

## A Closer Look at the Middle Eastern Respiratory Syndrome (MERS-CoV) Outbreak in Saudi Arabia

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### Introduction

In the last three years, particularly since September 2012, Saudi Arabia has been suffering from an outbreak of a newly emerged and dangerous member of the Coronavirus family. The harmful effects of this virus are similar to those of the virus that broke out in China in 2003 and killed around 774 people worldwide [1]. This new virus was named Middle Eastern Respiratory Syndrome (MERS-CoV) because of the geographic area where it emerged and the fact that it affects the respiratory system and leads to pneumonia. In the worst-case scenario, it poses a high risk of respiratory failure, especially for elderly people and those suffering from chronic diseases, such as cardiovascular diseases, diabetes, renal failure, pulmonary diseases and immunocompromised individuals. Therefore, the World Health Organization (WHO) has repeatedly and strongly cautioned against direct contact for those vulnerable people with animals, especially camels, as a potential source of infection, when visiting areas where the virus is possibly circulating, such as farms and markets [2].

Despite significant efforts by the Ministry of Health (MOH) in Saudi Arabia—in collaboration with international institutions and partners—to combat and contain the spread of the virus, Saudi Arabia has continued to report occasional cases over the last three years. According to a WHO report from June 2015, Saudi Arabia has registered 1,030 cases of MERS-CoV infection to date, with a sharp increase over the years. The virus has successfully crossed the boundaries of Saudi Arabia to 25 other countries in the Middle East, Europe, Asia, Africa and even North America, with varying numbers of cases over the years [3]. Interestingly, most of these countries have successfully contained the spread of the virus and protected their populations, using international guidelines and standards in controlling and managing such epidemics.

The complex situation of the MERS-CoV outbreak in Saudi Arabia raises critical questions: What factors have hindered Saudi Arabia from controlling the growing incidences of MERS-CoV infections? Why have the international guidelines for the management of such epidemics worked successfully in other countries (such as the recent successful example of a MERS-CoV outbreak being contained in South Korea, which has 165 positive cases) and not in Saudi Arabia? The current situation may prompt a naïve person to simply say that Saudi Arabia has failed to successfully deal with MERS-CoV; however, this is not the case. Saudi Arabia has spent millions of dollars on preventive plans, public education, healthcare workers' education and strict infectious disease management. In this article, we will address these two questions using the lens of Saudi culture. Unfortunately, no sociological studies have been conducted thus far to understand the role of culture in exacerbating the situation in order to suggest more

culturally sensitive solutions. From our perspective, local culture, beliefs and traditions have played a significant role in the spread of the virus. Therefore, we have framed our arguments around three main areas: camel and camel products as the primary source of infection, community-acquired infection and hospital-acquired infection.

One of the controversial cultural issues revolves around the source of the virus. Scientists believe that MERS-CoV first originated in bats [4] and was transmitted to humans through an intermediary animal, such as the dromedary camel [5,6]. Although this is the strongest available evidence, thorough epidemiological investigations are needed to back up this evidence. This is important because basically if it is true, it would pose serious challenges to any plan that intends to eradicate the source, like what happened in similar epidemic outbreaks such as avian flu. However, the Saudi public doubts scientists' opinions about this issue because of the special place of the camel in Saudi culture. There is a strong historical relationship between the Saudi people and camels, which started thousands of years ago when they were the only means of survival in the desert of the Arabian Peninsula. To most Saudis, camels are not just an animal or an ordinary pet; they have been regarded as the best companion and a symbol of tribal pride. It is not surprising to see such an intimate relationship with camels, simply because of the harsh nature of the desert in Saudi Arabia, with its unsteady and extreme weather and lack of natural resources such as food and water, which dictates strict rules for survival.

In many Arabic proverbs, the camel is a sign of power, strength and patience. In addition, the camel is regarded as one of God's miracles in the creation of animals. There are also some cultural beliefs that have developed over the years around the significance of camel's milk, meat and even urine in curing many diseases, especially those considered incurable, such as cancer. So, camels are an invaluable part of the heritage of the Saudi people, which has prompted many of them – in contemporary life – to raise camels and regard them dearly. For example, there is an annual gathering and contest for camel lovers and tribal leaders where they show off their camels to the organising committee and then the judges announce the winners for best camels. Possession of camels is also a significant indicator of wealth, as some are worth hundreds of thousands of US dollars. Therefore, Saudi tribes fiercely refuse to stigmatize the source of their pride, joy and wealth. This was observable when the Saudi Ministry of Health attempted to educate the public about camels being responsible for the spread of the virus – it created an outcry. Camel owners denounced the MOH's announcement as horrible lies to cover up its failure to contain MERS-CoV. They even started to upload myriads of videos showing them kissing their camels and breathing camel breathes in an attempt to

refute the MOH's claims. It is not that easy to tamper with what Saudi culture idolizes as its center of pride.

Another factor that most likely has contributed to community- and hospital-acquired infections in Saudi Arabia is the way cultural teachings influence people's perceptions of risk. People around the world perceive risk differently due to differences in their standards of assessment and evaluation and this determines their behaviour and actions. For example, educated people/experts in a certain field tend to measure risk based on probability assessments, statistics and annual fatalities, whereas most ordinary people evaluate risk based on their knowledge, beliefs, perceived benefits and familiarity [6] as well as cultural teachings, which influence the manner in which they attach meanings to things. For example, one of the Saudi cultural values is strong ties among family members, relatives and friends, which may prompt people to take extremely risky steps for the benefit of those close to them, even if it leads to grave danger. Something that happened a few years ago can exemplify the extent of close ties within the Saudi social fabric: all the sisters within a family and their female cousins were killed trying to rescue one of the sisters, who were accidentally trapped by a collapsed high-voltage power line due to a thunderstorm. Regardless of their understanding of the danger to their lives, they attempted to rescue their relative. Something similar can be seen when a family member is infected with MERS-CoV. Nothing will stop family members, relatives and friends from visiting and caring for their beloved patient.

From our perspective, if we want people to accept and respect our message as healthcare providers, educators and scientists, we need to

recognize and respect cultural beliefs and convey our message in a culturally appropriate way. Saudi policymakers and international consultants should take into their account the Saudi public's reaction regarding these culturally rooted matters and values before making a decision, so they can gain public credibility. Scientists should share their research findings with the public in simple language that can be understood by people with different levels of education. It is also imperative to launch a comprehensive community education program about MERS-CoV, coupled with continuous camel screening by the Saudi Ministry of Agriculture and the proposing of culturally sensitive solutions.

## References

1. World Health Organization (2004). Summary of probable SARS cases with onset of illness from 1 November 2002 to 31 July 2003.
2. World Health Organization (2015). Middle East respiratory syndrome coronavirus (MERS-CoV): Summary and Risk Assessment of Current Situation in the Republic of Korea and China – as of 19 June 2015.
3. World Health Organization (2015). Middle East respiratory syndrome coronavirus (MERS-CoV).
4. Drexler JE, Corman VM, Drosten C (2014) Ecology, evolution and classification of bat coronaviruses in the aftermath of SARS. *Antiviral Research* 101: 45–56.
5. Wit Ed, Munster VJ (2013) MERS-CoV: the intermediate host identified? *Lancet Infectious Disease* 13: 827-828.
6. World Health Organization (2014) Middle East respiratory syndrome coronavirus (MERS-CoV).