

# Omicron Virus Risk Perception And Information Needs Among The Public In Saudi Arabia

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## ABSTRACT

**Introduction:** The Omicron variant is a highly infectious and transmissible form of COVID-19, even more infectious than the Delta and Beta variants. This study aimed to investigate the risk perceptions and community information needs concerning the Omicron pandemic in Saudi Arabia. **Methods:** This descriptive, cross-sectional study recruited 525 people from Saudi Arabia utilizing the convenience sampling technique. The participants completed an electronic questionnaire that was adopted and modified to assess their general knowledge about Omicron infection; its perceived seriousness; their own vulnerability, self-efficacy, motivation, and hindering factors; and the information needs of the population. **Results:** Most of the participants had not contracted COVID-19 previously and were vaccinated with at least two doses. Almost two-thirds of the participants perceived Omicron as a dangerous infection. On questions of self-efficacy against Omicron, most of the participants supported preventive measures such as wearing masks and indicated that they would follow such measures if they were advised to do so. A sense of responsibility toward one's health and preventing Omicron infection transmission and the perception of Omicron as a serious infection were among the main reasons participants gave for abiding by preventive measures. The largest proportion of participants reported that they need information regarding their susceptibility to Omicron infection and the incubation period of the virus and that they prefer to receive updates from the national authorities of the country, such as the Ministry of Health and public health services. **Conclusion:** People in Saudi Arabia expressed average to high perceptions of risk toward the Omicron virus, and most of them indicated their willingness to carry out preventive measures because of a feeling of responsibility toward their health and the health of others around them. Psychoeducation and mental health support are advised for the general population to decrease the psychological impact of COVID-19's different variants.

**Keywords:** COVID-19, Information needs, Omicron, Risk perception, Saudi Arabia.

## Introduction

Since it was initially identified in 2019, the novel coronavirus has swiftly spread around the world. Over 330 million people globally have been infected with different coronavirus variants as of January 19, 2022, resulting in over 5.9 million deaths. The coronavirus's continual evolution poses a significant obstacle to its prevention and containment (Karim & Karim, 2021). On November 25, 2021, in Gauteng province, South Africa, the B.1.1.529 (Omicron) form of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) was discovered for the first time (Callaway, 2021). Omicron has emerged as the most common strain of COVID-19. According to preliminary research, the Omicron virus's potential spread has risen considerably (Saxena et al., 2022). Because of its projected high transmissibility and ability to resist the neutralizing antibodies elicited by vaccination or natural infection with the wild-type virus, the World Health Organization has designated Omicron as a variant of concern (World Health Organization, 2021). The Omicron variant has alterations that suggest it may be more infectious, transmissible, and resistant to innate immunity and neutralizing antibody activity than the wild-type virus (European Centre for Disease Prevention and Control, 2021).

According to preliminary data, the median incubation period for Omicron could be as short as 2 to 3 days, compared to 5 days for the original virus. Runny nose, sore throat, headache, weariness (moderate to severe), sneezing, and night sweats are the most common symptoms of Omicron, and they are indistinguishable from the common cold. In comparison to prior variations, fever, cough, and loss of smell/taste are less common. Symptoms normally linger for a few days before disappearing completely

(Jansen et al., 2021). According to a prior study, the Omicron variant is more infectious than the Delta and Beta variants. It is also worth noting that a recent retrospective study based on population-wide epidemiological data in South Africa found a link between Omicron and an elevated risk of SARS-CoV-2 reinfection (Pulliam et al., 2022).

Efforts to restrict the COVID-19 pandemic have relied mainly on people making significant modifications to their lifestyles and their interactions with one another. Despite the high costs and the difficulties of doing so, most people have been diligent in adopting and maintaining suggested health practices (Park et al., 2020). Throughout the epidemic, however, evidence of decreased participation has arisen, particularly with regard to less habitual and more burdensome health practices (e.g., physical distancing) (Crane et al., 2021; Petherick et al., 2021).

A person's subjective evaluation of the likely negative outcomes of an event is termed risk perception (Paek & Hove, 2017). Risk perception can be separated into two categories, according to relevant studies: affective risk perception and cognitive risk perception (Alhakami & Slovic, 1994; Peters & Slovic, 1996). Affective risk perception is a type of heuristic information processing that is quick, intuitive, parallel, and spontaneous, requiring minimal cognitive effort. Cognitive risk perception, conversely, is characterized by slow, cautious, sequential, and regulated information processing that involves greater cognitive resources (Finucane et al., 2000).

Risk perception has been linked to health-protective behaviors such as mask-wearing and social separation, impacting preventive actions through heightened fear and anxiety (Serpas & Ignacio, 2021). Individuals who see infection as a high-risk

situation are more likely to pursue healthy behaviors, which minimizes the chance of infection (Cori et al., 2020). However, psychological support should be considered because risk perception can have a negative influence on those suffering a public health crisis, such as depression (Ding et al., 2020).

Risk perception is a central characteristic of many health-behavior theories. According to the protection motivation theory, protection motivation is a consequence of risk or threat assessment and coping appraisal. Threat assessment consists of estimating the hazard of contracting a disease (perceived vulnerability or susceptibility) and estimating the seriousness of a disorder or sickness (perceived severity) (Rogers et al., 1983). The personal perception of infection threat is a key issue that influences the spread of epidemics; to obtain realistic inferences, epidemiological models must consider such parameters (Colizza et al., 2006). However, increased hazard or risk perceptions may only predict defensive behaviors, particularly when human beings believe that effective responses and defensive actions are readily available (response efficacy) and when they are confident in their ability to interact and engage in such defensive actions (self-efficacy) (Brug et al., 2004; De Zwart et al., 2009).

### **Significance of the study**

At the individual, local, and global levels, risk perception is critical in determining the extent of community understanding of the pandemic's severity and the public's readiness to participate in the implementation of health-prevention measures. Furthermore, it is vital to determine the level of public awareness of the COVID-19 pandemic and its variants, specifically Omicron, owing to its rapid transmissibility. Relevant information includes people's intentions,

their ability to implement preventive measures, and their sense of self-efficacy in implementing the recommended measures. These baseline levels of information must be gathered through scientific research to determine how best to optimize community awareness through scientific interventions, media releases, and government channels. For these reasons, it is necessary to assess the risk perception and information needs of the general population.

### **Aim of the study**

This study aimed to investigate the public's risk perceptions and community information needs regarding the Omicron virus in Saudi Arabia.

### **Research question**

What is the risk perception of the Omicron virus among the general population of Saudi Arabia?

## **MATERIALS AND METHODS**

### **Research design and settings**

This study utilized a descriptive, cross-sectional research design. The participants in this study were nominated from Saudi Arabia's general population. This country was selected due to its central location in Asia and the Arab world and the presence of researchers in this country, which facilitated the data collection process.

### **Sampling**

A convenience sample of 525 individuals was recruited from the general population for this comparative study. The sample size was calculated according to the OpenEpi sample size estimation software, version 3.01 (Dean et al., 2013). A minimal sample size of 471 individuals was required to achieve a 97% confidence interval with 5% confidence

limits, 50% anticipated frequency, and a design effect value of 1.0. The sample of participants recruited in this study was increased to 525 to ensure the attainment of the targeted confidence level.

### **Data collection tool**

The data collection questionnaire consisted of two sections. The first section comprised a sociodemographic data collection sheet, which included age, gender, marital status, educational level, employment, and whether a participant suffered from any chronic diseases.

The second section was titled the “Standard questionnaire on risk perception of an infectious disease outbreak,” which was designed by the Municipal Public Health Service Rotterdam-Rijnmond in collaboration with the National Institute for Public Health and the Environment in the Netherlands (Effective Communication in Outbreak Management for Europe, 2015). This tool was designed to study the risk perceptions associated with the outbreak of infectious disease and has been used in many previous studies (Bults et al., 2014; Bults et al., 2011). The Arabic version of the questionnaire was adopted to address the Omicron pandemic. It has been used previously by (Shahin & Hussien, 2020) to investigate the risk perception of the COVID-19 outbreak in some Middle Eastern countries and uses the predominant language of the study participants in the chosen country. The questionnaire began with an introduction, which informed the respondents of the research objective and provided directions for questionnaire completion and submission. The questionnaire included questions in the following six domains:

1) Participants' knowledge of COVID-19 infection and vaccination history was assessed using the following three questions:

Have you been infected with COVID-19? Have you been vaccinated against COVID-19? If yes, how many doses of the vaccine have you received?

2) Omicron's seriousness was assessed through a single question, with responses based on a 5-point Likert scale (ranging from 1 = not at all serious to 5 = very serious).

3) Four questions were used to determine the amplitude of anxiety and the perception of vulnerability to Omicron using a 5-point Likert scale ranging from 1 to 5, with higher scores indicating greater anxiety regarding Omicron.

4) Perception of efficacy and self-efficacy in dealing with Omicron comprised 12 items that were assessed using a 5-point Likert scale ranging from 1 = certainly not to 5 = most certainly.

5) Motivating/hindering factors that affect the intention to perform preventive measures were assessed using two questions that probed the reasons underlying a participant's willingness or unwillingness to employ preventive measures. Both questions included many choices, and the participants were allowed to select up to three answers for each question.

6) The information needs assessment comprised three questions that asked which critical issues the participants wanted more information about, where they would prefer to get it, and how they would want to receive it. These questions included many options, and the participants could choose up to three answers for each one.

### **Pilot study**

Before the main study began, a pilot study was conducted to ensure that the scales were clear and that the study was feasible. To assess the usability of the data collection method and the viability of the investigation, the pilot study surveyed 10% of the estimated

required study sample. According to the results, it took an average of 10 to 20 minutes for respondents to complete the questionnaire, depending on their degree of knowledge and cooperation. The questionnaire was finalized based on the findings of the pilot study. The pilot study participants were excepted from the main study sample due to changes made to the wording of some of the questionnaire items. The pilot research was also utilized to determine the reliability of the questionnaire.

### **Validity and reliability**

A panel of five specialists in the domains of psychiatric–mental health nursing, public health, and medical-surgical nursing evaluated the questionnaire's content and face validity, both of which were found to be acceptable. A test-retest comparison was used to verify the reliability, and Cronbach's alpha was calculated to demonstrate adequate dependability (Cronbach's  $\alpha = 0.821$ ).

### **Procedure**

A questionnaire prepared in Google Forms was used to invite potential respondents to participate in the study remotely. The survey was distributed to interested participants via several apps (WhatsApp, Messenger, and Imo), and they completed it in 10 to 20 minutes, on average. The study adhered to all national data protection regulations. Before they began the questionnaire, all participants supplied informed consent and were given the option of submitting an email address to receive a summary of the study findings.

No deception was not used in the study and participants were debriefed at the end. Data was collected over 30 days (December 2021 to January 2022). The time allotted for data collection was sufficient to attain the required sample size.

### **Statistical analysis**

Statistical analysis was performed using the Statistical Package for Social Sciences (SPSS), version 23 (IBM Corp, 2015). The data are presented using descriptive statistics, such as the mean and standard deviation and the number and percentage. The mean and standard deviation have been used for continuous variables, whereas the number and percentage have been used to display categorical variables. There is no evidence of missing data, as answering each question was mandatory before participants could move on to the next question.

The data are also represented using figures and graphs such as bar graphs, histograms, and pie charts, which serve to illustrate data through simple and meaningful representations.

### **Ethical considerations**

Before data collection began, the research proposal was authorized by the ethics committee of Mohammed Al-Mana College for Medical Sciences in Saudi Arabia. Participants were also asked to grant informed consent before beginning the questionnaire after reading the study's introduction information. The questionnaire includes text about informed consent, which was provided in the online survey form. Anonymity and confidentiality were promoted through the use of survey identification numbers. The questionnaire was anonymous and thus included no personal identifiers such as names, phone numbers, or other information that may be used to identify participants or link people to the data being collected. Other than the potential inconvenience associated with the time required to engage in the study, there was no risk of discomfort to the participants, and participants did not receive any kind of compulsion or financial compensation for the

study because their participation was voluntary and undertaken with full autonomy. In conformity with the Declaration of Helsinki, all ethical norms governing medical research involving human beings were observed (World Medical Association, 2018). The authors were also given official authorization to use and alter the questionnaire (Effective Communication in Outbreak Management for Europe, 2015).

### III: Results

The findings of the current study are illustrated in the tables and graphs that follow. The study involved 525 participants

from different sociodemographic backgrounds in Saudi Arabia. **Table 1** displays their characteristics: most of the participants were not working (79%), were female (94.3%), and were single (81.9%). The age of 77.1% of the participants was between 18 and 24 years old, and the majority of the participants (87.6%) were residents of urban regions. Concerning the educational level of the participants, about half had a university education (47.6%), followed in prevalence by a secondary school education (30.5%). Finally, most of the participants had no chronic diseases (90.5%).

**Table 1: Sociodemographic characteristics of the participants (N = 525)**

| Sociodemographic characteristics  |                        | n   | %     |
|-----------------------------------|------------------------|-----|-------|
| Job-status                        | Working                | 110 | 21.0% |
|                                   | Not working            | 415 | 79.0% |
| Gender                            | Male                   | 30  | 5.7%  |
|                                   | Female                 | 495 | 94.3% |
| Age                               | 18–24 years            | 405 | 77.1% |
|                                   | 25–34 years            | 45  | 8.6%  |
|                                   | 35–49 years            | 70  | 13.3% |
|                                   | 50–60 years            | 5   | 1.0%  |
| Marital status                    | Single                 | 430 | 81.9% |
|                                   | Married                | 95  | 18.1% |
| Residence                         | Urban                  | 460 | 87.6% |
|                                   | Rural                  | 65  | 12.4% |
| Level of education                | Primary school         | 80  | 15.2% |
|                                   | Secondary school       | 160 | 30.5% |
|                                   | University education   | 250 | 47.6% |
|                                   | Postgraduate education | 35  | 6.7%  |
| Do you have any chronic diseases? | Yes                    | 50  | 9.5%  |
|                                   | No                     | 475 | 90.5% |

**Table 2** displays information regarding the COVID-19 infection and vaccination history of the participants. The findings indicate that almost four-fifths of the participants (79%) had not contracted a COVID-19 infection previously. When it came to vaccination, 92.4% of the participants reported that they

had received at least one COVID-19 vaccination. About three-fourths of the vaccinated participants (74.2%) reported that they had received two doses of the vaccine, compared to only one-fourth of the participants (24.7%) who had received the third booster dose of the COVID-19 vaccine.

**Table 2: Participants' COVID-19 infection and vaccination history**

| COVID-19 history   |         | n   | %     |
|--|---------|-----|-------|
| Have you been infected with COVID-19?                    | Yes     | 110 | 21.0% |
|  | No      | 415 | 79.0% |
| Have you been vaccinated against COVID-19?               | Yes     | 485 | 92.4% |
|  | No      | 40  | 7.6%  |
| If yes, how many doses of the vaccine have you received? | 1 dose  | 5   | 1.0%  |
|  | 2 doses | 360 | 74.2% |
|  | 3 doses | 120 | 24.7% |

**Table 3** presents data concerning the perception of susceptibility to the Omicron virus and the extent of anxiety among the participants when asked about the seriousness of the Omicron virus. The data indicate that most of the participants believed the Omicron virus was dangerous (55.2%) or very dangerous (18.1%). Furthermore, about half of the participants (46.7%) believed that they would contract the Omicron virus if they did not follow preventive measures.

Conversely, 38.1% of the participants believed that they had an average chance of contracting an Omicron infection if they were not vaccinated against COVID-19. However, the participants believed that they had an average (41.9%) to low chance (30.5%) of contracting the Omicron virus if they received the vaccine. Similarly, about two-fifths of the participants (41.9%) expressed that they were a “bit worried” about contracting the Omicron virus in the future.

**Table 3: Perception of susceptibility to the Omicron virus and extent of anxiety**

| Perceived susceptibility and anxiety toward the Omicron virus  |                      | n   | %     | mean | SD   |
|--|----------------------|-----|-------|------|------|
| How serious do you think the Omicron virus is?   | Not dangerous at all | 0   | 0.0%  | 3.87 | 0.76 |
|  | Not dangerous        | 25  | 4.8%  |      |      |
|  | Low danger           | 115 | 21.9% |      |      |
|  | Dangerous            | 290 | 55.2% |      |      |
|  | Very dangerous       | 95  | 18.1% |      |      |
| Do you think that you can contract the Omicron virus if you do not take any preventive measures?   | Absolutely not       | 10  | 1.9%  | 4.11 | 0.98 |
|  | No                   | 10  | 1.9%  |      |      |
|  | Maybe                | 135 | 25.7% |      |      |
|  | Yes                  | 125 | 23.8% |      |      |
|  | Absolutely yes       | 245 | 46.7% |      |      |
| Suppose you have not been vaccinated against the Omicron virus or the vaccine is not available. What do you think is your chance of contracting the disease in the future? | Very low chance      | 15  | 2.9%  | 3.71 | 0.95 |
|  | Low chance           | 15  | 2.9%  |      |      |
|  | Average chance       | 200 | 38.1% |      |      |
|  | High chance          | 170 | 32.4% |      |      |
|  | Very high chance     | 125 | 23.8% |      |      |
|  | Very low chance      | 55  | 10.5% | 2.72 | 1.01 |
|  | Low chance           | 160 | 30.5% |      |      |

|  |                    |     |       |      |      |
|--|--------------------|-----|-------|------|------|
| Suppose you have been vaccinated against the Omicron virus. What do you think is your chance of contracting the disease in the future? | Average chance     | 220 | 41.9% | 3.10 | 1.10 |
|  | High chance        | 55  | 10.5% |      |      |
|  | Very high chance   | 35  | 6.7%  |      |      |
| How concerned are you about contracting the Omicron virus?   | Not worried at all | 50  | 9.5%  |      |      |
|  | Not worried        | 80  | 15.2% |      |      |
|  | Bit worried        | 220 | 41.9% |      |      |
|  | Worried            | 115 | 21.9% |      |      |
|  | Very worried       | 60  | 11.4% |      |      |

The perceived efficacy and self-efficacy of the participants appear in **Table 4**. The highest mean score was recorded for statement number 12 ( $M=4.45\pm 0.8$ ), which stated that people should wear a mask during all activities outside the home as shopping, transportation, work, etc., followed in

prevalence by the perception that they will manage to carry out mask wearing if it is advised ( $M=4.39\pm 0.81$ ). Conversely, the lowest score was recorded for participants' perception that they should not meet other people indoors unless they live with them or they are part of their home ( $M=3.3\pm 1.16$ ).

**Table 4: Perception of efficacy and self-efficacy**

|   | Perceived efficacy and self-efficacy   | Absolutely not |      | No |      | Maybe |       | Yes |       | Absolutely yes |       | Mean | SD   |
|---|--|----------------|------|----|------|-------|-------|-----|-------|----------------|-------|------|------|
|   |  | n              | %    | n  | %    | n     | %     | n   | %     | n              | %     |      |      |
| 1 | Do you think that frequent hand hygiene helps to prevent the Omicron virus?                        | 5              | 1.0% | 40 | 7.6% | 120   | 22.9% | 165 | 31.4% | 195            | 37.1% | 3.96 | 1.00 |
| 2 | Do you think that wearing masks helps to prevent the Omicron virus?                                | 5              | 1.0% | 35 | 6.7% | 65    | 12.4% | 200 | 38.1% | 220            | 41.9% | 4.13 | 0.94 |
| 3 | Do you think that keeping social distance helps to prevent the Omicron virus?                      | 10             | 1.9% | 10 | 1.9% | 70    | 13.3% | 160 | 30.5% | 275            | 52.4% | 4.30 | 0.91 |
| 4 | Do you think that quarantine helps to prevent the spread of the Omicron virus?                     | 5              | 1.0% | 15 | 2.9% | 80    | 15.2% | 165 | 31.4% | 260            | 49.5% | 4.26 | 0.89 |
| 5 | Do you think that you will manage to carry out hand hygiene in the correct way if this is advised? | 5              | 1.0% | 5  | 1.0% | 70    | 13.3% | 175 | 33.3% | 270            | 51.4% | 4.33 | 0.82 |
| 6 | Do you think that you will manage to carry out masks wearing if this is advised?                   | 5              | 1.0% | 15 | 2.9% | 35    | 6.7%  | 185 | 35.2% | 285            | 54.3% | 4.39 | 0.81 |
| 7 | Do you think that you will manage to carry out social distancing if this is advised?               | 5              | 1.0% | 30 | 5.7% | 65    | 12.4% | 190 | 36.2% | 235            | 44.8% | 4.18 | 0.93 |



|    |   |    |      |    |       |     |       |     |       |     |       |      |      |
|----|---|----|------|----|-------|-----|-------|-----|-------|-----|-------|------|------|
| 8  | Do you think that you will manage to carry out quarantine if needed?  | 10 | 1.9% | 10 | 1.9%  | 55  | 10.5% | 190 | 36.2% | 260 | 49.5% | 4.30 | 0.88 |
| 9  | Do you think you should not meet other people indoors unless you live with them or they are part of your home?  | 40 | 7.6% | 85 | 16.2% | 170 | 32.4% | 140 | 26.7% | 90  | 17.1% | 3.30 | 1.16 |
| 10 | Do you think that to control Omicron, international arrivals should take a PCR test by the end of the second day after arrival and self-isolate until they receive a negative result? | 10 | 1.9% | 20 | 3.8%  | 70  | 13.3% | 170 | 32.4% | 255 | 48.6% | 4.22 | 0.95 |
| 11 | Do you think that all contacts of suspected Omicron cases should self-isolate, regardless of their vaccination status?  | 10 | 1.9% | 5  | 1.0%  | 30  | 5.7%  | 210 | 40.0% | 270 | 51.4% | 4.38 | 0.80 |
| 12 | Do you think that you must wear a mask during all activities outside the home, such as shopping, transportation, work, etc.?  | 0  | 0.0% | 15 | 2.9%  | 55  | 10.5% | 135 | 25.7% | 320 | 61.0% | 4.45 | 0.80 |

When asked about the reasons they would be willing to carry out preventive measures, as mentioned in **Table 5**, the most frequent response was the feeling of responsibility toward one's own health (19%), followed by the need to prevent the transfer of Omicron to other people (17%), and then the perception that Omicron infection can be serious (16%).

Conversely, the lowest percentage of the participants reflected that the situation does not apply to them (1%), followed by the response that they will carry out the preventive measures because they are often ill (2%), and then the perception that people around them will also carry out the preventive measures to prevent the Omicron virus (2%).

**Table 5: Reasons for willingness to carry out Omicron preventive measures**

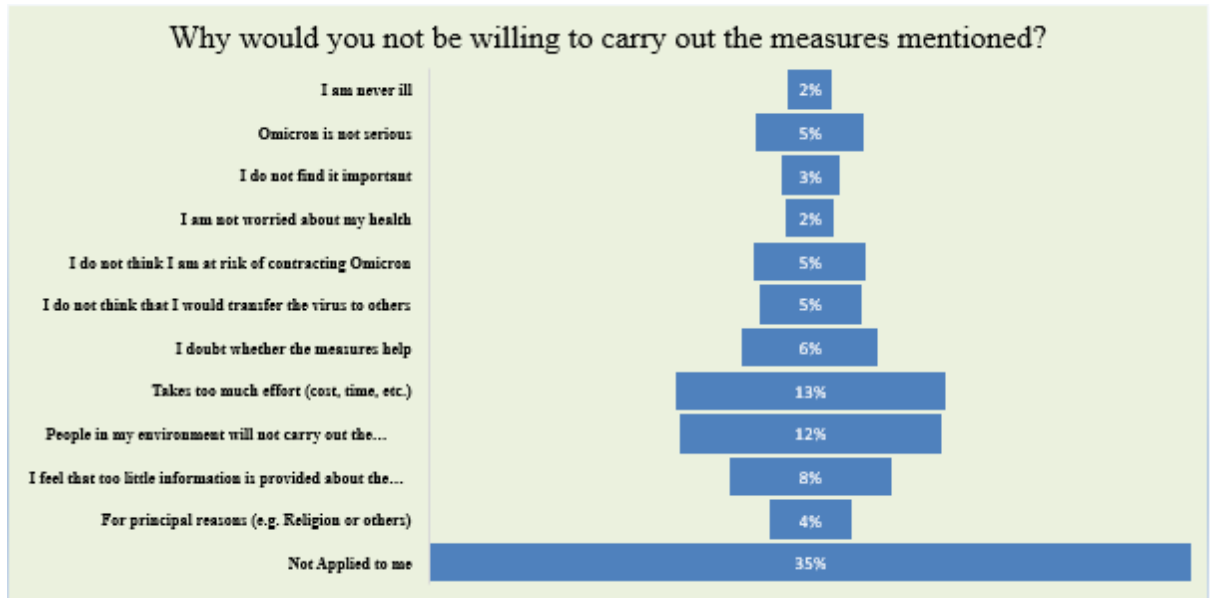
| Why would you be willing to carry out the measures mentioned? | n   | %   |
|---|-----|-----|
| I am often ill  | 20  | 2%  |
| Omicron can be serious  | 135 | 16% |
| I feel responsible for my health                              | 164 | 19% |
| I think I am at risk of Omicron                               | 56  | 6%  |
| I want to prevent myself from contracting Omicron             | 113 | 13% |
| I want to prevent the transfer of Omicron to people around me | 146 | 17% |
| I trust that the measures will help                           | 79  | 9%  |

|   |    |    |
|---|----|----|
| The authorities advise it, so I will do it                      | 71 | 8% |
| If I do not take these measures, I may regret it later          | 55 | 6% |
| Other people in my environment will also carry out the measures | 21 | 2% |
| This does not apply to me                                       | 5  | 1% |

**Figure 1** depicts the participants' responses regarding the reasons for their unwillingness to carry out preventive measures against the Omicron virus. The highest percentage of participants (35%) reported that the situation does not apply to them, meaning that they are willing to carry out preventive measures against the Omicron virus. The next reason behind their unwillingness to carry out the preventive measures against Omicron was

the effort they must exert to implement those measures, including the cost, time, and other factors (13%), followed by the perception that people around them will not adhere to the preventive measures (12%).

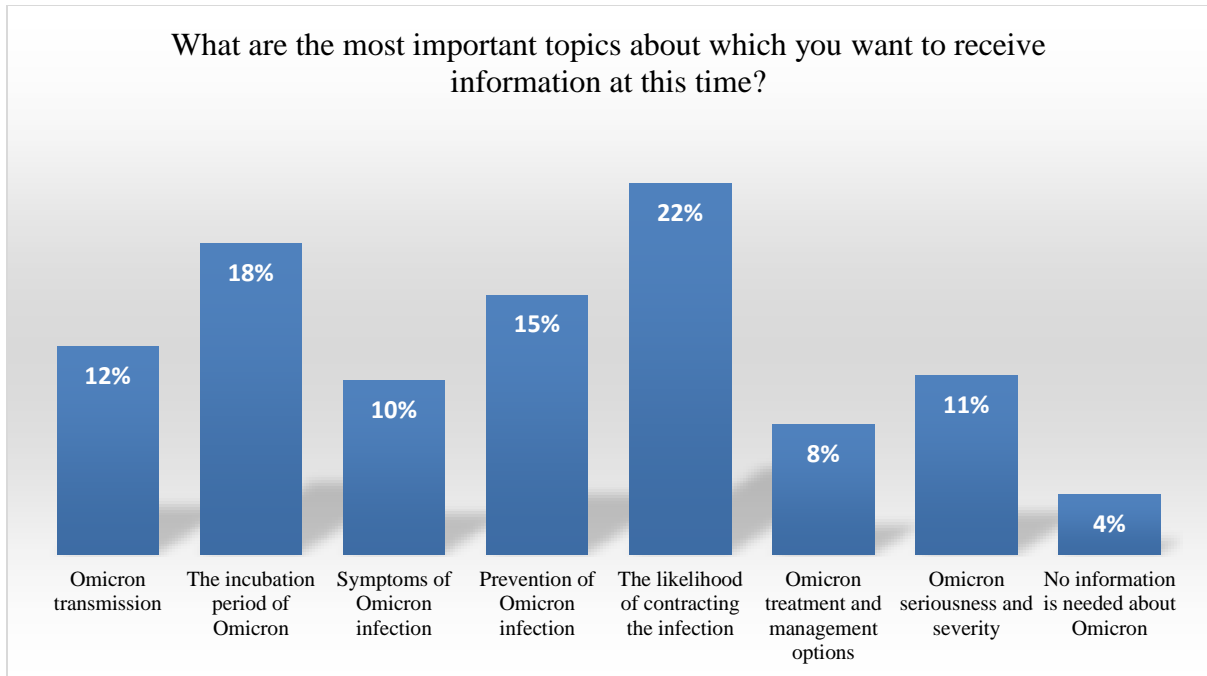
The least-mentioned reason for unwillingness to carry out the preventive measures was that participants are not worried about their health (2%) and that they never get ill (2%).



**Figure 1: Reasons for unwillingness to carry out Omicron preventive measures**

The bar chart below depicts the most important topics about which the participants would like to receive information (**Figure 2**). The greatest proportion of participants reported that they needed information about the likelihood of contracting Omicron (22%), followed by information about the incubation

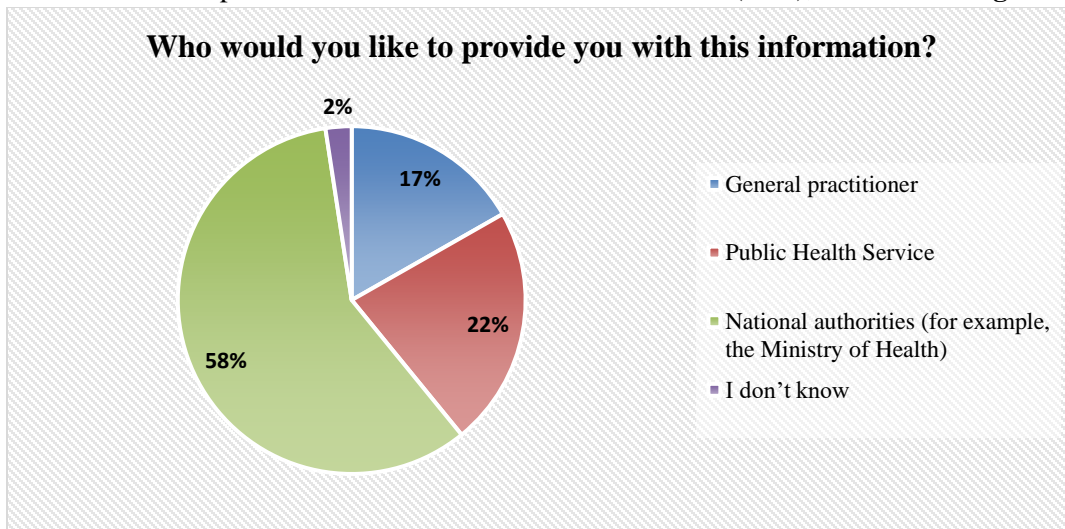
period of the virus (18%). However, the lowest percentage of participants expressed that they do not need any information (4%), followed by those who expressed an interest in information related to Omicron treatment (8%).



**Figure 2: Topics about which participants wanted to receive information**

More than half of the participants (58%) reported that they would like to receive Omicron virus updates from the national

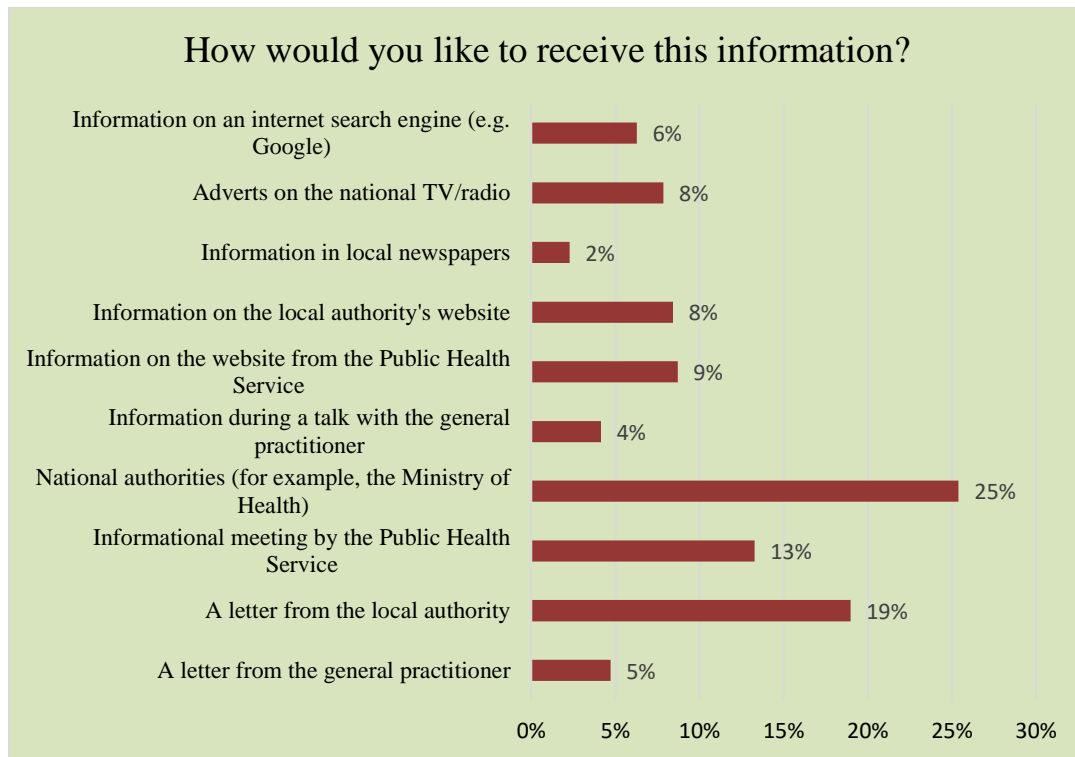
authorities in the country, such as the Ministry of Health, followed by public health services (22%), as shown in **Figure 3** below.



**Figure 3: Preferred provider of Omicron-related information**

When asked about how they would like to receive Omicron-related information, one-fourth of the participants (25%) said that they preferred to receive the information from national authorities in Saudi Arabia, such as the Ministry of Health, followed by a letter

from a local authority (19%), as shown in **Figure 4**. Conversely, the least-preferred means of receiving Omicron-related information was through the local newspaper (2%), followed by information from general practitioners (4%).



**Figure 4: Preferences for receiving Omicron-related information and updates**

#### IV: Discussion

This study aimed to investigate the public risk perceptions and community information needs associated with the Omicron virus in the Kingdom of Saudi Arabia. The findings of the current study indicate that most of the study participants received a COVID-19 vaccine. However, approximately three-fourths of the vaccinated participants reported that they had received two doses of the vaccine, compared to only one-fourth of the participants who had received the third booster dose of the COVID-19 vaccine.

This finding may be associated with the population's increased worry about infection, which may have improved their acceptance of the COVID-19 vaccine to limit their susceptibility to infection. This finding implies trust in the administration of the Kingdom of Saudi Arabia, as the government has made COVID-19 vaccination mandatory and ensured widespread, equitable access to

and distribution of vaccines that are both safe and efficacious.

Acceptability and overall perceptions of the vaccine's benefits and safety profile have had a significant impact on vaccination coverage. Lazarus and his colleagues reported that enhanced trust in government decisions was linked to a higher willingness to be vaccinated (Lazarus et al., 2021).

Similarly, the evidence indicates that in the case of COVID-19, people have a significant level of anxiety about the disease's hazards and its mutations, both in terms of their personal susceptibility to infection and the repercussions of infection. This high degree of worry is likely to lead to a high level of vaccination acceptance (Dryhurst et al., 2020).

When they were asked questions regarding their perception of susceptibility to the Omicron virus and the extent of their anxiety, as well as when they were asked

about the seriousness of the Omicron virus, most of the participants indicated that the Omicron virus was dangerous; moreover, the highest percentage of the participants believed that they would contract the Omicron virus if they did not follow preventive measures and if they were not vaccinated against COVID-19. This finding may be influenced by previous epidemic pathogen outbreaks experienced in Saudi Arabia, such as SARS and Ebola, as well as the COVID-19 virus that mutated into the Omicron variant, leading to higher global transmissibility and a greater effect on children. Receiving the COVID-19 vaccine may improve immunity, but it may not prevent reinfection with COVID-19 or its variants.

This result concurs with the previous study conducted in three countries in the Middle East (Saudi Arabia, Egypt, and Jordan), which revealed that the majority of participants viewed the COVID-19 pandemic as serious or very serious (Shahin & Hussien, 2020).

Similarly, the evidence gathered by Smith and his colleagues aligns with the present study's findings to suggest that initial coverage of Omicron's emergence had a minimal impact on public views or behavior. Days after the advent of Omicron was disclosed, there was a slight increase in COVID-19 concern and perceived danger, but these were short-lived and quickly recovered to pre-Omicron levels. In Smith et al. (2022) study, more than one-third of participants were very or extremely concerned about Omicron, with more than half of them expressing that Omicron posed a major risk to people's health; however, these percentages were quite similar to those observed for concerns about the coronavirus in general.

Similarly, a large number of individuals believed that the Omicron variant would spread more quickly and produce less severe disease than the original coronavirus. According to the evidence gathered through research, this perception appears to be correct (Petersen et al., 2022; Wolter et al., 2022).

According to some studies, a sector of the community in South Africa feared that Omicron might affect a larger number of children than prior variations. Omicron was found to be the cause of an increase in pediatric hospitalizations in early studies (Cloete et al., 2021; Torjesen, 2022).

In the result of the present study, approximately two-fifths of the participants expressed that they are "a bit worried" about contracting the Omicron virus in the future, which may be due to its milder symptoms than other variants and the widespread acceptance of vaccinations. Early research has supported these perceptions, providing hope that Omicron's clinical presentation may be milder than earlier versions. According to researchers in England, Scotland, and South Africa, Omicron reduces hospital admission risks by 15% to 80% when compared to the Delta variant (Christie, 2021).

The current study's results regarding perceived efficacy demonstrate that the highest mean score was for the statement that people should wear a mask during all activities outside the home, such as shopping, transportation, work, etc., followed by the statement that they will carry out mask wearing if it is advised. This finding may indicate participants' perceptions about the importance of taking continuous precautions to avoid infection. These findings aligned with those of a previous study conducted in Hong Kong, which recommended that people are more inclined to follow health-related rules, such as preventive measures, if they

consider themselves to have a high chance of becoming sick or if they believe the illness may have a significant negative impact (Tang & Wong, 2004). Similarly, another study conducted an international survey on SARS and other emerging infectious diseases and found that the efficacy views of people regarding SARS were more favorable in Asia, where people felt more competent in dealing with and controlling SARS and more confident than people in other countries (De Zwart et al., 2009).

Additionally, a key tactic for containing the COVID-19 pandemic consists of preventing virus transmission through healthy habits like mask use, hand washing, social distancing, and limiting social interaction by staying at home, as reported by (Jefferson et al., 2020). This method is especially crucial in low- and middle-income countries with inadequate medical and hospital resources, given the outbreak of the Omicron strain (Petersen et al., 2022).

When asked about the reasons why they would be willing to carry out the preventive measures mentioned in the current study, the participants' most frequent response was out of the feeling of responsibility toward their own health (almost one-fifth of the participants), followed by responsibility for preventing the transfer of Omicron to people around them, and then the perception that Omicron can be serious. Many participants indicated that they were willing to engage in preventive measures against the Omicron virus, which may reflect their perception of the imminent risk. Engagement in disease-prevention behaviors has been associated with both the perception of individual infection risk and the perceived severity of the health-related consequences. Fighting Omicron has been difficult since it is spread speedily by direct human-to-human contact.

Furthermore, Slovic (1987) reported that when an event seems uncontrollable, tragic, novel, or unknown, people feel at risk. Similarly, people's participation in adaptive preventive actions is strictly correlated with the perceived threat, including the perceived likelihood of getting sick, one's susceptibility, and the perceived harmfulness to one's health or the disease severity, according to the protection motivation theory (Rogers, 1975, 1983) and the health belief model (Abraham & Sheeran, 2015). Additionally, the results of the current study were accepted by Lin and his colleagues in their study, which demonstrated that people who felt more worried about Omicron and those who had higher perceptions of the risk of an outbreak practiced better health habits (Lin et al., 2022).

Furthermore, these results coincide with recent evidence of the need to protect one's health, the desire to stop the spread of COVID-19, and the perception that COVID-19 can be dangerous. All of these factors contributed to the participants' readiness to take preventive action (Shahin & Hussien, 2020).

In the current study, the highest proportion of the participants reported that they needed information about their chances of contracting Omicron, followed by information about the incubation period of the virus. This finding may be due to the fact that since the emergence of COVID-19, there have been many waves. The responses demonstrate the public's desire for accurate and sufficient information about the Omicron pandemic and indicate the need to inform and direct the public regarding the significance of using and adhering to the recommended preventive measures to decrease the chance of contracting Omicron. Many studies have accepted these results, which clearly indicate that by targeting particular populations and

addressing population-specific characteristics linked to COVID-19 risk perception, public health messaging intended to improve preventive actions and increase adherence can be more effectively tailored (Paulik et al., 2020; Sauer et al., 2021).

In the current study, the participants expressed a desire to receive Omicron virus updates from the national authorities in the country, such as the Ministry of Health, followed by the public health services. They indicated that they would prefer to receive Omicron updates through the reports published by national authorities and letters sent by local authorities, which may indicate that people actively choose the resources they trust for information, thus impacting people's sense of security. Providing information through various sources can play an important role in managing threats by influencing the public's judgments regarding risks and potential benefits. Such efforts may indirectly impact the adoption of recommended measures. These results were accepted by several researchers, and they indicate that public perceptions of COVID-19 risk are linked to people's usage of and trust in information sources (Lim et al., 2021; Tagini et al., 2021).

### **Conclusion**

The highest percentage of participants believed that the Omicron virus was dangerous, that they would certainly contract the Omicron virus if they did not follow the preventive measures, and that they had an average chance of contracting Omicron infection if they were not vaccinated against COVID-19.

With regard to the perceived efficacy and self-efficacy of the participants, the highest mean score was for participants who indicated that everyone should wear a mask during all activities outside the home, such as

shopping, transportation, work, etc., followed by the perception that they will manage to carry out masks wearing if this is advised. The study participants indicated their willingness to carry out the preventive measures because of their feelings of responsibility toward their own health, followed by concerns about preventing the transfer of Omicron to people around them, and then the perception that Omicron can be serious.

The highest proportion of the participants reported that they needed information about their chance of contracting Omicron, followed by information about the incubation period of the virus. Finally, they indicated that they would like to receive Omicron virus updates from the national authorities in the country, such as the Ministry of Health, followed by the public health services.

### **Recommendations**

Implementing awareness programs about Omicron infection by governmental agencies is highly recommended for providing necessary information related to the virus, its course, the chances of transmission, and the importance of using precautionary measures to decrease the risk of infection.

Psychoeducation and mental health support for the general population to decrease the psychological impact of the different COVID-19 variants are advised to improve the psychological state of the general population and mitigate the anxiety that may develop due to the uncertainty, confusion, and conflicting data associated with new COVID-19 variants.

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