

# Knowledge, attitudes and practices with regard to prophetic medicine during the COVID-19 pandemic in Saudi Arabia

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**Abstract. – OBJECTIVE:** The current study explores the impact of Prophetic medicine's knowledge, attitudes, and practices on the Saudi population during the COVID-19 pandemic.

**SUBJECTS AND METHODS:** This study used a web-based cross-sectional design. A self-selected nonprobability sampling technique was utilized to recruit social media users in Saudi Arabia aged  $\geq 18$ .

**RESULTS:** Four statements were used to evaluate participants' knowledge of the role of prophetic medicine in preventing and treating COVID-19. The participants had significant levels of knowledge, with an average of 90.3% correct answers. They strongly agreed with prophetic advice, including quarantine, travel bans and hand washing to prevent COVID-19 infection, with a mean of 4.3. In addition, the participants followed prophetic advice, including walking for half an hour, keeping social distance, wearing masks, and taking vaccines to prevent COVID-19 infection, with a mean of 4.2.

**CONCLUSIONS:** The current study was conducted to evaluate the knowledge, attitudes, and practices of Muslim residents of Saudi Arabia concerning prophetic medicine during the COVID-19 pandemic. The study revealed that participants had good knowledge of prophetic medicine, including the use of natural products such as honey, ginger, garlic, and olive oil, as well as herbal products such as black seeds, and practices such as cupping. The study also showed that participants strongly believed that COVID-19 preventative measures – including quarantine, travel bans, and handwashing – were introduced by prophetic medicine. Practices including self-isolation, hand washing, and travel bans help prevent, treat and control diseases. They assist in maintaining good health and developing resistance to diseases.

*Key Words:*

KAP, Prophetic medicine, COVID-19, Saudi Arabia, Knowledge, Attitudes and practices.

## Introduction

A novel coronavirus disease (COVID-19) was first identified in December 2019 in Wuhan, China, when several pneumonia cases of unknown cause were reported<sup>1,2</sup>. The World Health Organization declared the virus a pandemic worldwide in March 2020<sup>3</sup>. Countries around the globe have taken preventative measures to control the spread of the virus. These measures included quarantine, social distancing, mask-wearing, locking down cities, and travel bans between cities and countries<sup>4,5</sup>. Saudi Arabia followed the same precautionary efforts to control the virus outbreak. The Ministry of Health initiated mass vaccination in Saudi Arabia to achieve herd immunity<sup>4</sup>. However, despite the efforts made by governments, no cure was available for the COVID-19 disease. Locals tended to seek herbal medicine and social commentary in the Middle East to boost immunity and prevent COVID-19 infection. For example, a recent cross-sectional study<sup>3</sup> in Saudi Arabia concluded that using herbal medicine and dietary supplements was prevalent among the general population during the COVID-19 pandemic. Another study<sup>6</sup> suggested that TaibUVID nutritional supplements (*Nigella sativa*, chamomile and natural honey) were beneficial as prophylaxis and treatment for the COVID-19 disease.

The beliefs and behaviors of Muslim populations are greatly influenced by Islamic guidance, including that related to health and nutrition aspects<sup>6</sup>. Prophetic medicine, or “Tibb Al-Nabawi,” has been widely practiced by the Saudi population<sup>7</sup>. Prophetic medicine has been defined as “the total authentic Hadith narrated by the Prophet. It includes remedy recipes by which the Prophet, was cured or he called people to be cured with. Furthermore, it includes recommendations rele-

vant to human health in the conditions of life, including eating, drinking, housing, and marriage. It comprehends legislations related to medication, medicine in practicing the profession, and the guarantee of the patient in the perspective of Islam<sup>7</sup>.

In his daily life, the Prophet Mohammed set broad guidelines for the use of household remedies (like honey) and herbal remedies (like the black seed or *Nigella sativa*). This knowledge concerning herbal remedies was verified later through scientific experiments and clinical trials<sup>8</sup>. The *Nigella sativa* seed, and its oil were considered a preventive measure against COVID-19. The bioactive compounds of *Nigella sativa*, such as thymoquinone and  $\alpha$ -hederin, were tested pre-clinically and clinically for drug development and efficacy to control the COVID-19 pandemic<sup>9</sup>. The practice of cupping (Hijama) is a known tradition of the Prophet Mohammed and is extensively reported<sup>10</sup> in a wide range of authentic hadiths.

Several recent studies<sup>11-13</sup> investigated the impact of public awareness, dietary intake, habits, knowledge, activities and lifestyle among people in different areas of the world and its correlation to the COVID-19 pandemic. Nevertheless, nothing has been reported about the influence of prophetic medicine during the pandemic in the Kingdom of Saudi Arabia. The current study explores the impact of prophetic medicine's knowledge, attitudes, and practices on the Saudi population during the COVID-19 pandemic.

## Materials and Methods

### Study Design

This study used a web-based cross-sectional design.

### Population and Setting

The study was conducted to evaluate the knowledge, attitudes, and practices of the general Saudi population regarding the use of prophetic medicine during the COVID-19 pandemic. The online data collection took place between September and October 2021. The total population of Saudi Arabia was 34,218,169 in mid-2019, according to the Saudi General Authority for Statistics 2019.

### Sample Size and Sampling Procedure

A self-selected nonprobability sampling technique was utilized to recruit social media users in Saudi Arabia aged  $\geq 18$  years. The sample size was calculated based on the total number of the Saudi

population (34,218,169) and with a 95% confidence interval. Using a Raosoft (Seattle, WA, USA) sample size calculator, the minimum sample size was set to 385. The online questionnaire was designed using Google Forms and was distributed via social media platforms, i.e., WhatsApp, Twitter, and Instagram. The invitation letter was sent via WhatsApp groups and was posted on some national community groups on Instagram. The invitation letter explained the study's rationale and the time needed to complete the questionnaire. Participants were requested to distribute the questionnaire further among social networks. A total of 588 participants were recruited.

### Data Collection Tool

An online questionnaire was adapted from a previous study<sup>14</sup> and aimed to collect data about the population's knowledge, attitudes, and practices regarding the use of prophetic medicine during the COVID-19 pandemic. The questionnaire consisted of four sections. The first section explored participants' demographics, such as the region of residency in the KSA, gender, age, educational level, and monthly income. The second section was designed to investigate their knowledge of prophetic medicine that could be utilized for the prevention of COVID-19, the source of the relevant information, and the use of herbal medicines for protection, as well as their sources. The third section investigated attitudes regarding the use of prophetic medicine in preventing COVID-19. The fourth section determined the practices related to prophetic medicine. The data collection was piloted with 10 residents of the Asir region who were representative of the target population to determine the language accuracy and the questionnaire structure. The results of the pilot study were not included in the main results. The questionnaire was initially prepared in the English language and then translated into the Arabic language. Back translation was undertaken by translating the Arabic version of the questionnaire back into English to ensure language validity. The study's authors, who are bilingual English/Arabic speakers, conducted the back translation. The survey was distributed in Arabic.

### Statistical Analysis

The collected data were cleared, entered, and analyzed using the Statistical Package for Social Sciences (SPSS) version 26.0 (IBM Corp., Armonk, NY, USA) for Mac. Demographic and

background information were described in terms of frequencies. The knowledge section (4 items), the attitudes section (4 items) and the practices section (5 items) used a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Scale items were categorized into themes. The distribution of the scale was presented in percentages, using mean and SD. The internal consistency and reliability of the scales were assessed using Cronbach's alpha coefficient, with the minimum recommended level being 0.70.

### **Ethics Approval**

Ethical clearance was given by the Ethical Committee of Scientific Research, King Khalid University ECM# 2022-604. In addition, written informed consent was obtained online from all participants.

## **Results**

The participants' demographics has been shown in Table I. Around two-thirds (66.4%) of participants were between 18 and 30 years old, and the vast majority were females (84.6%). Two-thirds (63.6%) had a bachelor's degree, and (23.4%) had graduated from a high school. The Saudi Ministry of Health was the prime source of information related to COVID-19 (64.2%), followed by the World Health Organization (19.3%). More than half of the participants (57.5%) were from the southern region of Saudi Arabia. Most participants (70.8%) had not been infected with COVID-19, and almost all had received the vaccine (95.9%).

Four statements were used to evaluate participants' knowledge about the role of prophetic medicine in the prevention and treatment of

**Table I.** Demographics and background information.

<b>Age</b>	<b>Number of participants</b>	<b>% of responses</b>
18-30 years old	392	66.4
31-40 years old	102	17.3
41-50 years old	57	9.7
>50 years old	39	6.6
Gender		
Female	499	84.6
Male	91	15.4
Education		
High school	138	23.4
Bachelor	375	63.6
Postgraduate	34	5.8
Others	43	7.3
Region in Saudi Arabia		
Northern Region	30	5.1
Southern Region	339	57.5
Middle Region	118	20
Eastern Region	42	7.1
Western Region	61	10.3
Source of information about COVID-19		
World Health Organization	114	19.3
Saudi Ministry of Health	379	64.2
Social media, e.g., WhatsApp, Facebook etc.	60	10.2
Media, e.g., TV programmes, radio, newspapers etc.	37	6.3
Previous COVID-19 infection		
Yes	172	29.2
No	418	70.8
Received COVID-19 vaccine		
Yes	566	95.9
No	24	4.1

Values are the means±SEM. PGZ: pioglitazone; RVT: resveratrol; FER: food efficiency ratio (bodyweight change/100 g food intake); liver index: liver weight (g)/100 g final body weight. Values are significantly different at  $p < 0.05$ . a significantly different from non-diabetic control, b significantly different from diabetic control.

**Table II.** Knowledge of complementary and alternative medicine, including prophetic medicine, during the COVID-19 pandemic in the KSA.

Statement	Indications		Total <i>p</i> -value
	% Of true answers	% Of false answers	
1. The black seed and ginger are known in prophetic medicine to boost the body's immunity and protect against respiratory tract infections.	95.4 (562)	4.6 (27)	<0.001
2. Garlic and olives are rich in vitamins and minerals which help the body fight the coronavirus.	79.3 (467)	20.7 (122)	
3. Honey is mentioned in Hadith as a remedy to many diseases as it possesses an antimicrobial effect.	95.9 (565)	4.1 (24)	
4. Hijama removes toxins and other waste materials from the blood.	90.7 (534)	9.3 (55)	

**Table III.** Attitudes to complementary and alternative medicine, including prophetic medicine, during the COVID-19 pandemic in the KSA.

Statement	Mean	Standard deviation	Skewness
1. I believe that quarantine during the COVID-19 pandemic followed a piece of prophetic advice.	4.1	1.1	-1.2
2. I am aware that a travel ban is prophetic teaching.	3.7	1.2	-0.6
3. I am convinced that there is a cure for every disease, as the Prophet Mohammed mentioned that there is no disease that Allah sends without sending a cure for it.	4.7	0.61	-2.5
4. Preventive measures, such as hand washing, were among the Prophetic Hadith for controlling pandemics: "Cleanliness is half of faith".	4.6	0.65	-2.3

COVID-19 disease. The participants had significant levels of knowledge, with an average of 90.3% correct answers ( $p < 0.001$ ). The result has been included in Table II.

Table III showed the distribution of scores for the four statements regarding participants' attitudes to prophetic medicine during the COVID pandemic. The responses ranged from 1 (strongly disagree) to 5 (strongly agree). Most of the items were skewed towards strongly agree (5), indicating that participants strongly agreed with prophetic advice, including quarantine, travel ban and hand washing in the prevention of the COVID-19 pandemic, with a mean of 4.3.

The distribution of scores of the five statements about participants practicing prophetic medicine during the COVID pandemic has been shown in Table IV. The responses ranged from 1 (never) to 5 (always). Most of the items were skewed towards always (5), indicating that participants

always followed the prophetic advice, including walking for half an hour, maintaining social distance, wearing a mask, and taking the vaccine to prevent COVID-19 infection, with a mean of 4.2.

Table V showed the distribution of the variables being investigated. These scales are treated as continuous variables ranging from 1 (strongly disagree) to 5 (strongly agree) for attitude and 1 (never) to 5 (always) for practice. The mean values of the overall scales- attitudes- were and practices 4.3 and 4.2, respectively. All scales had a Cronbach alpha coefficient of 0.7, indicating inter-item reliability.

## Discussion

Saudi Arabia has been affected by the COVID-19 pandemic as much as the rest of the world<sup>2,5,13</sup>. Many national studies<sup>15-17</sup> have been conducted to

**Table IV.** Practices of complementary and alternative medicine, including prophetic medicine, during the COVID-19 pandemic in the KSA.

Description of scale	Distribution of responses (%)					Mean	SD	Skew	Cronbach alpha
	<1	<2	<3	<4	<5				
Attitudes	0.2	0.5	7.5	37.2	100	4.3	0.69	-0.99	0.7
Practices	0.2	2	7.8	38.4	100	4.2	0.72	-1.1	0.7

assess the effects of the outbreak on various aspects, such as health, healthcare systems, education, and economics. The local literature discussed the physiological impacts of COVID-19 and its preventive measures on people and assessed their coping mechanisms, especially before the vaccination was made available<sup>5,14</sup>. Although Islamic practices were affected as a result of the COVID preventative measures, including a ban on prayers in mosques, visiting the holiest sites in Mecca and Madinah, and performing pilgrimage<sup>1,4</sup>, the Muslim populations used religion, beliefs and spirituality as coping mechanisms during the outbreak<sup>18</sup>. The current study was conducted to evaluate the knowledge, attitudes, and practices among Muslim residents of Saudi Arabia regarding prophetic medicine during the COVID-19 pandemic.

The study revealed that participants had good knowledge of prophetic medicine, including natural products such as honey, ginger, garlic, and olive oil, as well as herbal products, such as black seeds and practices such as cupping<sup>10,19,20</sup>. Some natural products and plants were used as medicine to cure various illnesses. Some of the natural products contain bioactive compounds with antiviral activity, boosting immunity and helping prevent and treat COVID-19<sup>10</sup>. In addition, the use of Al-Hijamah, or “wet cupping,” has been proven to clear the blood and tissues of certain patho-

gens<sup>19,21</sup>. Since Muslims have strong beliefs about the benefits of using these products and practices in fighting infections, COVID-19 health awareness companies and educational programs could incorporate prophetic medicine to enhance desirable health outcomes.

The study also showed that participants strongly believed that preventative measures for COVID-19, including quarantine, travel bans and handwashing, were introduced by prophetic medicine. Therefore, it has been shown<sup>22</sup> that self-isolation provides comfort for the sick individual and protects society from contagious diseases. Moreover, handwashing is considered the first line of defense against contagious and infectious diseases. Muslims regularly practice it in preparation for prayers, known as “wuḍū,” following the prophetic actions of “Sunnah”. These practices help to prevent, treat and control diseases, maintain good health and develop resistance to diseases<sup>23</sup>. Social distancing is recommended to prevent the contagion. National and international disease control centers recommended all these precautionary measures during the COVID pandemic.

### Conclusions

The current study was conducted to evaluate the knowledge, attitudes, and practices of Mus-

**Table V.** Distribution and internal consistency of overall scales.

Statement	Mean	Standard deviation	Skewness
1. I walk daily for at least half an hour to increase the body’s immunity, as per the instructions of prophetic medicine.	4.1	0.95	-0.85
2. I sleep for a sufficient time daily to boost my body’s immune system, according to prophetic medicine.	4.2	0.89	-0.97
3. I keep social distancing, as the Prophet Mohammed instructed that those with contagious diseases should be kept away from healthy ones.	4.3	0.85	-1.5
4. I wear a face mask as per Prophet Mohammed’s instruction that one must cover one’s face with the hands or a garment when sneezing.	4.3	0.91	-1.5
5. I took the COVID-19 vaccine, as the Prophet Mohammed advised us not to cause harm or return harm.	4.2	1.0	-1.4



lim residents of Saudi Arabia with regard to prophetic medicine during the COVID-19 pandemic. The study revealed that participants had good knowledge of prophetic medicine, including natural products such as honey, ginger, garlic, and olive oil, as well as herbal products such as black seeds and practices such as cupping. The study also showed that participants firmly believed that COVID-19 preventative measures, including quarantine, the travel ban and handwashing, were introduced by prophetic medicine. Practices including self-isolation, hand washing, and the travel ban help in the prevention, treatment, and control of diseases, maintain good health and develop resistance to diseases.

#### Ethics Approval

This study was approved by the Ethical Committee of Scientific Research, King Khalid University ECM# 2022-604.

#### Informed Consent

Written informed consent was obtained online from all the participants.

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#### Authors' Contribution

All authors contributed equally to the conception and design of this study, collection, and interpretation of data, manuscript editing. All authors have given their approval to submit.

#### Availability of Data and Materials

The datasets generated during and/or analyzed during the current study are available from the corresponding author upon request.

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#### Conflict of Interest

Authors have no conflicts of interest to declare.

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