccinated before pregnancy, 346 (86%) had never been vaccinated. Only five cases (1.2%) were vaccinated during pregnancy. These five patients were excluded because the reasons for vaccine rejection during pregnancy and their relationship to sociodemographic characteristics were investigated in the study. Other patients were included in two groups. A statistical comparison was made between the group that had at least one influenza vaccine and the group that never had one. There was a significant difference between the two groups in terms of sources of information. Information from the physician was significantly higher in the vaccinated group. Those who chose the vaccine as a protection method were significantly higher in the vaccinated group. There was no significant difference between the two groups in terms of other features. Questionnaire section one characteristics of vaccinated and unvaccinated groups is presented in Table 3. Reasons for vaccine rejection are presented in Figure 1. The reason for rejection of vaccine in both groups is safety concerns.

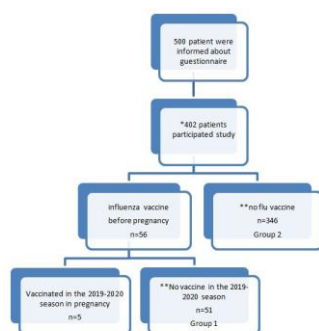


Figure 1; Flow chart of the research

*Questionnaire section one was asked

**Questionnaire section two was asked

Table 3. Questionnaire Section One Characteristics of Vaccinated and No Vaccinated Groups			
	Flu vaccine at least once before n=56	No flu vaccine n=346	P value
Age groups (years)			0.1
18-29	43 (%76.8)	220 (%63.6)	
30-39	13 (%23.2)	116 (%33.5)	
>40	0	10 (%2.9)	
Education			0.1
Illiterate	0	2 (0.6%)	
Primary school	2 (3.6%)	60 (17.3%)	
Secondary school	23 (41.1%)	115 (33.2%)	
High school	16 (28.6%)	84 (24.3%)	
University	15 (26.8%)	85 (24.6%)	
Number of pregnancies			0.5
Primiparae	20 (%35.7)	111 (%32.1)	
Multiparae	36 (%64.3)	235 (%67.9)	
I had flu	26 (46.4%)	158 (45.7%)	0.9
Source of information			<0.01
Doctor	44 (78.6%)	163 (47.2%)	
TV-newspaper	7 (12.5%)	98 (28.4%)	
Social environment	4(7,1%)	61(17,7%)	
Social media	1(1,8%)	23(6,7%)	
Flu symptoms			0,9
one symptoms	20(35,7%)	122(35,3%)	
More than one symptoms	36(64,3%)	224(64,7%)	
How to prevent flu			<0,01
Vaccination	43(76,8%)	170(49,1%)	
Other(drug, herbal tea etc)	13(23,2%)	176(50,9%)	
Flu disease has severe consequences			0,5
Yes	41(73,2%)	265(76,8%)	
No	15(26,8%)	80(23,2%)	
Pregnant women are in risk group			0,9
Yes	44(78,6%)	273(78,9%)	
No	12(21,4%)	73(21,1%)	

DISCUSSION

Maternal immunization during pregnancy provides both direct protection to pregnant women and indirect protection of their infants (15). The WHO has identified pregnant women as the most important risk group to be vaccinated against seasonal influenza (3). Nevertheless efficacy of the vaccine and safety is not well understood. Therefore, the level of influenza vaccine coverage is low. Understanding the knowledge, attitudes and practices towards vaccination can improve coverage. There are a limited number of studies about pregnant patients in our country.

In our country two studies reported vaccine coverage rate ranging 5.9% to 27.9% in a specified risk group over 65 years of age (16-17). Among healthcare workers different rates of 4.3% (18) and 18.4% (19) were reported. However, there is no comprehensive study involving all risk groups in our country. In 2006, the vaccination rate was found to be 4.5% for all cases in a study conducted by Ege University with 12,235 adult patients (20). In England, the influenza vaccine uptake rate in pregnancy is 45% (21). In the USA recommendations for influenza vaccination of pregnant women have changed over time. Vaccine recommendation started in 1966. At that time vaccination was recommended for patients with additional chronic diseases. The Advisory Committee on Immunization Practices (ACIP) suggested that all pregnant women, irrespective of trimester, be vaccinated in 2004. As a result vaccination rates increased to 50% in 2013. In Germany, Baum et al. reported that the rate of receiving the influenza vaccine in pregnant women was 19.5% during the 2012-2014 flu season. Among the group of pregnant women who had previous history of vaccinations against influenza the willingness to be vaccinated was high (43.3%) (23). In contrast, in this study the vaccine rate decreased from 13.9% during pregnancy to 1.2%, and the vaccination coverage rate is far

below the rates reported in different parts of the world.

Interms of socio-demographic features (age, education, first pregnancy or not), there was no disparity between the vaccinated and unvaccinated groups; similarly, vaccination status, demographic, and educational status were not related in the analysis by Eppes et al. (24). In this study, physician information was significantly higher in the vaccinated group. Çiftçi et al. found a statistically significant relationship between being vaccinated for influenza and being informed by physicians in studies involving outpatient clinic patients (25). According to Çelik et al., the obstetrician's suggestion was found to be the most crucial component in the vaccination of pregnant women (26). Studies in Asian countries showed that women were more likely to get vaccinated during pregnancy if recommended by a healthcare professional (27-28). In the questionnaire in our study, the rate of those who chose the vaccine as a method of protection from influenza was significantly higher in the vaccinated group. Of the unvaccinated group respondents, 49.1% stated the vaccine was a method of protection from influenza, but none of them had received the vaccine. The remaining 50.9% stated that they would prefer other methods to avoid influenza. Gürbüz et al. showed that preferring other prevention methods was an important reason for not getting the flu vaccination (29).

Previous research has shown that lack of vaccination among pregnant women is due to fears about their own and their child's well-being (30). In this study similarly, the leading factor that was adversely affected vaccination in group 1 (45.1%) and group 2 (62.4%) was belief about vaccine side effects. The second factor that affected group 1 (31.4%) was belief that the flu was not serious. The second factor affecting group 2 (50%) was the negative effect of the media. The negative impact of the media in our country was observed during the 2009-2010 season. Gürbüz et al reported that the negative propaganda in the media against

the pandemic influenza vaccine impacted healthcare professionals (29). In some countries, innovations were made in primary health care for the influenza vaccine. Since 2016, midwives in France have been approved to administer vaccines to pregnant mothers, newborns, and their families (14). It is necessary to develop primary health care services for vaccines in our country.

In this study, 13.9% of patient had a previous history of vaccinations against influenza but only 1.2% were vaccinated during pregnancy. The reason for this low rate might be that the vaccine is not routinely recommended by the obstetrician or family physician. Another reason might be that the number and duration of pregnancy visits are insufficient to inform patients about the vaccine.

In conclusion, healthcare professionals informing pregnant women about the influenza vaccine will increase the vaccination rate. Vaccination should be a part of prenatal care. Other obstacles to vaccination are safety concerns and media influence. More effective methods such as radio, television, and social media can be used to prevent misconceptions about vaccination.

Conflict of Interest

The authors declare that they have no conflict of interests regarding content of this article

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Ethics Committee Approval

The study was approved by Ethics Committee Necmettin Erbakan University Meram Faculty of Medicine (2020/2508) and the Republic of Turkey Ministry of Health and was conducted in accordance with Declaration of Helsinki

Informed Consent

Informed consent was obtained from all participants

Authors Contributions

Concept and Design: Y.D.G, F.K., Data Collection: F.K., Analysis and Interpretation of Results: F.K., Y.D.G., M.Ö., Draft Manuscript Preparation: F.K., Y.D.G., M.Ö.,

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