

A Community Awareness Project on Monkeypox (Mpox) and Enhanced Nursing Care for Patients: A Comprehensive Review

Priyanka Bansal^{1,*}

Abstract

Monkeypox (Mpox), a rare viral infection transmitted from animals to humans by the monkeypox virus, has attracted increasing attention due to its ability to spread between humans and its clinical similarities to other poxvirus diseases, including smallpox and chickenpox. Enhancing nursing care for monkeypox patients is imperative to manage and contain its spread effectively. On 15th October 2024, B.Sc. Nursing Interns of Holy Family College of Nursing, University of Delhi, conducted a community awareness project on 'Mpox: Spreading awareness in the community setting' at the Primary Health Centre (PHC), Palam, New Delhi. This was orchestrated under the community health nursing department of the college to spread awareness among the population attending clinics at the PHC. This initiative involved 21 dedicated B.Sc. Nursing Interns who came together to execute a collaborative project. This project focused on key strategies to improve nursing care for monkeypox patients, with an emphasis on differential diagnosis, preventive measures, and treatment options. On 14th August 2024, the Ministry of Health and Family Welfare (MOHFW) issued an advisory to the PHC, Palam administration, declaring monkeypox (Mpox) a Public Health Emergency of International Concern (PHEIC). As a result, preparedness and response efforts have been reviewed at the highest levels. Given the ongoing detection of new cases in various countries, the possibility of monkeypox occurring in India cannot be ruled out.

Keywords: Monkeypox (Mpox), viral infection, smallpox, chickenpox, nursing care

INTRODUCTION

Monkeypox (Mpox) is a rare yet increasingly identified zoonotic viral infection caused by the monkeypox virus, which belongs to the Orthopoxvirus genus, including smallpox and cowpox viruses. The virus was initially discovered in 1958 in laboratory monkeys; however, the first human case was not recorded until 1970 in the Democratic Republic of Congo. Traditionally endemic to Central and

West Africa, Monkeypox has remained relatively confined to these regions for several decades. However, in recent years, particularly following the global outbreak of 2022, monkeypox has garnered significant attention owing to its occurrence in non-endemic areas, signaling a shift in its epidemiological patterns and raising concerns regarding its potential to spread globally [1–3].

The 2022 monkeypox outbreak was the first time the virus had spread extensively outside its traditional African habitats, affecting more than 100 countries across various continents. This

*Author for Correspondence

Priyanka Bansal
E-mail: priyanka8bansal@gmail.com

¹Assistant Professor, Department of Nursing, Holy Family College of Nursing (Affiliated to University of Delhi), Okhla, New Delhi, Delhi, India

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unprecedented spread of the virus made it clear that monkeypox, once a disease with limited reach, can cause a global health crisis, especially in countries with no previous history of the disease. The outbreak has exposed vulnerabilities in healthcare systems worldwide, especially in terms of surveillance, diagnosis, and timely interventions. As a result, health authorities and researchers have begun to focus on understanding the virus's transmission dynamics, the clinical presentation of the disease, and strategies to control its spread [4–6].

The role of nursing care in managing monkeypox has become a crucial aspect of both preventing the spread of the virus and ensuring the effective treatment of those infected. As frontline healthcare professionals, nurses are typically the first to assess patients with monkeypox. The ability to differentiate monkeypox from other similar viral infections, such as chickenpox or herpes, is essential for prompt diagnosis and initiation of appropriate care protocols. Nurses are also instrumental in ensuring that strict infection control measures, including isolation, personal protective equipment (PPE), and hygiene practices, are followed to reduce transmission risks [7, 8].

A major challenge in the management of monkeypox is distinguishing its symptoms from those of other viral infections. The early clinical signs of monkeypox resemble those of other illnesses, complicating diagnosis. Common symptoms include fever, headache, muscle pain, swollen lymph nodes, and a distinctive rash that usually begins on the face and spreads to other areas of the body. The rash progresses through several stages, starting as macules and then moving to papules, vesicles, pustules, and eventually scabs. Progression of the rash is a hallmark of the disease and helps differentiate monkeypox from other conditions. However, an accurate diagnosis often requires laboratory confirmation through polymerase chain reaction (PCR) testing, which is not always immediately accessible in all healthcare settings.

The prevention of monkeypox relies on a multifaceted approach that includes vaccination, education, and behavioral interventions. The JYNNEOS vaccine, which was originally developed for smallpox, has shown efficacy in preventing monkeypox, particularly among individuals at a high risk of exposure. In addition to vaccination, healthcare providers must promote preventive measures, such as proper hand hygiene, the use of PPE, and the safe handling of animals in endemic regions to reduce the likelihood of zoonotic transmission. Public health efforts must also focus on educating the public about the nature of the disease, its transmission routes, and the importance of seeking timely medical care in cases of potential exposure [9].

Therapeutic interventions for monkeypox primarily focused on supportive care. Currently, there are no specific antiviral treatments approved for monkeypox, although some antiviral agents used for smallpox, such as tecovirimat, have shown promise in treating monkeypox infections. Nurses play a vital role in administering supportive care, managing symptoms, and providing psychological support to patients who may be anxious or distressed because of isolation and potential complications of the disease.

This review aimed to emphasize the significance of enhanced nursing care in managing monkeypox, focusing on differential screening, prompt diagnosis, preventive measures, and supportive therapies. Given the growing global burden of monkeypox, strengthening the readiness of the healthcare workforce to handle such outbreaks is crucial for effective disease management and public health protection [10].

BACKGROUND

Epidemiology and Transmission

Monkeypox is endemic to the central and western African regions, where it is typically transmitted from animals to humans. Human-to-human transmission of monkeypox occurs via direct contact with infectious skin lesions, respiratory droplets, or contaminated surfaces and materials. Recent outbreaks in countries without endemic cases have underscored the need for heightened awareness and improved healthcare.

Clinical Presentation

The symptoms of monkeypox resemble those of smallpox but are typically less severe. The incubation period ranged from 5 to 21 days, followed by fever, lymphadenopathy, and a characteristic rash that evolved through stages. Healthcare providers must recognize these symptoms early to implement appropriate nursing care and preventive measures.

Differential Screening and Diagnosis

Importance of Differential Screening

Given the clinical similarities between monkeypox and other viral infections, such as smallpox, chickenpox, and herpes simplex virus infections, differential screening is crucial. Nurses play a pivotal role in this process by employing detailed patient history, clinical examination, and symptom assessment to identify potential cases of Mpox.

Diagnostic Methods

1. *Clinical assessment*: The initial evaluation involves assessing the patient's history of exposure, recent travel to endemic areas, and vaccination status against smallpox.
2. *Laboratory testing*: Confirmatory testing is essential and may include:
 - i. *Polymerase chain reaction*: The gold standard for diagnosis, PCR, can identify monkeypox viral DNA in skin lesions, blood, or other bodily fluids.
 - ii. *Serological testing*: Enzyme-linked immunosorbent assays (ELISAs) can detect antibodies against the monkeypox virus, although they are not commonly used for acute diagnosis.
3. *Imaging studies*: In some cases, imaging techniques (such as MRI) may be utilized to assess complications or differentiate them from other conditions.

Enhanced Nursing Care

Patient Assessment

Effective nursing care begins with thorough patient assessment, including:

1. *Vital signs*: Monitoring fever, heart rate, and respiratory rate.
2. *Dermatological evaluation*: Assessing skin lesions for characteristics such as size, distribution, and evolution.
3. *Lymphatic assessment*: Evaluating lymphadenopathy for signs of inflammation or infection.

Infection Control Measures

Nurses must implement strict infection control protocols to prevent transmission. This includes:

1. *Isolation protocols*: Patients with suspected or confirmed monkeypox should be isolated in negative-pressure rooms to minimize airborne transmission.
2. *Personal protective equipment*: Nurses should wear appropriate PPE, including gloves, gowns, masks, and face shields when caring for patients.

Patient Education

Educating patients and their families is crucial to enhancing care. The key areas of focus include the following.

1. *Understanding monkeypox*: Providing information about the disease, its transmission, and symptoms.
2. *Preventive measures*: Educating patients on proper hygiene practices, including regular handwashing, and minimizing close contact with others.

Prevention Measures

Vaccination

Vaccination against smallpox using the ACAM2000 or JYNNEOS vaccines has shown effectiveness in preventing monkeypox. High-risk individuals, including healthcare workers and those in contact with infected patients, should be prioritized for vaccination.

Public Health Initiatives

Nursing professionals can contribute to public health initiatives by:

- *Surveillance*: Monitoring and reporting suspected cases to public health authorities.
- *Community education*: Engaging in outreach programs to inform the community about monkeypox prevention.

Quarantine and Contact Tracing

After exposure, individuals may need to be quarantined to prevent further viral spread. Nurses play a key role in contact tracing, helping identify and monitor those who may have been exposed to the infection.

Therapeutic Interventions

Symptomatic Management

Currently, there is no specific antiviral treatment for monkeypox infection. Symptomatic management is critical and may include the following.

1. *Pain management*: Utilizing analgesics for pain relief associated with lesions.
2. *Antipyretics*: Administering medications like acetaminophen to reduce fever.
3. *Hydration*: Ensuring adequate fluid intake to prevent dehydration.

Antiviral Therapies

While investigational, antiviral therapies may be considered in severe cases:

1. *Tecovirimat (TPOXX)*: an antiviral drug that has shown efficacy against Orthopoxvirus and may be used in patients with severe disease or a high risk of complications.
2. *Cidofovir*: Another antiviral option, although not U.S. Food and Drug Administration approved, specifically for monkeypox.

Supportive Care

Comprehensive nursing care should include psychological support for patients and address potential anxiety and social stigma associated with the disease. This may involve:

- *Counseling services*: Providing access to mental health resources.
- *Peer support groups*: Facilitating connections with others who have experienced monkeypox.

DISCUSSION

This article provides an overview of the current understanding of monkeypox, emphasizing the importance of nursing care in various aspects of patient management. As the global landscape of infectious diseases evolves, continuous education and adaptation of care practices are essential to effectively address such emerging threats.

CONCLUSION

As monkeypox continues to present challenges in public health, enhanced nursing care is paramount for managing and containing the disease. Nurses play a critical role in the response to Mpox through effective differential screening, accurate diagnosis, implementation of preventive measures, and provision of therapeutic interventions. Continued education and training in recognizing and managing monkeypox will empower nursing professionals to address this emerging health concern and provide optimal care to affected patients.

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