COMMUNITY-FOCUSED INTERVENTIONS IN RESPONSE TO COVID-19 IN THE HASHEMITE KINGDOM OF JORDAN

Celina M. Hanson

United Nations Children's Fund (UNICEF), Amman, Jordan, cmh558@nyu.edu

Harim Humayun

United Nations Children's Fund (UNICEF), Amman, Jordan, harim09@gmail.com

Amaya Gillespie

United Nations Children's Fund (UNICEF), Middle East and North Africa Regional Office, Amman, Jordan, agillespie@unicef.org

Ruba Hikmat

United Nations Children's Fund (UNICEF), Amman, Jordan, hikmat.ruba@gmail.com

Abstract

Before the pandemic, vaccine hesitancy was listed as one of the biggest threats to global public health. After COVID-19 appeared, and in anticipation of COVID-19 vaccines, the amount of vaccine misinformation and disinformation circulating on the internet and on various social media platforms more than doubled. The world is learning as we go, with new information shared as the pandemic unfolds, and, in some cases, government responses have been politicised. This has fed the public's fear and uncertainty. Therefore, successful COVID-19 vaccination programmes, must build trust and counter misinformation and make reliable information easily available. This article describes the interventions implemented in the Hashemite Kingdom of Jordan to collect information on community perceptions around COVID-19 vaccinations with a focus on the following interventions: youth volunteer activities, engaging frontline workers and social listening. This report utilized a desk review of key reports and data to provide examples of best practices and to inform future risk communication and community engagement (RCCE) strategies and policies.

Keywords: risk communication, community engagement, vaccine hesitancy, interventions

Introduction

Since the World Health Organization (WHO) declared COVID-19 a Public Health Emergency of International Concern on 30 January 2020, the pandemic has claimed the lives of over four million people worldwide (WHO, 2021c). Shortly after WHO's declaration, research and development for diagnostics, therapeutics and vaccines began with the first global COVID-19 Research and Innovation Forum in Geneva on 11-12 February 2020 (WHO, 2021a). In an unprecedented amount of time, the first vaccine had been approved and on 8 December 2020 in the United Kingdom (UK) the first COVID-19 vaccine dose was administered for the first time in a public programme.

The WHO states that equitable access to safe and effective vaccines is critical to ending the COVID-19 pandemic (WHO, 2021b). However, even before this pandemic began, misinformation and vaccine hesitancy were a growing issue around already existing vaccines that have been in public use for decades. In 2019, the WHO identified vaccine hesitancy as one of the top ten biggest threats to global public health (WHO, 2019). After COVID-19 appeared, the amount of vaccine misinformation and disinformation (misinformation spread with malicious intent) circulating on social media platforms more than doubled (Byrd & Smyser, 2020). Vaccine misinformation has had many negative consequences, including beyond COVID-19. For instance, although measles has been eliminated in the United States since 2000, an increase

in misinformation and vaccine hesitancy was linked to a measles outbreak involving 1,200 cases in 2019 (CDC, 2021; Gardner, Dong, Khan, & Sarkar, 2020).

Apart from overcoming a large amount of vaccine misinformation publicly available, there are additional challenges. The entire world is 'learning as we go', with new information being collected and shared as it unfolds, and this has fed uncertainty and fear. In various communities around the world, public health responses to decrease transmission of the virus have been politicised. All these components undermine public trust in health professionals and governments and have important implications for any vaccination efforts against the virus (UNICEF, 2020). For a successful COVID-19 vaccination programme, there must be measures in place to build trust and counter misinformation effectively and make reliable information easily available to people (UNICEF & Yale Institute for Global Health, 2020).

Effective programmes need to consider the complexity of human behaviour, and that people do not always make decisions based solely on benefits and costs or on the ramifications of their actions. The decisions people make can be a highly emotional process influenced by their environment, by those who matter to them and by others they interact with. Therefore, evidence-based programs aimed at building trust in vaccines and combatting vaccine misinformation must be multi-faceted and tailored to address various motives behind vaccination decision-making.

Attribution of direct impact to specific behavioural interventions is notoriously complex, especially in the case of a pandemic where multiple actors are involved in ways that are difficult to coordinate. As such, theories of change are very important for guiding the overall strategy and setting assumptions and indicators (Petit, 2019). In the case of Jordan, frequent data collection was put in place to identify various barriers and contextual factors as well as monitor implementation processes and outputs, including messaging.

This article describes the COVID-19 situation in the Hashemite Kingdom of Jordan and the interventions implemented to collect information on community perceptions around COVID-19 vaccinations with a focus on the following interventions: youth volunteer activities, engaging frontline workers and social listening. This report utilised a desk review of key reports and data and aims at informing future risk communication and community engagement (RCCE) strategies and policies and at providing examples of best practices.

Method

This report utilised a desk review of key reports and data on the COVID-19 response in Jordan and aims at informing future risk communication and community engagement (RCCE) strategies and policies and at providing examples of best practices.

The Pandemic in Jordan

On the 2nd of March 2020, the first COVID-19 case was reported in the Hashemite Kingdom of Jordan, a country with a population of approximately 10 million. By 19 March 2020, Jordan had one of the most stringent government responses in the region that included school and workplace closures, cancellation of public events, restrictions on public gatherings, closures of public transport, stay-at-home requirements, restrictions on internal movements, international travel controls, and requirements to wear face coverings (Our World in Data, 2021). These strict measures lasted for six weeks and were eased slightly in accordance with the decreased risk in Jordan. Jordan has since eased and tightened restrictions in response to the rise and fall of cases in accordance with the practices of countries in the region and in the rest of the world.

Since the first recorded case in Jordan until July 2021, Jordan has reported over 750,000 COVID-19 cases and close to 10,000 deaths (The Hashemite Kingdom of Jordan Ministry of Health, 2021a). In addition to the strain on the health sector and loss of life, the pandemic has affected all sectors and areas of society such as education, supply chains, industry, trade, and finance. According to the International Monetary Fund (IMF), before the pandemic, Jordan's economic growth was below potential; unemployment and gross public debt were high, the refugee crisis weighed on the economy and on public finances, and the COVID-19 crisis has exacerbated Jordan's economic situation (IMF, 2020). The broader

economic impacts and the road to recovery will depend on the duration and depth of the outbreak both in Jordan and globally (IMF, 2020).

The Ministry of Health (MoH) in Jordan launched the national COVID-19 vaccination campaign on 23 December 2020 beginning with an invitation for everyone living in Jordan to register for free vaccinations (Hatmal et al, 2021). On 13 January 2021, Jordan provided the first COVID-19 shots, prioritizing healthcare workers and the elderly (Al-Junaidi, 2021). As of 11 July 2021, the number of fully vaccinated people in Jordan was 1,657,479, while the number having received at least one dose reached 2,654,733 (The Hashemite Kingdom of Jordan Ministry of Health, 2021a). A fully vaccinated person is defined as 20 days after receiving 2 doses of the vaccine.

Similar to trends seen globally, many in Jordan also expressed uncertainty or vaccine hesitancy around COVID-19 vaccinations. A study conducted in December shortly before Jordan's COVID-19 vaccination campaign began, showed that 71.6% of respondents would not get the COVID-19 vaccine (Sallam et al, 2021). This study found that COVID-19 misinformation and beliefs in conspiracies have a negative impact on vaccine hesitancy among Jordanians and was linked to a dependence on social media as the primary source of knowledge about COVID-19 vaccines (Sallam et al, 2021).

Technological advances and the rapid development of COVID-19 vaccines have contributed to the emergence of rumours and uncertainty (Hatmal et al, 2021). Rumours linking COVID-19 vaccines to various post-vaccination adverse effects also exist (Hatmal et al, 2021). Based on a study conducted in Jordan from October 2020 to February 2021, the reasons for COVID-19 vaccine hesitancy included the following: beliefs that the virus does not exist, the virus is not dangerous enough to warrant a vaccination, that natural immunity will be enough and that preventive measures to wear face masks and socially distance are enough; doubts that the vaccines are effective against the virus and its variants due to the speed at which these vaccines were developed; distrust in the vaccine ingredients and the companies that make them; concern about the possibility of vaccine side effects; and a lack of confidence in government plans (Ipsos, 2021, March). The below interventions were designed and implemented to address the COVID-19 vaccine hesitancy findings from the above-mentioned December 2020 and October 2020 – February 2021 studies (Sallam et al, 2021; Ipsos, 2021, March) with the aim of increasing vaccination rates, based on the necessary data collection systems and processes to address findings as they evolve.

Interventions: Youth Volunteer Activities, Training Workshops and Responding to the Community

Plans and activities to engage and mobilise communities to effectively enact COVID-19 behavioural prevention measures began in Jordan in early March 2020. Jordan's National Campaign (الله و فيد) or Elak w feed) joined the efforts of UNICEF-Jordan, WHO, MoH, Royal Health Awareness Society (RHAS) and the National Council for Family Affairs. Partnerships were also formed with the private sector, non-governmental organizations (NGOs), the Ministry of Culture, Ministry of Youth (MoY) and the Ministry of Awqaf and Islamic Affairs to spread awareness among children, adolescents and parents to encourage the adoption of healthy behaviours to reduce the spread of COVID-19 (The Hashemite Kingdom of Jordan Ministry of Health, 2021b).

To counter misinformation, rumours and myths, the programme response focused on a flexible strategy. Initially, the approach focused on creating a single, reliable source of information, and then shifted towards behaviour change communication and adaptation of social norms through specific packages (The Hashemite Kingdom of Jordan Ministry of Health, 2021b). The approach further evolved to include COVID-19 vaccine uptake interventions as the vaccines became available in Jordan.

The section focuses on RCCE COVID-19 vaccination interventions in Jordan around:

- youth volunteer activities,
- engaging frontline workers, and
- responding to the community efforts.

The National Campaign (Shebab Elak w feed) Youth Volunteer Programme

One package of interventions from the National Campaign involves youth volunteers from Nahno, the National Youth Engagement and Volunteering platform launched by the Crown Prince Foundation, a national programme that promotes youth engagement and volunteer activities for positive change in communities while providing opportunities for young people to develop skills and gain experience. The Shebab Elak w Feed initiative was officially launched by the MoY, MoH, UNICEF, and RHAS in Feb 2021. However, training sessions for youth volunteers began on 5 January 2021 to equip the youth with community engagement skills and key COVID-19 and vaccine uptake messages. Youth were mobilized to conduct activities in March 2021. Youth volunteers partake in the following activities:

- Help register people on the COVID-19 vaccination platform (vaccine.jo) in-person at selected health centres and through social media channels.
- Share vaccine uptake key messages in-person in public areas at supermarkets, malls, mosques, and at selected health centres and through their social media accounts and governorate pages. Many volunteers in governorates created a Facebook page to engage their community, facilitate sharing of key messages and to share their efforts.
- Conduct awareness sessions.
- Youth volunteers conduct daily visits to various institutions to evaluate adherence to COVID-19 safety measures included in the Sehtak App Accountability Tool (يحمينا تقييمك), an app that contains information on the level of COVID-19 adherence to regulations in Jordan.
- Support the MoH COVID-19 helpline.
- Create a series of roadshows to raise COVID-19 vaccination awareness where booths are installed and manned by youth volunteers in malls.
- Youth volunteers collect observations of people following recommendations to reduce transmission of COVID-19, misinformation and rumours and report this information to help inform the development of key messages.

Since the programme began in March until 11 July 2021, 134 youth volunteers at 50 centres have supported with the registration of more than 23,140 people. Twelve sessions have been conducted by youth volunteers with 506 participants. (All data reported is up until 11 July 2021).

Engaging Frontline Workers or Managers, Community Workers and Volunteers of Various NGOs that Work Directly with Communities

UNICEF unifies messages by conducting COVID-19 vaccination awareness sessions targeting the following partners throughout Jordan:

a. COVID-19 Vaccination Awareness Sessions

Since February 2021, the National Campaign began conducting training sessions for managers; frontline, and community workers from various partners such as the Islamic Charity Centre Society (ICCS); UNICEF partner health and social workers in Azraq, Za'atari and Palestinian camps; and partners working for sister agencies such as the Jordan River Foundation (JRF), Takeyyet Um Ali, Mateen, (FAO), the International Organization for Migration (IOM), the United Nations, United Nations Development Programme (UNDP), United Nations Populations Fund (UNFPA), United Nations High Commission for Refugees (UNHCR), United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA), UN-Women. With the goal of mainstreaming the programme into existing programmes and having CCE programmes in all sectors, participants are first introduced to basic knowledge on Covid-19 prevention measures, concepts of community engagement, skills and expected results. Training material covers the following: awareness on COVID-19 vaccinations; how to register on the portal; how to address vaccine hesitancy and

misinformation/rumours; how to engage communities effectively for COVID prevention; and the role of participants in their communities. Since these frontline and community workers are already working in the field and in different sectors in all governorates in Jordan, they reach communities with the key messages provided to them during the training sessions. For example, all centres managed by UNICEF implement face-to-face awareness sessions for communities, especially targeting parents of Makani beneficiaries. Centres reach beneficiaries through field campaigns, phone calls and Facebook pages. From February to June 2021, there have been 29 sessions with 1,139 participants.

b. Women Community Based Organizations (CBOs), Civil Society Organizations (CSOs), and Community Champions

In October 2020 to February 2021, a study in Jordan showed that the willingness to receive a COVID-19 vaccine in women was significantly lower than in men (Ipsos, 2021 March). To address this issue, training workshops were initiated by UNICEF to mobilise women CBOs, CSOs, and Community Champions to reach and influence women in communities and encourage registration on the vaccine portal. The workshops began in April 2021 and aimed to introduce the concept of social and innovative initiatives and discuss steps on how to create community initiatives, including resource management and action planning activities. The participants were presented with tools, for documentation purposes (e.g., photos, attendance, and reporting). These CBOs then hold various activities such as educational and discussion sessions (online and offline) in Amman, Zarqa and Irbid, as well as for women visiting their organizations for charity and support. To date, CBOs have reached 1,470 community members in this way in Amman, Zarqa and Irbid. After the training, Community Champions then hold educational sessions and peer discussions, encouraging community members to register on the portal. As of May 2021, Community Champions have reached 1,039 community members through educational sessions and peer discussions.

- c. Community Health Committee (CHC) volunteer
 - Focus group discussions conducted in January 2021 by Jordan's MoH suggested that health workers from different governorates within Jordan did not trust the effectiveness of the COVID-19 vaccine (The Hashemite Kingdom of Jordan Ministry of Health, 2021c). Thus, CHC volunteers were trained to address deeper health-related COVID-19 issues and when sent into the field they can help reduce COVID-19 vaccine hesitancy among other health workers. They also raise awareness at centres and conduct home-visits in the surrounding community. Home-visits are aimed to inform community members on the importance of vaccination, correcting possible misconceptions and answering concerns, encouraging vaccinations, and helping interested community members with registration. As of July 2021, CHCs have reached 1,078 community members, through home-visits and in health centres.
- d. Vaccine uptake training that was incorporated into long-established UNICEF programmes and networks
 - As of June 2021, 597 frontline staff of partners and programmes that had existed before the pandemic were trained by UNICEF on COVID-19 vaccination awareness.
 - ICCS reach vulnerable communities throughout Jordan. They have reached over 1,020 people in face-to-face awareness sessions for the community, and almost 2,542 beneficiaries through campaigns on field, phone calls and Facebook pages. In addition, 17 staff members have received COVID-19 vaccinations and 260 staff have registered on the vaccination platform and are waiting to take the vaccine.
 - Mateen/Reaching the Unreachable. UNICEF began training sessions for Mateen staff, a Jordanianbased non-profit organization, working in informal tent settlements (ITSs) in May 2021. Mateen recruits volunteers with a medical background to support Makani volunteers and field coordinators

during awareness and Q&A sessions. The training sessions took place in 36 of 50 sites with 463 participants. As a direct result, 154 persons registered on the vaccine platform from May to July 2021. Makani (or My Space in Arabic) centers provide children and young people access to learning opportunities, child protection and other critical services.

e. Dom Community Engagement

Awareness sessions to the Dom communities, a minority group in Jordan that is often the most discriminated against and marginalised (UNICEF, 2016), by UNICEF began in May 2021 and are carried out periodically, where assistance is provided in registering community members on Jordan's vaccine platform. Awareness sessions include a component with medical personnel, house-to-house field visits, and staff sharing personal experiences with vaccinations. Eleven Makani centres targeting Dom communities have conducted awareness sessions on vaccines to 710 Dom. Around 657 attendees have since registered on the portal to receive the vaccination and about 230 have received at least one dose of the vaccine. Of those who have not yet taken the vaccine, 60% are waiting for their vaccination appointments, while the remaining either missed appointments or changed their mind.

Social Listening Platforms: Responding to the Community – Bridging the Gap Between the Community and Decision Makers

To counter COVID-19 vaccination misinformation and map community concerns and challenges, youth, volunteering under the National Campaign (Shebab Elak w feed), engaged in social listening activities. This entails gathering feedback and data during the implementation of key activities; through daily monitoring of observing and reporting practices in public areas; by tracking and sharing information on social and mass media; mapping rumours and misinformation in the field and among communities; and by identifying queries and challenges faced by communities and reporting them daily through a tool developed for this purpose.

UNICEF compiles the feedback and data and utilises Talkwalker to conduct manual analysis to identify and verify the feedback and develop analysis reports. Talkwalker is a social media analytics platform that uses artificial intelligence to monitor and analyse online text in real-time across social networks, news websites, and blogs in a number of different languages (Ahmed, Martin, Towl, & Haussegger, 2021; Talkwalker, 2021). After verification, the queries and misconceptions are documented and shared with the MoH in a report along with a list of community concerns where answers and key messages are developed, cleared by a WHO team and converted into social media posts in a timely manner to ensure that all concerns and questions are answered to reduce the possibility of rumour-spreading. The use of Talkwalker is a continuous cycle of monitoring, development of targeted key messages, and the collection and verification of new queries.

As of June 2021, through partners' social media platforms, more than five million people have been reached through Q&A posts and 64,256 people have been engaged (through comments, likes and shares).

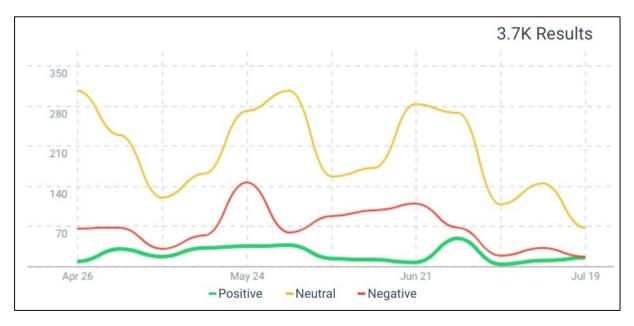


Figure 1: Talkwalker Data - Social Media Sentiments of a Vaccine Over Time

Figure 1 shows the positive, neutral, and negative sentiments on social media towards a COVID-19 vaccine thought to cause blood clots over an 85-day period (26 April to 19 July). Reports of linkages between the vaccine and blood clots began in early April. Shortly thereafter, Denmark stopped using the vaccine on 14 April and negative sentiments surrounding the vaccine were expressed on social media in Jordan. Over time, as this data was used to develop key messages in response to the negative sentiments to get factual information to the public in a timely manner, these negative sentiments towards vaccines decreased.

Discussion and Next Steps

The RCCE COVID-19 vaccination interventions in Jordan around youth volunteer activities, engaging frontline workers, and responding to the community align with global guidance and highlight the importance of collaboration and coordination across partners and sectors as well as strong government leadership. In alignment with global guidance and best practices, Jordan's approach is dynamic, community-centred, evidence-based and builds on existing initiatives.

Before Jordan's MoH launched the national COVID-19 vaccination campaign and vaccinations were administered, a study surveying 1,000 Jordanians showed that only 44% of respondents were willing to get the COVID-19 vaccine (Sallam, et al, 2021) and 56% were unwilling. Women comprised 65% of the unwilling group (Sallam, et al, 2021). Indeed, initial vaccination uptake in Jordan was low and remained so until the end of February 2021, soon after the first of the series of RCCE interventions, COVID-19 Vaccination Awareness Sessions for partners were implemented (figure 2). The number of people vaccinated daily increased after the implementation of each intervention (figure 2). A survey conducted in March – April 2021 of 1,000 Jordanians before and after implementation of the interventions described above, showed an increase of almost 20 percentage points (75%) of people willing to take the vaccine (Ipsos, 2021 April). The percentage of women willing to get vaccinated more than doubled from 35% to 74% (Ipsos, 2021 April). Though COVID-19 vaccination rates increased throughout the implementation of the interventions highlighted in this report, there are interventions and efforts beyond this report and beyond

RCCE activities that have been implemented, so it is difficult to directly link the increase in vaccination rates solely with these interventions.

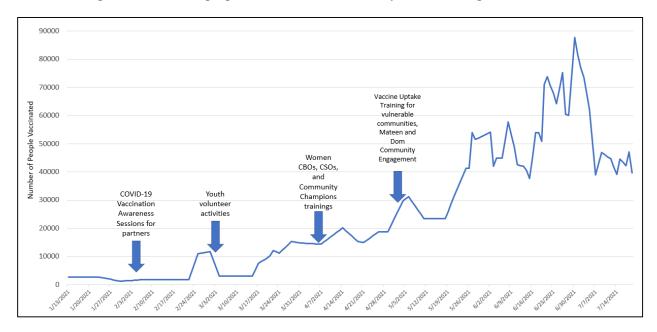


Figure 2: Number of people in Jordan vaccinated daily and the timing of interventions

Figure 2 shows the number of people vaccinated against COVID-19 in Jordan daily from the administration of the first vaccine on 13 January 2021 to 19 July 2021 overlayed with the start of implementation of the interventions highlighted in this report.

Direct attribution of improved vaccination rates to the interventions described here is difficult to test, as these are only part of Jordan's overall COVID-19 strategy. However, the increased numbers in those registered by youth volunteers, CSOs, CBOs, CHC and community champions through various outlined sessions and interactions, as well as the decrease in negative sentiments in social media which have been addressed through tailored key messages, reasonably suggests that RCCE has been an influential component of Jordan's overall strategy. As we move forward, more studies will be necessary, especially around COVID-19 second dose dropouts, vaccinations in hard-to-reach communities, gender-related barriers to vaccinations and people reporting side effects.

General information and misinformation spread more quickly now than at any other point in history due to the omnipresence of social and other media. Jordan's COVID-19 National Campaign has remained flexible to quickly respond to country and community needs. As COVID-19 persists into its third year, mainstreaming COVID-19 interventions within existing programmes will be important to increase efficiency and decrease cost, and the national strategy will need to continue to evolve and localize actions using this dynamic approach in response to the evolving nature of COVID-19.

Acknowledgements

We thank all frontline workers, managers, community workers and volunteers of all organizations in Jordan mentioned in this manuscript who received and conducted training and interact with communities daily that make the work highlighted in this report successful. We would also like to thank Abeer Mowaswas and the Hashemite Kingdom of Jordan.

References

- Ahmed, A., Martin, J., Towl, D., & Haussegger, Z. (2021). Risky drinking social worlds in Victoria: A social media analysis. Swinburne University of Technology and Access Health & Community. https://researchbank.swinburne.edu.au/file/3a857f9d-f27b-4a3d-ae8d-737cbc2bd8fd/1/2021-ahmed-risky drinking social.pdf
- Al-Junaidi, L. (2021, January 13). Jordan begins COVID-19 vaccine rollout: Country approved both Pfizer-BioNTech and China's Sinopharm coronavirus vaccines. Anadolu Agency. https://www.aa.com.tr/en/latest-on-coronavirus-outbreak/jordan-begins-covid-19-vaccine-rollout/2108497#
- Byrd, B., & Smyser, J. (2020, July 17). *Lies, bots, and coronavirus: Misinformation's deadly impact on health.* Grantmakers in Health. https://www.gih.org/views-from-the-field/lies-bots-and-coronavirus-misinformations-deadly-impact-on-health/
- Centers for Disease Control and Prevention (CDC). (2021). Measles cases and outbreaks. https://www.cdc.gov/measles/cases-outbreaks.html
- Gardner, L., Dong, E., Khan, K., & Sarkar, S. (2020). Persistence of US measles risk due to vaccine hesitancy and outbreaks abroad. *The Lancet Infectious Diseases*, 20(10), 1114–1115. https://doi.org/10.1016/S1473-3099(20)30522-3
- Hatmal, M. M., Al-Hatamleh, M. A. I., Olaimat, A. N., Hatmal, M., Alhaj-Qasem, D. M., Olaimat, T. M., & Mohamud, R. (2021). Side effects and perceptions following COVID-19 vaccination in Jordan: A randomized, cross-sectional study implementing machine learning for predicting severity of side effects. *Vaccines*, 9(6), Article 556. https://doi.org/10.3390/vaccines9060556

International Monetary Fund (IMF). (2020). *Jordan and the IMF frequently asked questions*. https://www.imf.org/en/Countries/JOR/FAO

Ipsos. (2021, March). Jordanians' attitudes on COVID-19 vaccine.

https://www.ipsos.com/sites/default/files/ct/news/documents/2021-03/ipsos_-_jordanians_attitudes_on_covid-19_vaccine_-english.pdf

Ipsos. (2021, April). Jordanians' attitudes on COVID-19 vaccine.

https://www.ipsos.com/sites/default/files/ct/news/documents/2021-05/Ipsos%20-

%20Jordanians%20Attutides%20on%20Vaccine%20Wave%202%20-%20ENGLISH 1.pdf

Our World in Data. (2021). COVID-19 data explorer. https://ourworldindata.org/

Petit, V. (2019). The behavioural drivers model: A conceptual framework for social and behaviour change programming. United Nations Children's Fund (UNICEF).

- Sallam, M., Dababseh, D., Eid, H., Al-Mahzoum, K., Al-Haidar, A., Taim, D., Yaseen, A., Ababneh, N. A., Bakri, F. G., & Mahafzah, A. (2021). High rates of COVID-19 vaccine hesitancy and its association with conspiracy beliefs: A study in Jordan and Kuwait among other Arab countries. *Vaccines*, 9(1), Article 42. https://doi.org/10.3390/vaccines9010042
- Talkwalker. (2021). Consumer intelligence for the world's most impactful brands. https://www.talkwalker.com/
- The Hashemite Kingdom of Jordan, Ministry of Health. (2021a). COVID-19 Statistical report. https://corona.moh.gov.jo/en
- The Hashemite Kingdom of Jordan, Ministry of Health. (2021b). *Risk communication and community engagement COVID-19 Jordan* [Presentation]. https://documents1.worldbank.org/curated/en/353281622809623114/pdf/Revised-Stakeholder-Engagement-Plan-SEP-Jordan-COVID-19-Emergency-Response-P173972.pdf
- The Hashemite Kingdom of Jordan, Ministry of Health. (2021c). *The National Campaign (Elak w feed): National Campaign for the Prevention of COVID-19*. https://corona.moh.gov.jo/en/page/1038/ElakFeed
- United Nations Children's Fund (UNICEF). (2016). A qualitative report on children from marginalized Jordanian minority groups. https://www.unicef.org/jordan/media/1336/file/A%20Qualitative%20Report%20on%20Children%20from%20Marginalized20 Jordanian%20Minority%20Groups.pdf
- United Nations Children's Fund (UNICEF). (2020). Vaccine misinformation management field guide. https://vaccinemisinformation.guide
- World Health Organization (WHO). (2019). Ten threats to global health in 2019. https://www.who.int/news-room/spotlight/ten-threats-to-global-health-in-2019
- World Health Organization (WHO). (2021a). A year into the COVID-19 pandemic, a high speed journey: Where are we now?. https://www.who.int/docs/default-source/coronaviruse/risk-comms-updates/update51_pandemic_overview_where_are_we_now.pdf?sfvrsn=709278aa 5
- World Health Organization (WHO). (2021b). COVID-19 vaccines. https://www.who.int/emergencies/diseases/novel-coronavirus-2019/covid-19-vaccines
- World Health Organization (WHO). (2021c). WHO Coronavirus (COVID-19) dashboard. https://covid19.who.int/
- Yale Institute for Global Health & United Nations Children's Fund (UNICEF). (2020). *Vaccine messaging guide*. https://www.unicef.org/media/93661/file/Vaccine messaging guide.pdf