

Online Data Supplements

Protective Measures Practices among Hospitals' Professionals Working in a Fragile Health System

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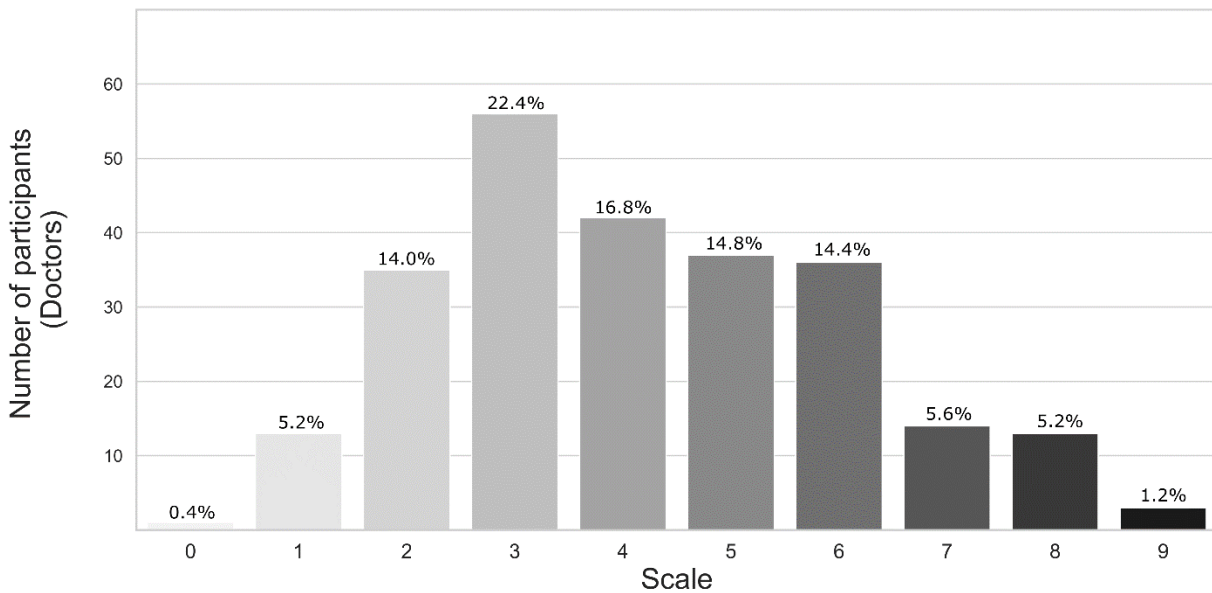


Figure 1S. Best practice scale among participating doctors (n=250). Fifteen questions were used to assess the medical doctors' practices. Each question was given 1 point if all best practice answers were chosen, with a minimum score of 0 point and a maximum score of 15 points, the higher score achieved was 9.

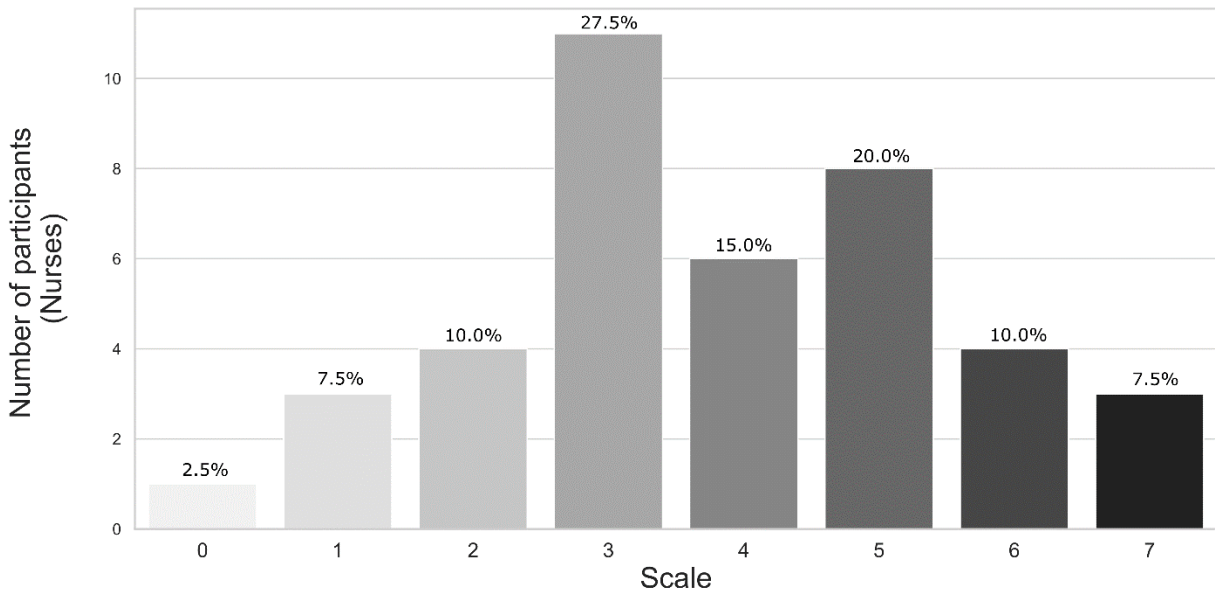


Figure 2S. Best practice scale among participating nurses (n=40). Twelve questions were used to assess the nurses' practices. Each question was given 1 point if all correct answers were chosen, with a minimum score of 0 point and a maximum score of 12 points, the higher score achieved was 7.

Table 1S: Characteristics of participants from the cleaning staff (n=4)

		Count	Percentage
Cleaning staff		4	
Gender	Female	1	25.00%
	Male	3	75.00%
Governorate	Damascus	4	100%

Table 2S: Scores* (out of 7) of participants from the cleaning/disinfection staff (n=4)

Participant	Count
Participant 1	1
Participant 2	2
Participant 3	3
Participant 4	0
Average score	1.5

*The cleaning/disinfection staff were asked 7 questions. Each question was given 1 point if **all** right choices were selected.

Translated form

Section 1 of 5

A cross-sectional study on the personal and occupational protection measures of health care workers in Syria during the COVID-19 pandemic

In light of the pandemic of the new Coronavirus disease COVID-19, and the increasing number of cases in Syria; Health care workers remain on the first lines of contact with the infected patients, and therefore they face a greater risk of infection than others. Hence, the importance of strict and complete adherence to safety, protection, and hygiene rules when dealing with infected patients, and knowing the correct use of personal protective equipment.

This questionnaire aims to evaluate the application of the health staff of the safety and hygiene rules and necessary prevention methods while dealing with patients with the COVID-19 pandemic, and we emphasize here that this questionnaire is not a cognitive test, but rather aims to evaluate procedures and what is happening in reality in order to improve it and understand the defects.

Participation in this survey is completely voluntary and all the information that will be collected is private information, and the study team will not view it individually, and only non-nominal data will be published. Any information that shows the personal identity of the participant will not be collected, and the participation or lack thereof will not entail any administrative procedures.

By clicking I agree, you agree to participate in this survey and to the possibility of publishing the statistical results issued by it without publishing your personal information.

Doctors conducting the study:

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* Required

1. After reading the above description, do you agree to participate in this study?*

I agree

I do not agree

2. Date of birth*

Example: January 7, 2019

3. Gender * *Mark only one oval.*

Male

female

4. Governorate* *Mark only one oval.*

Damascus

Rif Dimashq

Homs

Hama

Aleppo

Latakia

Tartus

Al-Suwayda

Quneitra

Daraa

Idlib

Deir Ezzor

Al-Hasaka

Raqqa

5. Profession* *Mark only one oval.*

Doctors staff *Skip to question 6*

Nursing staff *Skip to question 22*

Employee (cleaning / sterilization) *Skip to question 35*

Section 2 of 5

Personal protection of doctors

Please answer the questions about methods of protection based on the daily practice in the different hospital departments, and not on the basis of prior knowledge.

6. Have you ever dealt with a confirmed or suspected case of COVID-19?* *Mark only one oval.*

Yes

No

7. When a patient is suspected case of COVID-19:^{1*} *Mark only one oval.*

I examine her/him in the general ER

I examine her/him in an isolated room

I examine her/him anywhere available

8. When admitting a patient suspected of having COVID-19:* *Mark only one oval.*

The patient is placed in a room alone

The patient is placed in a common room as long as other admitted patients are suspected of having the same disease

The patient is placed in any available section of the hospital

9. The safe distance to be kept between patients* *Mark only one oval.*

There is no need for safe distance because everyone has the same disease

1 meter

Half a meter

More than 3 meters

¹ ER departments in the targeted hospitals are divided into several separated rooms, with each room containing one or two patients' beds. During the pandemic, some of these rooms were dedicated for patients with respiratory distress especially those highly suspected for COVID-19. So, our questions here aimed to know to what extent the medical doctors are adhere to the isolation of suspected cases in the dedicated rooms. However, knowing that ER sections in the targeted hospitals are overwhelmed most of the time with enormous number of patients and relatively limited space and resources (both human and equipment)¹ we added the last option "I examine her/him anywhere available" to make our questionnaire closer to the participants daily practice as some may overcome isolation procedures to accelerate the rhythm and the transfer of the ER patients to other hospital departments.

References:

1. WHO. HeRAMS_annual_report_Public Hospitals in the Syrian Arab Republic.; 2018.

https://applications.emro.who.int/docs/syr/CoPub_HeRAMS_annual_rep_public_Hospitals_2019_EN.pdf?ua=1&ua=1.

10. As for the expiration period of the masks (multiple answers can be chosen)* *Check all that apply.*

- The surgical mask must be changed every 6 hours
- The surgical mask must be changed every 4 hours
- N95 must be changed every 4 hours
- N95 must be changed every 8 hours

11. When performing periodic examination of patients, tools such as a stethoscope, arterial manometer and oximeter, are used. Regarding the use of these tools when dealing with patients with COVID-19 (multiple answers can be chosen):* *Check all that apply.*

- There are devices for each patient, and equipment is never mixed
- The devices are for one time use only
- The same devices are used for many patients, but all patients have or are suspected of having COVID-19.
- The same devices are used to examine all patients, whether or not they are suspected of having COVID-19, and sterility is not verified Before nor after use
- The same devices are used to check all referred patients, whether or not they are suspected of having COVID-19, but with subsequent good disinfection Per use
- When a confirmed patient is discharged, the pressure device intended for him should not be used directly to examine other patients

12. Do you think that a CT scan transmits the infection? (Multiple answers can be selected)* *Check all that apply.*

- Yes, and I make sure to sterilize the place for imaging before and after imaging any patient
- Yes, but I cannot be sure that the imaging location is always sterilized
- No, I do not think it is a place to transmit infection
- The patient's pathway to the CTscan should be pre-planned to reduce the possibility of infection
- I do not know

13. The new Corona virus is transmitted by Droplets, but within the hospital, the procedures that produce aerosol carry the risk of transmitting the infection as well. Which of the following procedures are the procedures that produce aerosol? (You can choose multiple answers)* *Check all that apply.*

- Nebulization
- Tracheal intubation
- Tracheostomy
- Routine chest examination out of the ICU
- Suction of chest secretions
- Positive Pressure Ventilation BIPAP / CPAP
- Blood pressure check
- Mechanical ventilation

14. During regular rounds you wear the following personal protective equipment (you can choose multiple answers)* *Check all that apply.*

- Sterile gloves
- A surgical face mask
- Clean, non-sterile gloves
- Gown
- Cap
- Shoe cover
- Goggles
- N95 mask
- Protective coverall

15th. When performing aerosol-productive measures for COVID-19, you use the following personal protective equipment (you can choose multiple answers)* *Check all that apply.*

- Sterile gloves
- A surgical face mask
- Clean, non-sterile gloves
- Gown
- Cap
- Shoe cover
- Goggles
- N95 mask
- Protective coverall

16. In dealing with a face mask (you can choose multiple answers)* *Check all that apply.*

- I use it for multiple patients
- Sometimes I use the same mask repeatedly even after taking it off.
- I use the same mask more than once and re-sterilize it
- May touch the mask and move it during use
- I use the mask only once and for one patient
- I use the mask only once, but can be used for dealing with multiple patients

17. When using the N95 mask:* *Mark only one oval.*

- I always perform a Seal Check²
- I perform a seal check sometimes
- I never perform the Seal Check
- I don't know what a Seal Check is

18. When removing personal protective equipment, please choose the correct phrases (you can choose multiple answers)* *Check all that apply.*

- I remove the face mask by lifting it up from the front and then removing it from the back.
- I remove the face mask by loosening the back ties and then peeling it away from the face
- I put the mask in a special closed basket
- I clean my hands always with soap and water, even if they look clean
- I clean my hands with soap and water only in case of contamination while removing protective equipment.
- I remove the gown from the front first and place it as it is in the designated basket
- I remove the gown from the back, fold it backwards and place it in the designated basket

19. Concerning the hand cleaning: (you can choose multiple answers)* *Check all that apply.*

² Seal check is recommended by CDC and WHO in order to confirm the fit of any respirator, and it consists of 2 steps: a positive pressure check and a negative pressure check.^{1,2}

References:

1. SEALCHECK_EN_A2s.pdf. https://www.who.int/csr/resources/publications/SEALCHECK_EN_A2s.pdf?ua=1. Accessed August 16, 2020.
2. Filtering out confusion: frequently asked questions about respiratory protection - user seal check. October 2018. doi:10.26616/NIOSH PUB2018130

- Washing hands before touching a patient.
- Washing hands before sterilization and cleaning procedures.
- Washing hands after the exposure to patient's excretions and fluids.
- Washing hands after touching a patient.
- Washing hands after touching devices surrounding the patient.

20. When dealing with COVID-19 patients' companions (You can choose multiple answers)* *Check all that apply.*

- Accompanying people are allowed to visit without supervision
- The names of patients' companions are recorded
- All protection measures are explained for patients' companions
- Patients' companions are provided with personal protection equipment
- Only certain companions are allowed to visit the patients.

21. Medical staff responsible for each COVID-19 patient (You can choose multiple answers)* *Check all that apply.*

- Constantly changing according to shifts
- Each patient has a steady, responsible physician and nursing staff with a daily schedule of visits
- Doctors and nursing staff are stable but common to all patients with COVID-19
- The medical staff is quarantined for 14 days after dealing with suspected or confirmed patients
- Doctors and nursing staff are allowed to return home immediately after the end of their shifts
- The number of doctors and nursing staff is proportional to the number of patients
- The number of doctors or nursing staff is too little to handle patients
- The number of doctors and nursing staff is too large.
- The medical staff has specific instructions on how to handle CPR

Skip to section 5 (Thank you very much for your valuable contribution)

Section 3 of 5

Personal protection of the nursing staff

Please answer the questions about methods of protection based on the daily practice in the different hospital departments, and not on the basis of prior knowledge.

22. Have you ever dealt with a confirmed or suspected case of COVID-19?* *Mark only one oval.*

- Yes
- No

23. When admitting a patient suspected of having COVID-19:* *Mark only one oval.*

- The patient is placed in a room alone
- The patient is placed in a common room as long as other admitted patients are suspected of having the same disease
- The patient is placed in any available section of the hospital

24. The safe distance to be kept between patients* *Mark only one oval.*

- There is no need for safe distance because everyone has the same disease
- 1 meter
- Half a meter
- More than 3 meters

25. During regular rounds you wear the following personal protective equipment (you can choose multiple answers)* *Check all that apply.*

- Sterile gloves
- A surgical face mask
- Clean, non-sterile gloves
- Gown
- Cap
- Shoe cover
- Goggles
- N95 mask
- Protective coverall

26. The new Corona virus is transmitted by Droplets, but within the hospital, the procedures that produce aerosol carry the risk of transmitting the infection as well. Which of the following procedures are the procedures that produce aerosol? (You can choose multiple answers)* *Check all that apply.*

- Nebulization
- Tracheal intubation
- Tracheostomy
- Routine chest examination out of the ICU
- Suction of chest secretions
- Positive Pressure Ventilation BIPAP / CPAP
- Blood pressure check
- Mechanical ventilation

27. When performing aerosol-productive measures for COVID-19, you use the following personal protective equipment (you can choose multiple answers)* *Check all that apply.*

- Sterile gloves
- A surgical face mask
- Clean, non-sterile gloves
- Gown
- Cap
- Shoe cover
- Goggles
- N95 mask
- Protective coverall

28. In dealing with a face mask (you can choose multiple answers)* *Check all that apply.*

- I use it for multiple patients
- Sometimes I use the same mask repeatedly even after taking it off.
- I use the same mask more than once and re-sterilize it
- May touch the mask and move it during use
- I use the mask only once and for one patient
- I use the mask only once, but can be used for dealing with multiple patients

29. When using the N95 mask:* *Mark only one oval.*

- I always perform a Seal Check
- I perform a seal check sometimes
- I never perform the Seal Check
- I don't know what a Seal Check is

30. When removing personal protective equipment, please choose the correct phrases (you can choose multiple answers)* *Check all that apply.*

- I remove the face mask by lifting it up from the front and then removing it from the back.
- I remove the face mask by loosening the back ties and then peeling it away from the face
- I put the mask in a special closed basket
- I clean my hands always with soap and water, even if they look clean
- I clean my hands with soap and water only in case of contamination while removing protective equipment.
- I remove the gown from the front first and place it as it is in the designated basket
- I remove the gown from the back, fold it backwards and place it in the designated basket

31. As for the expiration period of the masks (multiple answers can be chosen)* *Check all that apply.*

- The surgical mask must be changed every 6 hours
- The surgical mask must be changed every 4 hours
- N95 must be changed every 4 hours
- N95 must be changed every 8 hours

32. Concerning the hand cleaning: (you can choose multiple answers)* *Check all that apply.*

- Washing hands before touching a patient.
- Washing hands before sterilization and cleaning procedures.
- Washing hands after the exposure to patient's excretions and fluids.
- Washing hands after touching a patient.
- Washing hands after touching devices surrounding the patient.

33. When dealing with COVID-19 patients' companions (You can choose multiple answers)* *Check all that apply.*

- Accompanying people are allowed to visit without supervision
- The names of patients' companions are recorded
- All protection measures are explained for patients' companions
- Patients' companions are provided with personal protection equipment
- Only certain companions are allowed to visit the patients.

34. The staff responsible for each COVID-19 patient (You can choose multiple answers)* *Check all that apply.*

- Constantly changing according to shifts
- Each patient has a steady, responsible physician and nursing staff with a daily schedule of visits
- Doctors and nursing staff are stable but common to all patients with COVID-19
- The medical staff is quarantined for 14 days after dealing with suspected or confirmed patients
- Doctors and nursing staff are allowed to return home immediately after the end of their shifts
- The number of doctors and nursing staff is proportional to the number of patients
- The number of doctors or nursing staff is too little to handle patients
- The number of doctors and nursing staff is too large.
- The medical staff has specific instructions on how to handle CPR

Skip to section 5 (Thank you very much for your valuable contribution)

Section 4 of 5

Personal protection of cleaning and disinfection staff

Please answer the questions about methods of protection based on the daily practice in the different hospital departments, and not on the basis of prior knowledge.

35. During regular rounds you wear the following personal protection equipment (you can choose multiple answers)* *Check all that apply.*

- Sterile gloves
- A surgical face mask
- Clean, non-sterile gloves
- Gown
- Shoe cover

Goggles

36. Concerning the hand cleaning: (you can choose multiple answers)* *Check all that apply.*

- Washing hands before touching a patient.
- Washing hands before sterilization and cleaning procedures.
- Washing hands after the exposure to patient's excretions and fluids.
- Washing hands after touching a patient.
- Washing hands after touching devices surrounding the patient.

37. When cleaning and sterilizing patient-related tools (you can choose multiple answers)* *Check all that apply.*

- Only water is used for cleaning.
- Water and alcohol are used.
- Water and chlorine are used.
- Soap and water are used

38. When dealing with patient's waste (you can choose multiple answers)* *Check all that apply.*

- They are placed in specially sealed baskets
- Placed in open baskets
- Bed sheets, blankets and clothes of COVID-19 patients are placed with sheets and covers from the rest of the departments.
- Sheets, blankets and clothes are placed in closed baskets

39. As for the expiration period of the masks (multiple answers can be chosen)* *Check all that apply.*

- The surgical mask must be changed every 6 hours
- The surgical mask must be changed every 4 hours
- N95 must be changed every 4 hours
- N95 must be changed every 8 hours

40. Do you think that a CT scan transmits the infection? (Multiple answers can be selected)* *Check all that apply.*

- Yes, and I make sure to sterilize the place for imaging before and after imaging any patient

- Yes, but I cannot be sure that the imaging location is always sterilized
- No, I do not think it is a place to transmit infection
- The patient's pathway to the CTscan should be pre-planned to reduce the possibility of infection
- I do not know

41. The staff responsible for each COVID-19 patient (You can choose multiple answers)* *Check all that apply.*

- Constantly changing according to shifts
- Each patient has a steady, responsible physician and nursing staff with a daily schedule of visits
- Doctors and nursing staff are stable but common to all patients with COVID-19
- The medical staff is quarantined for 14 days after dealing with suspected or confirmed patients
- Doctors and nursing staff are allowed to return home immediately after the end of their shifts
- The number of doctors and nursing staff is proportional to the number of patients
- The number of doctors or nursing staff is too little to handle patients
- The number of doctors and nursing staff is too large.
- The medical staff has specific instructions on how to handle CPR

Skip to section 5 (Thank you very much for your valuable contribution)

Thank you very much for your valuable contribution

Please click Submit in order to submit your answers