



## Correspondence

**The 2022 monkeypox outbreak — Special attention to nurses' protection should be a top priority**

## ARTICLE INFO

*Keywords*

Monkeypox  
 Monkeypox virus  
 Healthcare personnel  
 Stress  
 Prevention  
 Infection control  
 Healthcare  
 Nurse  
 Healthcare workers  
 Risk factor

*Respected Editors,*

On July 23rd, 2022, in response to the rapidly expanding monkeypox outbreak, the World Health Organization (WHO) declared a public health emergency of international concern (PHEIC). Monkeypox is a viral disease that spreads from animals to humans (zoonotic disease) through direct contact with infected animals' bodily fluids, blood, or lesions, whereas human-to-human transmission can only occur when direct contact is present, with an incubation period of 5–21 days. The main symptom of the disease is a rash that may appear on the genitals, anus, and other regions of the body. As of August 28, 2022, in 99 countries, 47,652 confirmed cases and 13 deaths were reported around the world. The only preventative vaccine for monkeypox is the smallpox vaccine, which is 85% effective [1].

Infectious diseases are one of the biggest possible threats facing the public in general amidst a variety of public health emergencies [2]. To create executive plans to meet the challenges of potential public health emergencies requires the capacity of healthcare workers to respond to epidemics [3]. Frontline nurses are the primary taskforce in responding to disease situations during epidemic events in a variety of clinical settings, and their role in disease prevention and surveillance is of paramount importance in case management [4]. Consequently, it is crucial for nurses to be properly prepared to respond to a potential outbreak of monkeypox. When defining the critical character of frontline nurses in the management of prevailing epidemics, the overarching priority is to address their readiness for communicable diseases. Frontline nurses are expected to assert a high level of awareness towards epidemic outbreaks and ensure the community's protection [5]. The global COVID-19 epidemic has devastated healthcare workers, testing capacity, public health monitoring, safety equipment, and emergency preparedness resources. Lack of early identification and effective treatment may cause an uncontrolled spread of monkeypox [6].

Clinical care for monkeypox should be greatly improved in order to alleviate symptoms, avoid complications, and avoid a prolonged period

of sequelae. Raising awareness of risk factors and educating individuals on measures they may take to reduce contact with the virus are the most effective methods for preventing the spread of monkeypox virus. Moreover, observation and quick documentation of new cases is critical for epidemic control. During a human monkeypox outbreak, close contact with an infected patient is the most significant risk factor for monkeypox virus infection. Frontline nurses and their families are more susceptible to infection. Health care workers who care for patients with suspected or confirmed monkeypox virus infection, or who handle samples from these patients, should use standard infection control precautions [7], such as a single-use N95 respirator, isolation gown, head and shoe covering, goggles, hand hygiene, and gloves.

Frontline nurses have a key role in responding to the monkeypox outbreak by delivering health education on prevention and infection control and preventing stigma and discrimination [8]. However, the monkeypox epidemic, like any other pandemic and endemic, puts pressure on nurses working on the frontlines of care with infected patients. In addition, the monkeypox virus is not transmitted from one person to another through sexual transmission alone; it can be transmitted to all those who work closely with an infected person. Therefore, health workers working on the frontlines are anxious and stressed [9]. Although they gain personal satisfaction by providing care to patients, they certainly experience physical and mental discomfort. These include feeling incompetent at work; seeing patients in pain; discomfort from wearing personal protective equipment (PPE) clothing; and long working hours, which may affect social relationships. All of these make the managers of health institutions pay special attention to nurses and healthcare workers, such as physical and psychological support; providing welfare services; more training opportunities; the use of modern technology; and protecting nurses during disease [10,11].

The principles of nursing management of monkeypox patients must include patient isolation and protection of compromised skin and mucous membranes. The patient may experience loss of appetite and

<https://doi.org/10.1016/j.amsu.2022.104615>

Received 29 August 2022; Accepted 4 September 2022

Available online 8 September 2022

2049-0801/© 2022 The Authors. Published by Elsevier Ltd on behalf of IJS Publishing Group Ltd. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

dehydration. The nurse should try to rehydrate and provide nutritional support, check vital signs, close monitor and observe for complications. Additionally, to reduce the risk of contact with others, the patient should wear a triple layer of mask and skin lesions should be covered as much as possible (e.g., long sleeves, long pants). The Monkeypox disease currently has no specific clinically proven treatments [1]. Supportive treatments are needed for most viral diseases, including antipyretics and prevention of dehydration.

Finally, nurses are the backbone of hospitals. Protection of nurses plays a vital role in responding to monkeypox outbreaks and other pandemics. The lack of adequate support and safety measures for nurses during significant epidemics of infectious diseases is a concern on a global scale. The collaboration between nurses, health agencies, and authorities on a practical level is essential for the establishment of an efficient response to an outbreak of monkeypox. In addition, one of the most important factors in lowering rates of nosocomial infection is the availability of policies and protocols that can be easily modified.

### Research registration Unique Identifying number (UIN)

Name of the registry: Not applicable.

Unique Identifying number or registration ID: Not applicable.

Hyperlink to your specific registration (must be publicly accessible and will be checked): Not applicable.

### Author agreement statement

We declare that this manuscript is original, has not been published before, and is not currently being considered for publication elsewhere. We confirm that the manuscript has been read and approved by all named authors and that there are no other persons who satisfied the criteria for authorship but are not listed. We confirm that all have agreed with the order of authors listed in our manuscript. We understand that the Corresponding Author is the sole contact for the Editorial process. He is responsible for communicating with the other authors about progress, submissions of revisions, and final approval of proofs.

### Data statement

All data presented in the present review is available online and can be accessed from the appropriate reference in the reference list.

### Provenance and peer review

Not commissioned, internally peer-reviewed.

### Ethical approval

Not applicable. All data presented in the study has been collected from open-source platforms with proper citation and/or from media sources.

### Please state any sources of funding for your research

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

### Author contribution

SKA conceptualization, whilst all authors (SKA, PKI, RMH, HMA, NAA, ASMAK, DSA, SAK and SOA) were involved in data collection and preparation of the manuscript. Supervision was done by SKA. All authors have read and agreed to the final version for publication.

### Consent

This study was not done on patients or volunteers, therefore no written consent was required.

### Registration of research studies

1. Name of the registry: Not applicable
2. Unique Identifying number or registration ID: Not applicable
3. Hyperlink to your specific registration (must be publicly accessible and will be checked): Not applicable

### Guarantor

Sirwan Khalid Ahmed. Email: [sirwan.ahmed1989@gmail.com](mailto:sirwan.ahmed1989@gmail.com).

### Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

### Acknowledgments

Not applicable.

### References

- [1] S.K. Ahmed, E.A.A. Rashad, M.G. Mohamed, R.K. Ravi, R.A. Essa, S.O. Abdulqadir, A.A. Khdir, The global human monkeypox outbreak in 2022: an overview, *Int. J. Surg.* 104 (2022), 106794, <https://doi.org/10.1016/j.ijssu.2022.106794>.
- [2] S.S. Morse, Public health surveillance and infectious disease detection, *Biosecur. Bioterrorism Biodefense Strategy, Pract. Sci.* 10 (2012) 6–16.
- [3] J.Y. Siu, Another nightmare after SARS: knowledge perceptions of and overcoming strategies for H1N1 influenza among chronic renal disease patients in Hong Kong, *Qual. Health Res.* 20 (2010) 893–904.
- [4] S. Baack, D. Alfred, Nurses' preparedness and perceived competence in managing disasters, *J. Nurs. Scholarsh.* 45 (2013) 281–287.
- [5] C. Ruderman, C.S. Tracy, C.M. Bensimon, M. Bernstein, L. Hawryluck, R.Z. Shaul, R.E.G. Upshur, On pandemics and the duty to care: whose duty? who cares? *BMC Med. Ethics* 7 (2006) 1–6.
- [6] M.A.E. Awan, M. Waseem, A.F. Sahito, A.M. Sahito, G. Khatri, M.A. Butt, S. Ramproshad, B. Mondal, M.M. Hasan, Monkeypox has devastated the world; should we prepare for the outbreak of a new pandemic? *Ann Med Surg* 79 (2022), 104051 <https://doi.org/10.1016/j.amsu.2022.104051>.
- [7] World Health Organization (WHO), Monkeypox: Key Facts, WHO, 2022. <https://www.who.int/news-room/fact-sheets/detail/monkeypox>. (Accessed 28 August 2022).
- [8] International Council of Nurses, Monkeypox - "Protect Nurses, Combat Stigma" Says International Council of Nurses, 2022. [https://www.icn.ch/sites/default/files/inline-files/PR\\_26\\_Monkeypox\\_Statement\\_FINAL.pdf](https://www.icn.ch/sites/default/files/inline-files/PR_26_Monkeypox_Statement_FINAL.pdf). (Accessed 28 August 2022).
- [9] K.L. Koenig, C.K. Beý, A.M. Marty, Monkeypox 2022 Identify-Isolate-Inform: a 3I tool for frontline clinicians for a zoonosis with escalating human community transmission, *One Heal* 15 (2022), 100410.
- [10] S. Rathnayake, D. Dasanayake, S.D. Maithreepala, R. Ekanayake, P.L. Basnayake, Nurses' perspectives of taking care of patients with Coronavirus disease 2019: a phenomenological study, *PLoS One* 16 (2021), e0257064.
- [11] Sirwan Khalid Ahmed, Halkawt Ismail M-Amin, Salar Omar Abdulqadir, Safin Hassan Hussein, Zheno Kareem Ahmed, Rawand Abdulrahman Essa, Awat Alla Khdir, Araz Qadir Abdulla, Rukhsar Muhammad Omar, Timely mental health care for the 2022 novel monkeypox outbreak is urgently needed, *Ann. Med. Surg.* (2022) 104579, <https://doi.org/10.1016/j.amsu.2022.104579>. In press.

Peshraw Khdir Ibrahim, Daria Shorsh Abdulrahman, Haval Mohammed Ali  
 Department of Nursing, University of Raparin, Rania, Sulaimani, KRG, Iraq

Ramand Mohammed Haji  
 Department of Community Health, College of Health and Medical Technology, Sulaimani Polytechnic University, Sulaimani, KRG, Iraq

Sirwan Khalid Ahmed\*  
 Department of Emergency, Rania Teaching Hospital, Rania, Sulaimani, KRG, Iraq

Raparin Research Group (RRG), Rania, Sulaimani, KRG, Iraq  
Department of Emergency, Rania Pediatric & Maternity Teaching Hospital,  
Rania, Sulaimani, KRG, Iraq

Nabaz Ali Ahmed  
Department of Nursing, University of Raparin, Rania, Sulaimani, KRG, Iraq

Salar Omar Abdulqadir  
Department of Nursing, University of Raparin, Rania, Sulaimani, KRG, Iraq  
Raparin Research Group (RRG), Rania, Sulaimani, KRG, Iraq

Sharmin Abdalrahman Karim  
Department of Nursing, University of Raparin, Rania, Sulaimani, KRG, Iraq

Aram Salih Mohammed Amin Kamali  
Directorate of Health – Garmian Administration, Sulaimani, KRG, Iraq

\* Corresponding author. Department of Emergency, Rania Teaching  
Hospital, Rania, Sulaimani, Kurdistan-region, Iraq.  
E-mail address: [sirwan.ahmed1989@gmail.com](mailto:sirwan.ahmed1989@gmail.com) (S.K. Ahmed).