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Report

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Abstract

Background: Rejection, hesitancy and low uptake of the COVID-19 vaccine are major public health challenges in Saudi Arabia.

Aims: To address COVID-19 vaccine hesitancy and rejection at the King Saud Bin Abdulaziz University for Health Sciences (KSAU-HS) using evidence-based strategies.

Methods: A questionnaire was administered electronically to participants at KSAU-HS to understand the reasons for vaccine hesitancy or rejection and develop an evidence-informed vaccination plan. Initial results from March 2021 showed that only 60% of respondents had taken at least 1 COVID-19 vaccine dose. Based on the results of the survey, KSAU-HS designed a 6-month vaccination campaign to raise awareness about the vaccine and its importance and increase acceptability rates. Mass media, social media, and direct messaging as reminders were used to address the barriers identified and to help the university community overcome fears and misconceptions about the COVID-19 vaccine.

Results: The evidence-based interventions helped achieve a significantly high vaccination rate in the university community, with 99.7% of individuals vaccinated by October 2021; one of the highest vaccination rates among public universities in Saudi Arabia.

Conclusion: Evidence-based interventions targeted at specific populations can help address prevailing concerns about the COVID-19 vaccine and other similar public health issues.

Keywords: vaccine, vaccination, COVID-19, vaccine hesitancy, university, Saudi Arabia

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Introduction

COVID-19 has had a profound impact on public health locally and globally. A report by the Saudi Ministry of Health on 9 February 2021 showed that there were 362 368 cases of COVID-19 and 6415 deaths in the country (1) (Figure 1).

King Saud Bin Abdulaziz University for Health Sciences (KSAU-HS) is a government university that was founded on 6 March 2005 (2). As of early 2020, KSAU-HS had 14 922 affiliates: 777 faculty members, 2979 administrative staff, and 11 166 students (2). Shortly after the first case of COVID-19 was diagnosed in Saudi Arabia, academic institutions were advised to take precautions to contain the spread of the disease.

Vaccination during a pandemic is among the most effective strategies for containment of the situation (3,4). Therefore, the Saudi Government and Ministry of

Health developed a risk management plan to mitigate the impact of COVID-19 and reduce the rate of infection. Widespread vaccination was one of the recommended strategies, especially in high-risk facilities like universities. In mid-December 2020, Pfizer-BioNtech was the first vaccine against COVID-19 approved in Saudi Arabia, with 500 000 doses delivered (5). However, COVID-19 vaccine hesitancy contributed significantly to the slow vaccination coverage throughout Saudi Arabia.

KSAU-HS is under the umbrella of the Ministry of National Guard Health Affairs, which had extensive experience with infection control and prevention following the MERS-CoV outbreak at the facility in 2015. At that time, emergency preparedness and infection prevention practices were revised to contain the spread of the disease. As a result, plans for future crisis management were developed and made available at the facility to deal with similar situations (6). Management of the MERS-CoV outbreak was enhanced with the involvement of staff members in sharing experiences and relevant knowledge, developing trust and teamwork, and promoting collective leadership. Recommendations were made to improve crisis management strategies, manage the media, and take proactive actions in advising and supporting staff (6).

In light of the precedent set by the Ministry of National Guard Health Affairs, the KSAU-HS COVID-19 Crises Management Committee was formed in February 2020 with the goal of implementing health protection and disease prevention programmes and policies across all its 3 campuses. The KSAU-HS COVID-19 Infection Prevention and Control Advisory Subcommittee was also formed. Shortly after that, all Saudi universities were instructed to establish committees to combat the spread of COVID-19. Vaccination planning was delegated to the Infection Prevention and Control Advisory Subcommittee, which met with stakeholders to discuss plans and implementation strategies. The preliminary vaccination plans included the establishment of vaccination centres on campuses to facilitate vaccination in the university communities. The subcommittee sought to collect accurate data on vaccination history and hesitancy in the university so they could propose an evidence-based vaccination plan that would meet the needs of the university and the urgency of the pandemic.

The aim was to vaccinate all KSAU-HS affiliates within a limited time using evidence-based strategies to address COVID-19 vaccine hesitancy. All university residents were required to be vaccinated with 2 doses by 1 August 2021, otherwise they would not be allowed on university premises as per the government regulations.

Methods

KSAU-HS developed a comprehensive plan to improve COVID-19 vaccine uptake, which consisted of 3 phases: (1) situation analysis (baseline assessment); (2) stakeholder engagement (streamlining current and accurate data); and (3) community engagement through social and traditional media (awareness programme).

Phase 1: Situational analysis (baseline assessment)

To obtain accurate data that would inform future decisions, the COVID-19 Infection Prevention and Control Advisory Subcommittee created a standard form and distributed it to colleges and deanships to collect data about vaccination rates among their communities, with weekly follow-up. They then worked with the Saudi Ministry of Education to update the vaccination data based on national sources (such as Tawaklna). Throughout the process, college deans and directors were actively involved and provided timely reports to the subcommittee. As a result of the baseline and situational assessment, current and accurate vaccination rates were available at KSAU-HS. This phase helped decision-makers understand the situation and prepared them to support the development of plans, policies, and strategies for vaccination management.

Phase 2: Stakeholder engagement (streamlining current and accurate data)

After the initial phase of data collection, the COVID-19 Infection Prevention and Control Advisory Subcommittee planned conducted an in-house survey to gather more information

about vaccine uptake rates and reasons for hesitancy . The survey questionnaire was distributed between March and May 2021 via email through the University Message Center with a link to the web survey. It included demographic information, vaccination data, and reasons for vaccine hesitancy. A total of 7167 (48%) participants completed the survey. Results were reported periodically to relevant decision-makers and COVID-19 committees. A live dashboard was created to provide timely updates to senior leadership (Figure 2). The dashboard displayed various data in charts, including the reasons given by KSAU-HS affiliates for not vaccinating, such as safety concerns, appointment availability, efficacy, past COVID-19 infection, preference for a particular vaccine that was not available, and pregnancy or breastfeeding (Figure 2 and Table 1). The survey results were used to develop an evidence-based vaccination plan to achieve the target vaccination rates.

Drawing on the university's experience with the MERS-CoV outbreak, it was critical to reach out to different stakeholders, such as affiliates and management, to increase their involvement in the decision-making process and successfully control the spread of COVID-19 at the institution. This strategy yielded positive results in the past and fostered shared leadership and accountability (6).

Phase 3: Community engagement through social and traditional media (awareness programme)

The COVID-19 Infection Prevention and Control Advisory Subcommittee developed a COVID-19 vaccination awareness programme using the results of the survey, which used social media as one of the main distribution channels. The Saudi population is one of the largest internet users globally, with nearly 96% of people using the internet and 80% using social media in 2021 (7). A review of scientific evidence suggested the positive impact of using social media to raise awareness and change health behaviour by disseminating brief messages to the target population (3,4). Social media is a fast and efficient way to communicate with the general public and health professionals to promote infection prevention strategies and community engagement, especially during outbreaks (3,4). Therefore, the internet and social media were used extensively for the awareness programme (intervention) implemented by KSAU-HS (Tables 1 and 2).

Intervention

The COVID-19 committees launched a COVID-19 vaccine hesitancy and awareness programme aimed at highlighting the importance of vaccination for the prevention and control of COVID-19 pandemic. The plan was to increase vaccination rates and address reasons for vaccine hesitancy. The programme was developed in collaboration with the Department of

University Relations and Media Affairs at KSAU-HS and relied on multiple sources, including survey results and national (Ministry of Health) and global (World Health Organization; WHO) data. The survey results were used to identify the target audiences and to create targeted messages that addressed reasons for vaccine hesitancy (Table 1). It was critical to address vaccine-specific issues, risks, and benefits, and to highlight issues related to newly approved vaccines. It was also critical to establish active and accessible vaccination centres on university campuses, as non-availability of vaccination centres was among the reasons for vaccine hesitancy. The programme was launched on 6 June 2021 and designed to encourage individuals and social groups to get vaccinated. This was accomplished by disseminating key facts and sharing personal experiences. The Department of University Relations and Media Affairs was responsible for disseminating regular awareness messages and social media posts. This also included university-owned communication channels, such as social media, SMS, and message center. Initiatives also included educational media, announcements, workshops, seminars, and consultations. A list of the interventions is outlined in
Table 2
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Results

Uptake of the first dose of COVID-19 vaccine increased significantly from 63% to 87% between May and July 2021 (Figure 3). The progress made by KSAU-HS was achieved prior to the COVID-19 vaccination mandate, which took effect on 1 August 2021. The mandatory national vaccination was a Saudi Government decision, and universities were instructed to adhere to the deadlines set by the Ministry of Education and Ministry of Health. Following the mandate, vaccination rates for the first and second doses increased to 99.7% and 99.3%, respectively in October (Figure 3). By the end of October 2021, KSAU-HS had the highest rate of COVID-19 vaccination among the 27 public universities in Saudi Arabia.

Key challenges in implementing the vaccine uptake programme

The presence of outdated or miscommunication of data regarding university community members presented a challenge to collecting accurate data and analysing the situation. A designated team had to manually filter and update the data to eliminate discrepancies.

Vaccine availability was limited between June and August 2021 because of high demand locally and globally, which impacted adherence to vaccination requirements and guidelines.

Survey distribution via email did not produce a high response rate when used as a stand-alone data collection method.

Conclusion

Evidence-based strategies can yield the desired results within a short period, especially for time-sensitive issues. Fear and uncertainty hampered COVID-19 vaccine acceptance. Social media is a powerful tool for reaching a large audience in a timely and cost-effective manner, particularly in critical situations like pandemics. It boosts public awareness and encourages acceptance of new regulations and policies. One key factor to note is that the commitment of the Saudi Government to increasing the uptake of COVID-19 vaccine nationwide may have also contributed to the overall increase in vaccine coverage at KSAU-HS.

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Amélioration de l'adoption du vaccin anti-COVID-19 : enseignements tirés d'un établissement universitaire en Arabie saoudite

Résumé

Contexte : Le rejet, la faible adoption du vaccin anti-COVID-19 et la réticence face à ce vaccin constituent des défis de santé publique majeurs en Arabie saoudite.

Objectif : Faire face au rejet du vaccin anti-COVID-19 et à la réticence concernant ce vaccin à l'Université King Saud Bin Abdulaziz des sciences de la santé (KSAU-HS) en utilisant des stratégies fondées sur des données probantes.

Méthodes : Un questionnaire a été distribué par voie électronique aux participants de l'Université afin de comprendre les raisons motivant le rejet face à la vaccination et la réticence exprimée à cet égard et d'élaborer un plan de vaccination fondé sur des données probantes. Les premiers résultats de mars 2021 ont montré que 60 % des personnes interrogées seulement avaient reçu au moins une dose de vaccin anti-COVID-19. Sur la base des résultats de l'enquête, l'université susmentionnée a conçu une campagne de vaccination de six mois visant à sensibiliser au vaccin et à son importance, ainsi qu'à accroître les taux d'acceptation. Les médias de masse, les réseaux sociaux et la messagerie directe pour diffuser des rappels ont été utilisés afin de lever les obstacles identifiés et d'aider la communauté universitaire à surmonter les craintes et les idées fausses au sujet du vaccin anti-COVID-19.

Résultats : Les interventions fondées sur des données probantes ont permis d'atteindre un taux de vaccination considérable dans la communauté universitaire, avec 99,7 % de personnes vaccinées en octobre 2021, soit l'un des taux de vaccination les plus élevés parmi les universités publiques d'Arabie saoudite.

Conclusion : Des interventions fondées sur des données probantes ciblant des populations spécifiques peuvent aider à répondre aux préoccupations prédominantes concernant le vaccin anti-COVID-19 et d'autres questions de santé publique similaires.

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