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Emergence and re-emergence of infectious diseases in South Asia: A call for action

Although the coronavirus disease 2019 (COVID-19) pandemic has not come to an end, monkeypox (MPX) multi-country outbreak, a zoonotic viral disease, is now spreading worldwide [1]. MPX has infected total 62,406 confirmed cases, 61,827 of them have occurred in places without historical records of MPX across total 104 places, 97 of them have not reported MPX historically [2]. Given this quick spread, the World Health Organization (WHO) declared MPX as Public Health Emergency of International Concern (PHEIC) on July 23, 2022 [3].

MPX is caused by a double-strand DNA virus, called monkeypox virus (MPXV) which could transmit from animal species to human. MPXVs caused by a double-strand DNA virus called monkeypox virus (MPXV), which could transmit from animal species to humans. It is possible for an animal to transmit disease to a human through bites, scratches, the cooking of animals for food, or, directly and indirectly, contact with bodily secretions or lesion components [4]. Human-to-human transmission mostly happens when biological fluids like blood, pus, or fluid from skin lesions physically interact with one another’s lesion surfaces [5]. Breathing-related droplets may only travel a short distance; therefore, indirect contact with the lesion component. While there is varying evidence of sexual transmission in the continuing non- endemic areas, most cases have been documented among males who have sex with men [6]. Congenital MPX can be transmitted via the placenta from the mother to the fetus and contact both at labor and afterward.

Despite lower rates of infectious diseases, South Asia still has twenty-five percent of the global totals and is responsible for a significant proportion of the worldwide burden. In the 1950s and 1960s, there were two influenza pandemics are another example of how research history supports the claim that in the South region, the ideologies of endemic, increase in chronic, and pandemic diseases intermingled, giving rise to new conceptions of shared risk and "cooperative citizenship." [7]. The problems posed by infectious diseases, such as TB, HIV, and malaria, have been exacerbated by new and developing dangers, including dengue, chikungunya, illnesses linked to healthcare, and antibiotic resistance [8]. These new and returning infectious disease threats pose a risk of economic disruption and potentially significant misery and numbers of deaths in south Asia.

Information obtained from the Intensive Care National Audit and Research Center in the UK, which revealed approximately one-third of patients with COVID-19 admitted to intensive care units, were from the ethnic group of Blacks, Asians, and Minorities, provided evidence in support of the belief that individuals of South Asian descent may be more likely to experience adverse outcomes [9]. Five out of the ten nations have a lower density of healthcare workers than what the WHO considers being an appropriate level. There are also very few healthcare facilities available, as measured by the number of hospital beds per person in south Asia region [10]. The region is more vulnerable to zoonotic disease outbreaks due to poverty, limited healthcare infrastructure resources, a lack of healthcare personnel, and a shortage of epidemiologists and skilled veterinarians [8].

Several antivirals may be helpful for MPX, and control of the epidemic is authorized by the centers for disease control and prevention [11]. The study of MPX has gone on without a period of silence since it was first identified in people more than 50 years ago. Its similarities to smallpox (SMPX) allow it to be treated in various ways. SMPX immunization is 85% successful in treating MPX, according to the WHO [1]. Thus, in contrast to the coronavirus, knowledge is abundant. Scientists’ familiarity with epidemiologists tremendously helped in managing it by understanding its communication mechanism, clinical characteristics, assessment, therapy, and mitigation. However, reducing the risk of infection is the key to preventing MPX. Since they have the most direct contact with patients and are a substantial source of contamination to infected individuals in healthcare settings, healthcare workers (HCWs) are projected to be at an increased risk of severe [10]. Having a comprehensive understanding of the WHO’s listed components of a health system, such as essential care provision, a frontline healthcare workforce, health information systems, ease of access to prescription medications, funding, as well as management, will make it easier to address issues relating to community health systems [12]. Additionally, communities must be included in and actively involved in the planning, provision, and evaluation of health care. The present COVID-19 outbreak and recent cases of contagious illnesses like Ebola have made this clear.

Increased knowledge in South Asia can also bring on by cross-border travel and simple access to remote, likely MPX-endemic regions. Therefore, the main problem is not that zoonotic diseases spread to people but that they appear to be occurring more frequently. Even some vector-borne illnesses, such as dengue, have witnessed a comeback in South Asia over the past 50 years, also driven by urbanization [13]. Climate change will accelerate the spread of zoonotic events in manner similar to how significant changes in land use, rising urbanization, and global interconnectedness are well known to drive the advent of disease through increased human-animal interaction and accelerated transmission rates [14]. It’s also critical to realize that forests play a significant role in biodiversity and that protecting them will protect human health by lowering the danger of zoonotic illnesses. Given that this practice has been linked to the current COVID-19 issue, there is an urgent urgency to shut down the world’s wildlife marketplaces.

Community-based research is crucial to overcome the socio-cultural obstacles that public health initiatives face. It is also crucial to comprehend local populations’ knowledge, attitudes, and perceptions regarding the social and ecological aspects that influence zoonotic
infectious diseases and their behavior in seeking health care [10], which may lead to well-informed change. In advanced and emerging countries, however, relatively limited community-based research is being conducted to reduce infectious epidemics, as indicated by the few published data demonstrating this [15]. This inadequate research funding gives academics from the Global North, who has more significant money and influence than local scientists and partners from the Global South, a means of conducting studies and publishing their findings [16].

The public health system has to be addressed since it was clear that there was a shortage of significant human resources and public health infrastructure [10]. The fragile health services in the area are already suffering collateral damage due to the disruption to their regular operations. The increased number of patients is straining hospitals and healthcare services. There have been reports of a sharp decline in testing levels in Bangladesh and Pakistan [17]. Despite this, the South Asian nations have demonstrated great tenacity and resolve in their fight against the virus by implementing strict yet preventive isolation precautions early in the pandemic [17,18]. The creation of national development plans, their timely modifications with input from the implementation of best practices in pandemic preparation across the government and private sectors is essential.

Therefore, societal mitigation of zoonotic disease implications for humans and animals depends on people’s perceptions and behavior. These very populated South Asian areas did not hesitate to close factories and other non-essential establishments. Prior studies focused on public perceptions and knowledge of the possible harms of a single or two distinct zoonoses at once [10].

MPX, in contrast to COVID-19, has been known to science since its first confirmed case in 1970 and has many characteristics with its closely related [19], the eliminated SMXP. The SMXP vaccine was one of the factors reducing risk in the affected country. However, prior to 1980, those who received the SMXP vaccine reported declining immune memory and an ever-rising risk to the unprotected population [13]. The ultimate goal of eliminating MPX in the south Asian region depends on concentrating on immunization and disease prevention efforts, as well as closely examining the results of some projects. Therefore, it is essential to establish cross-border partnerships with global organizations like One Health to halt the epidemic of MPX at its source and throughout its progression. As well as other mother organizations including the FOA, OIE, and WHO [18]. At the same time, regional collaboration among South Asian nations can aid in resolving current issues. The South Asian nations have also used social media, online learning, remote work, direct benefit transfers, virtual support for delivering health services, face recognition technology, and thermal scanners to identify infected individuals in their fight against the COVID-19 pandemic [20]. South Asia’s data infrastructures and digital informational technology might help the region address major challenges in the post-COVID-19 era.

Ethical approval

This study is exempt from ethical approval in out institution.

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