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Knowledge and attitudes of Saudi populations regarding seasonal influenza vaccination

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ABSTRACT

The World Health Organization Global Vaccine Action Plan aims to accelerate the control of preventable diseases, including seasonal influenza; however, seasonal influenza vaccination reluctance persists. The current study aimed to assess the knowledge and attitudes of Saudi nationals regarding seasonal influenza vaccinations. An anonymous questionnaire was targeted to Saudi nationals for self-enrolment in this study. Data were analyzed using descriptive and chi-squared analyses. This study included 1298 Saudi nationals (745 males and 553 females) who were ≥ 19 years old. A total of 44.53% of the participants had been vaccinated with the seasonal influenza vaccine. In total, 26.96% of the participants were certain that there were no contradictions between the influenza vaccine and other childhood vaccines and 36.67% knew that individuals with chronic diseases should be given the seasonal influenza vaccine. By contrast, only 123 of the participants (9.48%) understood that pregnant women could be vaccinated with the influenza vaccine. Vaccinated participants in our study showed a higher level of knowledge compared to non-vaccinated participants. Most of the participants reported that the most reliable source of information was healthcare worker advice. The current study provides important information regarding misperceptions in public attitudes towards seasonal influenza vaccinations; these data can be used to plan strategies to address existing gaps in healthcare.

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Introduction

The World Health Organization Global Vaccine Action Plan (GVAP) aims to accelerate the control of all preventable diseases. Attaining national vaccination rates of at least 90% is the main goal of this World Health Organization initiative [1]. In regard to influenza, the GVAP aims to increase the rate of seasonal influenza vaccination while contributing to international pandemic preparedness efforts [2]. Despite the high rate of childhood vaccination in most developed countries, widespread reluctance to voluntary vaccination remains [3]. Therefore, it is important to understand the reasons for this reluctance while taking into account the cultural differences, attitudes and factors that affect the vaccination decisions of different populations [4].

Annually, millions of Muslims from all over the world visit the holy cities of Makkah and Madinah for Omera and Haj. This massive congregation of people can potentially transport several influenza strains to Saudi nationals and residents; furthermore, global dissemination is possible upon emigration. Fortunately, disease transmission is minimized by the dry and hot weather in these two holy cities as well as the extensive hygiene measures conducted by Saudi authorities, which include the frequent cleaning of floors, water sinks and toilets; however, disease transmission cannot fully be eliminated.

The Saudi Ministry of Health provides inactivated influenza vaccinations annually and free of charge to anyone over the age of six months (<http://www.moh.gov.sa/en/Flu/Pages/Prevention.aspx>). The importance of the annual influenza vaccination is highlighted in different media outlets and healthcare centers as well as on the website of the Saudi Ministry of Health, especially prior to the annual pilgrimage season. However, previous studies have revealed that healthcare workers and pregnant women are reluctant to receive seasonal influenza vaccinations, although these studies were limited in scope [5,6].

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The current study aimed to investigate current public knowledge regarding vaccinations in general, the influenza vaccine in particular, the main sources of this knowledge and the attitudes and beliefs regarding seasonal influenza vaccinations. The results of this study may help in planning reforms to address gaps in healthcare.

Materials and methods

Web-based survey

The Taif University ethics committee approved the study. A web-based, self-enrolled questionnaire was made available utilizing the Google Forms platform between May and August 2016, which was immediately prior to the seasonal influenza vaccination period. This questionnaire included eleven multiple-choice questions as well as demographic questions regarding the age, sex, marital status and nationality of participants. The online link to the survey was advertised in various social media outlets that were popular among Saudi nationals. Participants who clicked on the link were asked to affirm their agreement to participate in the survey. Vaccination status was assessed by asking if the individual had been vaccinated against influenza. Outcome expectations and risk perceptions were assessed according to the perceived safety of the influenza vaccine. Perceptions of efficacy were assessed regarding the benefits and drawbacks of influenza vaccination according to beliefs related to the participants' sources of information. Other beliefs regarding perceived protection against influenza without vaccination (e.g., natural products and folk medicine) were assessed.

Statistical analysis

The participants' responses were statistically analyzed using descriptive and chi-squared analyses utilizing SPSS 16.0 (SPSS Inc., Chicago, IL, USA).

Results

Participants

A total of 1298 Saudi nationals (745 males and 553 females) participated in this study; all participants were ≥ 19 years old. Most of the participants were married ($n=934$), while a minority ($n=364$) were single. A total of 578 (44.5%) participants had been previously vaccinated at least once with the seasonal influenza vaccine, while 720 (55.5%) participants had not been previously vaccinated.

Influenza immunization rate and awareness

Most of the participants believed that vaccines are safe and effective ($n=1097$, 84.51%). Approximately half of the participants understood that the best way to avoid influenza complications is to receive the seasonal influenza vaccine ($n=686$, 52.85%). A total of 578 (44.53%) of the participants had been previously vaccinated with seasonal influenza vaccine. Vaccination rates were higher in males ($n=357$, 47.92%) compared to females ($n=221$, 39.96%) (data not shown).

Vaccinated participants were significantly more likely to believe that the seasonal influenza vaccine is the best way to avoid influenza complications compared to non-vaccinated participants ("Yes" 69.2 vs. 39.7%, "No" 10.9 vs. 13.5%, "Do not know" 19.9 vs. 46.8%, for vaccinated vs. non-vaccinated participants, respectively). Only 450 (36.67%) of the participants understood that individuals with chronic diseases should receive the seasonal influenza vaccine; furthermore, vaccinated participants showed a higher level of knowledge compared to non-vaccinated participants ("Yes" 42.7

vs. 28.2%, "No" 5.4 vs. 6.7%, "Do not know" 51.9 vs. 65.1%). In addition, vaccinated individuals demonstrated better awareness when asked if the seasonal influenza vaccine weakens the immune system ("Yes" 11.8 vs. 18.4%, "No" 48.4 vs. 17.8%, "Do not know" 39.8 vs. 63.8%). Only 350 (26.96%) of the participants were aware that there are no contradictions between the influenza vaccine and other vaccines; furthermore, both vaccinated and non-vaccinated participants possessed poor knowledge regarding this issue ("Yes" 34.6 vs. 20.8%, "No" 10.9 vs. 5.8%, "Do not know" 54.5 vs. 73.3%).

Only 123 of the participants (9.48%) understood that pregnant women could be vaccinated with the influenza vaccine; this level of awareness was detected in all participants ("Yes" 13 vs. 6.7%, "No" 23 vs. 21.7%, "Do not know" 64 vs. 71.6%). Interestingly, most of the participants were unaware of the fact that the seasonal influenza vaccine is offered free of charge in Saudi health care centers ("Yes" 70.2 vs. 45.1%, "No" 29.8 vs. 54.9%). Participants were generally aware that natural products (e.g., honeybees, ginger, and *Nigella sativa*) are not able to replace vaccines ("Yes" 32.1 vs. 19.2%, "No" 46.0 vs. 56%, "Do not know" 16.9 vs. 24.8%); however, a higher level of knowledge was surprisingly found in the non-vaccinated group. Insignificant differences were found between the vaccinated and non-vaccinated groups in regard to whether febrile persons should be vaccinated with the seasonal influenza vaccine ("Yes" 61.4 vs. 57.4%, "No" 15.4 vs. 13.2%, "Do not know" 23.2 vs. 29.4%) (Table 1). Although there are many resources that promote awareness of the seasonal influenza vaccine, information from physicians and healthcare workers were considered the most trusted sources of information.

Discussion

Most of the participants in the current study believed that vaccines are safe and effective and approximately half understood that the best way to avoid influenza complications was to receive the seasonal influenza vaccine. However, approximately half of the participants had not received the influenza vaccine. Vaccinated individuals showed a higher level of knowledge in comparison to non-vaccinated individuals in regard to the vaccine being highly recommended for individuals with chronic diseases.

A relatively high percentage (44.53%) of the participants had been vaccinated with the seasonal influenza vaccine. Our findings regarding vaccination rates among Saudi nationals are consistent with those reported in Europe [7]. Gaps in knowledge exist regarding the need to vaccinate children, pregnant women and individuals with chronic diseases; our findings correspond to those reported in previous studies [8,9]. There was also a lack of awareness regarding the availability and cost of the seasonal influenza vaccine in Saudi healthcare centers, especially among non-vaccinated participants. It is worth mentioning that vaccine cost is one of the perceived barriers to receiving the influenza vaccination [10].

The vaccination of pregnant women with the inactivated seasonal influenza vaccine is not only safe [11] but also highly effective in preventing hospitalizations among <6-month-old infants who are infected with the influenza virus [12]. In the current study, both vaccinated and non-vaccinated participants expressed poor knowledge regarding contradictions between the influenza vaccine and other vaccines as well as the safety of the seasonal influenza vaccine for pregnant women. High percentages of participants did not have sufficient knowledge regarding the fact that the seasonal influenza vaccine is safe and does not weaken the immune system. Most of the participants believed that natural products (e.g., honeybees, ginger, *Nigella sativa* and natural herbs) would not be as effective as the seasonal influenza vaccination, which is quite a positive point; however, this finding was surprisingly better understood by the non-vaccinated participants.

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