

## Motivations of Wearing Face Mask: A Cross-sectional Study

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### ABSTRACT

**Background and Objectives:** Coronavirus disease 2019 (COVID-19) is a respiratory illness caused by the SARS-CoV-2 coronavirus, which initially appeared in China in December 2019 and has since spread to most countries in the global. Initial preventive recommendations called for the use of masks for protection against infection. To reduce COVID-19 transmission in the community. The purpose of this study was to assess motivation factors for wearing surgical face masks and investigate reasons for not wearing face coverings, and gain insights from our study population about messaging strategies.

**Methods:** A cross-sectional Descriptive study of 297 administrative staff of Hawler Medical University was conducted from February to October 2022. The data was gathered through direct interviews using a questionnaire that had been modified, include socio-demographic information and fifteen questions about the reason participants want to use face covering. The data were analyzed by Statistical Package for Social Science (SPSS version 25). Chi-square and Fisher's Exact tests were used to determine the study's result. The P-value was considered significant at  $\leq 0.05$ .

**Results:** The result revealed the highest percentage of the administrative staff was 34-46 years old (54.3%). Most of the participants in this study were female (55.6 %). Half of the participants demonstrated a high level of motivation (51.9 %). The highest level of motivation was related to "I want to protect people who are vulnerable (85.7%) and "I feel a responsibility to wear a facemask (81.9%) and wearing a facemask could prevent me from giving COVID-19 to the family (80.9%).

**Conclusion:** The studied sample had a high motivational level for wearing a face mask; the desire to protect people who are vulnerable and the feeling of responsibility to wear a face mask and oneself are often the driving motivation for using face coverings. It is necessary to implement massive education campaigns at the level of Hawler Medical University for administrative staff to increase motivation toward using a facemask to stop the separation of viruses COVID-19.

**Keywords:** Motivation; Facemasks; COVID-19.

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## INTRODUCTION

Coronavirus disease 2019 (COVID-19) is a respiratory illness caused by the SARS-CoV-2 coronavirus, which first appeared in China in December 2019 and has since spread to most countries around the world, resulting in a coronavirus pandemic in 2019-2020. The virus is primarily transmitted through respiratory droplets, Released when an infected person coughs or sneezes or through touching contaminated surfaces or objects and then touching their mouth, nose, or eyes [1]. In Wuhan, Hubei Province, China, the coronavirus (2019-nCoV) was discovered for the first time [2]. The full clinical picture is still unknown, but the most commonly described symptoms are fever, cough, myalgia or tiredness, pneumonia, and complex dyspnea. SARS-CoV-2 nucleic acid is detected using real-time fluorescence (RT-PCR) [3]. COVID-19 is the third emerging coronavirus to pose a global public health threat, following the Severe Acute Respiratory Syndrome Coronavirus (SARS-CoV) in 2002 [4]. Due to the similarity in COVID-19 and previous coronaviruses, initial preventive recommendations called for the use of masks for protection against infection. Social distancing and hand hygiene were initially implemented to reduce COVID-19 transmission in the community [5]. On March 11, 2020, the World Health Organization (WHO) proclaimed the SARS-CoV-2 coronavirus disease 2019 (COVID-19) outbreak to be a pandemic [6]. Face masks quickly rose to the top of the pandemic's most recognizable symbols. The general agreement is that using a mask lowers the risk of contracting and transmitting the virus, protecting both the person wearing it and those nearby [7]. But how well masks function is largely dependent on human behavior. Studies on the effectiveness of mask use make the assumption that people wear masks and do

so correctly [8]. While older persons have a significantly higher mortality risk from disease complications than younger people, COVID-19 offers varied intrinsic motives for mask wear for different age groups. Therefore, it is possible that there would be a generational conflict in the reasons people follow the pandemic limitations, such as wearing masks. We, therefore, postulate that specific methods for conveying public health advice on mask use to the older and younger age groups are required [9]. The lack of evidence regarding the virus's mode of transmission at the beginning of the pandemic caused conflicting public health recommendations from health organizations and political leaders. For instance, the WHO initially held off on endorsing mask use, partly because of the dearth of data and partially out of concern for the depletion of supplies for frontline workers. The WHO even stated in March 2020 that wearing a mask when "not ill or caring for someone who is ill" would constitute "wasting a mask " [10]. Understanding how to encourage people of various ages to wear masks in public is crucial, especially when doing so is up to them. People may choose to wear masks for either to protect themselves from contracting the illness (risk preferences) or to prevent spreading it to others. This study aims to investigate the driving forces of face coverings.

## METHODS

This cross-sectional study was conducted between February to October 2022 among administrative staff at Hawler Medical University (Colleges of Medicine 67, Dentistry 49, Pharmacy 73, Nursing 59, and Health Sciences 45) both genders (male and female) during the Corona Virus pandemic in Erbil City, Kurdistan Region of Iraq. The sample of the study was estimated according to the total number of

administrative staff. Among 1300 staff, 297 of them were selected as the study sample. The estimated sample size of the study was determined by using a sample size calculation formula known as Power analysis with a 95% confidence interval (CI) and a 5% margin of error for the required sample size [11]. the tool and method of data collection include a questionnaire consisting of two parts. The first part includes the sociodemographic characteristics of respondents, including age, gender, educational level, marital status, and religion. The second part consisted of the statements to identify why participants want to use face covering (motivation). The data were collected through direct face-to-face interview techniques with the participants. After describing the contents of all parts of the questionnaire, the responses to the participants about motivational levels of wearing face mask items included two answers 0 = not motivated (no) and 1= motivated (yes). The calculation of the overall motivational levels of wearing face masks (15 items) was categorized into three groups highly motivated (1-5), moderately motivated (6-10), and low motivated (11-15). This study was submitted to the Ethical Committee at the College of Nursing, Hawler Medical University, in order to get an approval letter for conducting it. Then, getting the informal oral approval from each participant after clarification of the purpose of the study. The data were entered into the computer by using a Statistical Package for Social Science (SPSS version 25). The quantitative data were described by frequency and percentage. The inferential statistical analysis was assessed by using Chi-square and Fisher's Exact tests. The P-value was considered significant at  $\leq 0.05$ .

**RESULTS**

Table 1 shows that the highest proportion of the study sample was between ages 34 to 46 years, followed by 31.4% in ages 21 to 33 years and female groups of gender (55.6%). The highest percentage of the current study samples graduated from universities (40.6%). The table shows the number of married in the study sample exceeds two third (67.9%). Close to half (49.8%) of the study sample got COVID-19, and 51.9% of the sample wore masks.

**Table 1:** Socio demographic Characteristics of the study sample

| Sociodemographic Characteristics (n=293) |                  | n. (%)     |
|--|------------------|------------|
| Age Group (years)                        | 21-33            | 92 (31.4)  |
|  | 34-46            | 159 (54.3) |
|  | 47-59            | 42 (14.3)  |
| Gender                                   | Male             | 130 (44.4) |
|  | Female           | 163 (55.6) |
| Level of education                       | Basic            | 32 (10.9)  |
|  | Secondary        | 51 (17.4)  |
|  | Institute        | 65 (22.2)  |
|  | University       | 119 (40.6) |
| Marital status                           | Higher education | 26 (8.9)   |
|  | Single           | 94 (32.1)  |
|  | Married          | 199 (67.9) |
| Religion                                 | Muslim           | 272 (92.8) |
|  | Christian        | 18 (6.1)   |
|  | Others           | 3 (1)      |
| Had COVID-19                             | Definitely No    | 68 (23.2)  |
|  | Not sure         | 79 (27)    |
|  | Definitely Yes   | 146 (49.8) |
| Face covering use (mask)                 | Never            | 29 (9.9)   |
|  | Some of the time | 152 (51.9) |
|  | Most of the time | 112 (38.2) |

Table 2 shows that 77.8% of the sample was widely motivated by using face masks to protect themselves and others from COVID-19. 85.7% wanted to protect vulnerable people to wear facemasks. Participants were motivated by a desire to exert control and typically agreed that covering one's face will protect the community from risk , with a 74.1% response rate.

Other responses included "I feel a responsibility to wear a face mask" at 81.9%, "wearing a face mask could prevent me from giving COVID-19 to the family" at 80.9%, "will allow the school to open" at 74.4%, and "allow me to see family and friends" at 72%.

**Table 2:** Motivations for face mask used by the study sample

| Motivations for Face Mask Use (n=293)  | Correct<br>n. (%) | Incorrect<br>n. (%) |
|--|-------------------|---------------------|
| I don't want to give COVID-19 to anyone  | 228 (77.8)        | 65 (22.2)           |
| I want to protect people who are vulnerable  | 251 (85.7)        | 42 (14.3)           |
| Wearing a face covering will prevent my community (e.g., members from my neighborhood, work, university, and church) from being at risk. | 217 (74.1)        | 76 (25.9)           |
| I feel a responsibility to wear a face covering  | 240 (81.9)        | 53 (18.1)           |
| Wearing a face covering could prevent me from giving COVID-19 to my family   | 237 (80.9)        | 56 (19.1)           |
| Wearing a face covering helps keep our hospitals from getting too full   | 210 (71.7)        | 83 (28.3)           |
| I want to follow the experts' advice.  | 194 (66.2)        | 99 (33.8)           |
| Wearing a face covering could prevent me from getting COVID-19.  | 191 (65.2)        | 102 (34.8)          |
| Wearing a face covering is something I can control in an uncontrollable situation.   | 193 (65.9)        | 100 (34.1)          |
| Wearing a face mask will allow the government to ease restrictions.  | 201 (68.6)        | 92 (31.4)           |
| Wearing a face mask will allow schools to open.  | 211 (72)          | 82 (28)             |
| Wearing a facemask allows me to see my friends and family.   | 218 (74.4)        | 75 (25.6)           |
| I would be embarrassed if people saw me not wearing a face covering.   | 102 (34.8)        | 191 (65.2)          |
| I am afraid of getting in trouble if I don't wear a face mask  | 146 (49.8)        | 147 (50.2)          |
| I feel pressure from friends and family  | 107 (36.5)        | 186 (63.5)          |

Table 3 is concerning the motivation of the overall sample; the table shows that 51.9%

of the sample is highly motivated for wearing masks.

**Table 3:** Overall motivational levels of wearing face masks

| Motivational Levels | n.         | (%)          |
|---------------------|------------|--------------|
| High                | 152        | (51.9)       |
| Moderate            | 103        | (35.1)       |
| Low                 | 38         | (13)         |
| <b>Total</b>        | <b>293</b> | <b>(100)</b> |

Table 4 illustrates the association between sociodemographic characteristics and the level of motivation for wearing a face mask. The result shows a very highly statistically significant association

between the motivation level of wearing a face mask and the use of face masks, and significance with genders having high motivation (P-values of 0.001 and 0.009, respectively).

**Table 4:** Association between Sociodemographic characteristics with motivation the level wearing a face mask

| Sociodemographic Characteristics |                          | Motivational Levels (n=293) |                    |               | P-Value            |
|----------------------------------|--------------------------|-----------------------------|--------------------|---------------|--------------------|
|                                  |                          | High<br>n. (%)              | Moderate<br>n. (%) | Low<br>n. (%) |                    |
| Age Group<br>(years)             | 21-33                    | 45 (48.9)                   | 28 (30.4)          | 19 (20.7)     | <b>0.126</b><br>NS |
|                                  | 34-46                    | 85 (53.5)                   | 59 (37.1)          | 15 (9.4)      |                    |
|                                  | 47-59                    | 22 (52.4)                   | 16 (38.1)          | 4 (9.5)       |                    |
| Gender                           | Male                     | 67 (51.5)                   | 38 (29.2)          | 25 (19.2)     | <b>0.009</b><br>NS |
|                                  | Female                   | 85 (52.1)                   | 65 (39.9)          | 13 (8)        |                    |
| Level of education               | Basic                    | 14 (43.8)                   | 14 (43.8)          | 4 (12.5)      | <b>0.286</b><br>NS |
|                                  | Secondary                | 28 (54.9)                   | 14 (27.5)          | 9 (17.6)      |                    |
|                                  | Institute                | 34 (52.3)                   | 22 (33.8)          | 9 (13.8)      |                    |
|                                  | University               | 58 (48.7)                   | 49 (41.2)          | 12 (10.1)     |                    |
| Higher education                 | Higher education         | 18 (69.2)                   | 4 (15.4)           | 4 (15.4)      | <b>0.290</b><br>NS |
|                                  | Marital status           | Single                      | 44 (46.8)          | 34 (36.2)     |                    |
| Marital status                   | Married                  | 108 (54.3)                  | 69 (34.7)          | 22 (11.1)     | <b>0.217</b><br>NS |
|                                  | Religion                 | Muslim                      | 138 (50.7)         | 96 (35.3)     |                    |
| Religion                         | Christian                | 11 (61.1)                   | 7 (38.9)           | 0 (0)         | <b>0.835</b><br>NS |
|                                  | Others                   | 3 (100)                     | 0 (0)              | 0 (0)         |                    |
|                                  | Had COVID-19             | Definitely No               | 37 (54.4)          | 25 (36.8)     |                    |
| Had COVID-19                     | Not sure                 | 40 (50.6)                   | 27 (34.2)          | 12 (15.2)     | <b>0.835</b><br>NS |
|                                  | Definitely Yes           | 75 (51.4)                   | 51 (34.9)          | 20 (13.7)     |                    |
|                                  | Face covering use (mask) | Never                       | 6 (20.7)           | 5 (17.2)      |                    |
| Some of the time                 | 73 (48)                  | 65 (42.8)                   | 14 (9.2)           |               |                    |
| Most of the time                 | 73 (65.2)                | 33 (29.5)                   | 6 (5.4)            |               |                    |



## DISCUSSION

Knowing when and why people are covering their faces is crucial because the COVID-19 pandemic is still affecting all communities in the world. There are opportunities to increase compliance even among people who frequently cover their faces, especially in social settings. The result of the present study shows that more than half of the study sample occurred in middle age between 34-46 years old and were female. This finding agrees with study conducted by Vereen et al., 2021 among 448 participants on motivation, barriers, and communication for promoting face covering during the Covid-19 pandemic, in which more than half of the participants are females [12]. Another study conducted by Shelus et al. in 2020 about perceptions of wearing face masks among 34 focus groups showed 82% of them were female. [13]. Regarding educational level, the present study shows that a considerable proportion of both genders had university degrees. This finding is consistent with previous research, which found that the majority of the study sample, 46% had a bachelor's degree [12]. In terms of the marital status of the study sample, the findings revealed that the highest percentage of the study sample was married. This finding is similar Internet-Based Cross-Sectional Study conducted in 2022 by Xu Y. et al. on Factors Associated with Protective Mask-Wearing Behavior to Avoid COVID-19 Infection in China, which included 10,304 survey respondents. Over half of the study participants (n = 5302, 51.46%) were married. [26]. About half of the participants reported having had covid-19. This result contrasts with the result of a study done by Vereen et al. in 2021, which reported among 448 participants, few (just 6%) reported having had covid-19 [12]. Regarding motivational factors for facemask use, many participants were motivated by statements about

wearing face coverings because they don't want to give COVID-19 to anyone majority of the study sample wearing the facemask to protect vulnerable people, wearing a face covering will prevent the community and some participants were motivated by statements that face coverings could prevent themselves from getting COVID-19. This finding is similar to a previous study that reported that the most (77%) frequently endorsed motivations were, "I don't want to give COVID-19 to anyone, and 76% wear a face covering to protect old people [12]. The current study's findings are consistent with a previous study on data on illness complications and mortality, which found that older people are more likely to fall into the COVID-19 risk group. Furthermore, the median cutoff for both the younger and older subgroups falls within the age range with a COVID-19 death rate of 1% or higher [10]. The prominence of risk as the primary motivator for mask use can be due to significant age-related changes. While reducing the risk of infection may serve as the primary reason for older individuals, who are more likely to develop significant symptoms. The results are consistent with earlier research suggesting that people may be more altruistic when faced with uncertainty [14] and with newer research showing links between the intention to cover one's face and the desire to protect one's community [15]. Messages encouraging the safety of loved ones are therefore encouraged. Most of the study participants like to follow the expert's advice regarding the importance of wearing facemasks. This result is supported by a previous study about the perception of face covering that reported The majority of participants expressed a desire to follow the rules of face covering based on health experts' recommendations and data supporting their efficacy [16]. About one-third of the participants in

this study responded that "Wearing a face covering is something I can control in an uncontrollable situation" (65.9%). The face coverings were frequently worn out of a sense of duty or because it was thought to be morally correct. The choice to cover one's face must not be influenced by the actions of those around one; some people choose to cover their faces in an effort to "keep the peace" by adhering to social norms [16]. On the other hand, the least endorsed statement is that half of the participants feel pressure, get into trouble, Feel embarrassed if one is observed without a facial covering. According to the supporting research, messages evoking emotions reduced the intention to cover one's face more than messages evoking reasoning. [17]. while the use of fear in health communication campaigns is supported by some literature [18]. According to our findings, it may not be appropriate to promote COVID-19 prevention behaviors by using messages that incite fear or call for harsh punishment. Social norms are a well-documented prerequisite for both the intention to perform and subsequent participation in a behavior [19,20]. The present study shows association between gender and motivational level to wearing facemasks. This result disagrees with the study conducted by Howard in 2021 regarding gender, face mask perceptions, and face mask wearing among 698 participants showed that gender did haven't relationship with face mask wearing [21]. Both men and women are known to engage in comparable amounts of passive health behaviors, such as vaccination and presentism, but men are less likely to wear face masks than women. according to numerous authors of popular press in terms of risky active health behaviors, men are known to use drugs, drink alcohol, and smoke more than women [22]. While there is a non-significant relationship between

educational level and motivational level, this finding contradicts a previous cross-sectional study regarding knowledge, attitude, and practice of wearing a facemask in the population presenting to tertiary hospitals in a developing country, where a statistically significant relationship was noted between education levels and the practice of wearing a facemask ( $P = 0.01$ ) [23]. Many previous studies have clearly proven this concept [24,25]. According to the findings, there is a non-statistically significant relationship between marital status and motivation to wear face masks. This finding concurs with the findings of the study about Factors Associated with Protective Mask-Wearing Behavior to Avoid COVID-19, whereas the marital status of family members did not show a significant relationship with the wearing of the facemask [26].

## CONCLUSIONS

Understanding the motivations behind using ace masks by administrative staff members is essential for influencing health behavior and informing health communication. The participant in the study was very motivated to don a facemask. In our study sample, the desire to protect the weak and the feeling of responsibility to wear a face mask and provide protection for both oneself and others. At the level of Hawler Medical University, massive education campaigns must be launched to spread the word about the advantages of wearing a facemask to prevent the transmission of viruses. COVID-19.

## CONFLICT OF INTEREST

The author reports no conflict of interest.

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