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## Impact of COVID-19 pandemic situation on persons with visual impairment

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### Abstract

Persons with visual impairments are more vulnerable to severe acute respiratory syndrome coronavirus-2 (SARS-CoV 2) than people without visual impairment. This means that more than 253 million people around the world will be at increased risk of COVID-19. The current pandemic, followed by a nationwide emergency shutdown to slow the unprecedented spread of the virus, will have a severe impact on persons with visual impairments and even put their lives in danger in the long term. Many restrictive and control measures, including adopting new behavior changes (e.g., social distance when commuting outdoors, limited contact, or tactile contact) recommended by the government, will pose enormous challenges for people with vision loss. This severe impact, including challenges in accessing health care, can be minimized through inclusive service approaches, involving the blind, caregivers, family members and health professionals, to a large extent alongside the community, and finally, support to improve the general situation results. The government, along with the private for-profit and non-profit sectors, should consider initiating these inclusive approaches when planning responses to the pandemic. Indeed, the current COVID-19 pandemic offers health planners and decision makers from various organizations across India the opportunity to implement disability care reform. The impacts of the pandemic and the lockdown can be substantially reduced through planning and policy before an emergency occurs in the future.

**Keywords:** persons with visual impairment, COVID-19, health care, pandemic situation

### 1. Introduction

Globally, more than 6.5 million people are affected due to the COVID-19 and 387,155 deaths as of 6th June 2020, since it was declared a serious public health concern and pandemic by the World Health Organization (WHO) in March 2020<sup>[1]</sup>. At the same time, more than 220,421 people are confirmed with the disease and 6348 deaths in India<sup>[23]</sup>. The COVID-19, caused by the severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2), is primarily transmitted through respiratory droplets or direct contact with a contaminated surface or fomites by hands, then touch to mouth, nose, and eyes. Typical symptoms of COVID-19 are fever, cough, shortness of breath with less common symptoms such as myalgia, diarrhea, and anosmia<sup>[4-5]</sup>.

More extensive evidence shows that SARS-CoV-2 infection and serious illnesses occur disproportionately among the minority population, e.g. the BAME community in the United Kingdom (UK), socioeconomically disadvantaged people and people with underlying health problems<sup>[6-7-8]</sup>. Likewise, the COVID-19 pandemic is likely to affect persons with disabilities more than people without disabilities<sup>[9-10]</sup>. Low vision and blindness are major causes of disability. Persons with visual impairments (low vision and blindness) are more likely to be infected with SARS-CoV 2 than persons with visual impairments<sup>[9]</sup>. This means that approximately 253 million people worldwide, more than two-thirds of them from low- and middle-income countries, will be at increased risk of becoming infected with SARS-CoV-2<sup>[11-12]</sup>. Similarly, in India, approximately 13 million people with functional low vision problems (<20/60 at positive light perception) will be vulnerable to contracting this deadly virus. The number will be greater if people with no light perception are included<sup>[13-14]</sup>. Most of this visually impaired population resides in rural areas of the country and belongs to lower socioeconomic groups. Morbidity and mortality are likely to be higher if these groups of people are affected by the COVID-19 disease in India, although the level of risk varies based on the degree of visual impairment<sup>[9]</sup>.

The increased likelihood of contracting the virus, increasing morbidity and mortality, could be due to many potential factors associated with persons with visual impairments.

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First, the lack of adequate knowledge of COVID-19 resulting from the absence of accessible information specifically designed for persons with visual impairments (PwVDs), especially those living in rural areas. Given the massive public announcement made by the government, awareness of COVID-19 may be high, but knowledge in terms of cause, transmission, prevention technique and protective measures may be lacking due to a lack of accessible information. In fact, the current ad focuses primarily on the general public, which may not be suitable or user-friendly among PwVDs. They may also have difficulty when they want to access information or websites are not suitable for screen readers. Second, the frequent need for personal assistance or support from others in carrying out their basic and instrumental daily activities especially for a blind or visually impaired individual or couple, for example, when crossing the street, buying groceries and vegetables. Thirdly, inadequate knowledge of prevention and use of personal protective measures such as wearing masks, hand-washing leading to improper practices, as the technique of using the mask, hand washing is based on the visual function; Fourth, lack of awareness and insufficient knowledge of the disinfection of their assistive devices, for example, a blind person may not be aware of the disinfection of the tips of folding sticks during use, magnifying glasses purchased in opticians, devices tactiles used in schools or colleges or borrowed from the library until advised of the need for disinfection. Fifth, people with vision loss rely on or depend on touch and tactile senses to carry out their routine activities or movements outdoors, which can further increase the chance of contracting the virus infection. Sixth, a visually impaired person is often the victim of neglect and ignorance in society <sup>[15]</sup>. Persons with visual impairments are often discriminated against and stigmatized, which generates inequalities in access to information and health services <sup>[16-17]</sup>. For example, the literacy rate among visually impaired people is low compared to visually impaired people. The World Bank reported that the illiteracy rate among PwVDs is 80% in India <sup>[18]</sup>. Likewise, the rate of unemployment and inaccessibility to health services for persons with disabilities is exceptionally high <sup>[19]</sup>. Seventh, inaccessible physical environment, infrastructure and poor access to livelihoods compared to sighted people. There is a lack of structures or buildings that have a barrier-free access plan or inclusive housing. Eighth, the lack of adequate personal hygiene and environmental hygiene among the blind can further increase the risk of infection. Visually impaired people, especially low vision students, are likely to have a decrease in personal hygiene compared to visually impaired students. For example, in a study conducted in schools for the blind in the city of Ismailia, Egypt, a large number of students show little knowledge of hand-washing, face and ear care, oral hygiene, change of teeth, 'dress, nail cutting, while having good practices for other components of hygiene <sup>[20]</sup>. A study conducted in Turkey reported that menstrual hygiene practices among visually impaired women were not at the desired level <sup>[21]</sup>. Furthermore, a blind or partially sighted couple living independently may have poor environmental hygiene due to inadequate housing attributed to poverty or lack of personal assistance. Ninth, the blind are often associated with poverty and basic health conditions. A large body of evidence shows that poor socioeconomic status and associated underlying health problems are common among

PwVDs <sup>[22-23]</sup>. Tenth, the nationwide emergency freeze has effects such as abrupt disruption of the support system, including personal assistance, and possible financial hardship that will have serious consequences on health and well-being.

Additionally, poor availability and accessibility of eye care services can worsen vision impairment, further increasing the severity of the disability.

## 2. Reducing the Impacts of the COVID-19 Pandemic

On March 24, 2020, the Indian government announced the first phase of the national lockdown for 21 days to mitigate and curb the unprecedented spread of COVID-19 in the country. This followed the closure of transport, the closure of shops, markets, schools, universities, restaurants, outpatient services in hospitals, barring emergency procedures and saving lives and basic necessities (medicines and food). The government recommends many behavior change measures such as strict social distancing, staying at home, washing hands and wearing masks, etc. The lockdown was extended as a second phase from 15 April to 3 May 2020, then a new extension (third phase) was announced from 4 May to 17 May 2020, followed by the fourth and fifth lockdown phases with a couple of new rules and new relaxations after the completion of the third phase.

This emergency lockdown adopted by the government poses enormous challenges, including access to medical care, for the blind, which is compounded by the threats and anxieties caused by the pandemic. The adoption of these new behaviors will have great limitations or difficulties in practice among these groups of people, for example, social distancing may not be possible for an individual with vision loss; learn the steps for hand-washing, which is mainly based on visual functions. Visually impaired people often depend on others for their livelihood and need personal assistance to support the activities of daily living. In such a situation of confinement and pandemic, a change in the support system for people with vision loss, including the economic one, is very necessary. A set of measures is needed to be adopted to ensure the continuum of care, services, and other facilities during the COVID-19 pandemic for PwVDs. Therefore, we need to develop a support system that is doable and workable to ensure continued assistance and facilitation, while alleviating the fear and anxiety that PwVD endures.

We suggest the following three important key areas to mitigate the impact of the COVID-19 pandemic on the blind. This article will also provide guidance for rehabilitation professionals or ophthalmologists as they plan their vision rehabilitation and support system for the blind during the outbreak or in the future.

### 2.1 Social Restrictions

A study on the impact on COVID-19 transmission with a social distancing measure reported a substantial reduction in COVID-19 transmission <sup>[26]</sup>. Persons with visual impairments (low vision and blindness) are motivated to ensure social or physical distancing or to avoid crowded areas and to restrict social movements and stay at home during the COVID-19 pandemic. If movement in the open air is required, the long mobility cane can be used to maintain the norm of social distance, or if it requires sighted guidance for short distance movement, asking the sighted person to hold the other end. The barrel (not at the tip) will

be a better option than direct body contact. They should be well informed and educated about a greater chance of becoming infected due to COVID-19, as well as awareness and knowledge of the disease.

## 2.2 Personal Factors

As a policy of lockdown, the Government of India advises certain measures to be implemented at the individual levels. For example, wearing face or cloths masks, frequent hand wash with soap, limits unnecessary physical contact to others and surfaces with potentially contaminated, avoid touching to nose or eyes, etc. These measures are to minimize the risk of exposure to the virus causing the COVID-19. Therefore, it is important to adopt such new behavioural aspects in the best possible way during the pandemic in Persons with visual impairment. Meanwhile, it is also critical to ensure their preferences and values when implementing such a personal behavioural change. Proper education, counselling and training need to be done keeping in mind their dignity and their unique ability.

## 2.3 Environmental Factors

Article 25 of the United Nations Convention on the Rights of Persons with Disabilities reaffirms the right of persons with disabilities to attain the highest possible standard of medical care without any form of discrimination based on disability<sup>[27]</sup>. Therefore, in line with the principle of the UN convention, visually impaired people should not be ignored or leave their needs behind during the national closure due to the COVID-19 pandemic. Optimizing environmental factors to improve the overall outcome of a person living with vision loss during emergency confinement requires collaborative work between visually impaired people, caregivers, family members, health and rehabilitation professionals, and community members for support. Persons with visual impairments often rely on caregivers or assistants to carry out their basic activities of daily living (ADL) and instrumental activities of daily living (IADL). These routine activities can be managed through collaboration and coordination between these core groups. The government has a responsibility to simplify this inclusive approach during the pandemic and encourages the community to be inclusive. We propose the following recommendations when responding to the pandemic in the context of environmental factors:

1. Supportive environment to better respond to the needs of daily life in the context of decisions made by the disabled with the participation of the public or private non-profit or profit sector
2. Creating an enabling environment for caregivers or community members in providing essential services to visually disabled persons during the lockdown, for example, special permission to commute
3. Education and training on safety, social distancing and personal protection measures for the disabled, caregivers, family members during the pandemic, for example, mask use technique.
4. Creation of easily accessible physical environments and infrastructures, eg. fountain for washing hands, movement in the open air
5. Helping to access the health services and support that persons with disabilities need during the pandemic or after contracting the disease.
6. Sensitization of the core groups about equal

opportunities, dignity, respect while providing services to visually impaired

7. Accessible formats (simple and easy to understand) to obtain information on the COVID-19 disease. Government websites that contain all information on COVID-19 are not accessible to blind and visually impaired people for reading with screen reader software or are difficult to understand among the blind. To avoid potential misinformation and misunderstanding about COVID-19, it is of the utmost importance to help the PwVD disseminate information about COVID-19 with correct and appropriate formats or programs. Such information will also help reduce fear and anxiety. Therefore, the appropriate formats for COVID-19 are essential through which the PwVD can access the information at any time. Of the many existing examples, one is the Braille manual for HIV and AIDS in Odisha<sup>[28]</sup>.
8. Financial support to persons with visual impairment during the lockdown periods either from government or any other external funding, e.g., Non-government Organisations
9. The tele-health consultation to improve the awareness, knowledge and training to any of the family members or caregivers or community volunteers
10. Arranging special services for students with visual impairment stranded in schools for the blind. Lockdown also results in the closure of many residential schools for the blind with shutting down the transportation. Students stranded in these schools need counselling to relieve anxiety and fear about the COVID-19 and appropriate information about the emergency lockdown and the pandemic. They need to be supported in accessing health care services if required, educated on all safety and precaution measures in the correct way. During the lockdown periods, special school teachers or teachers are not able to commute to the schools to educate and train students. PwVDs or students who came for vocational training in Delhi could not return to their hometown due to the lockdown. Tele-health consultation service helps to find accommodation at either at schools or centres by a run non-governmental organization, e.g., Vision rehabilitation & Training Centre, Community Ophthalmology, Dr. Rajendra Prasad Centre for Ophthalmic Sciences, All India Institute of Medical Sciences, New Delhi runs tele-health and tele-rehabilitation services with and supports to PwVDs to get temporary accommodation during the lockdown periods (personal communication with rehabilitation staff).

Since face-to-face interaction between health care workers and the visually impaired or health care workers or family members is not possible during confinement, an alternative strategy should be planned to educate all necessary information through telemedicine or teleconferencing methods. Videoconferencing is a preferable technique and would be more effective than another mode of communication. Rehabilitation professionals or the healthcare team can take the initiative to establish a communication center, as the hospital is the first point of contact for a person with vision loss. The health or rehabilitation team should start developing a plan with core groups of inclusive services, which are deemed most



appropriate for disabled care at the time of the pandemic. The Indian government should consider opening a special communication platform for the blind or disabled to easily access health care needs. During the lockdown, the government must grant special permission to allow the caregiver to transfer to work, if any. You can launch a disabled compatible smartphone app that can connect with a volunteer registered in the app, via video or audio calls. For example, the "Be My Eyes" application helps visually impaired people to connect with the first available (sighted) volunteer who registers in the application via video calls, thus assisting the disabled in an emergency or any other assistance if needed.

### 3. Conclusion

The current COVID-19 pandemic, followed by national shutdown to mitigate transmission of the virus, poses many challenges, including access to medical care, for the lives of the blind. A sudden disruption of the support and care system for these groups of people will have a serious impact on their health and well-being, activities of daily living, socioeconomic, livelihood and ultimately compromise the quality of life and may even put their lives in danger. Ensuring optimal health and wellness outcomes among visually impaired people is vital during the current and subsequent pandemic. These severe impacts can be avoided or minimized by planning inclusive services, involving persons with disabilities, caregivers, family members and health professionals, together with the community to a large extent (core group). The government or any other organization can take the initiative to initiate an inclusive approach for the blind and improve access to healthcare while planning the response to a pandemic. Indeed, the current COVID-19 pandemic offers an opportunity for health planners and decision makers in governments, non-governmental organizations, or other private sectors, for the need for reform towards the inclusion of persons with visual impairments, provided that there is a future emergency block. The impacts of the lockdown can be minimized if planning and policies are in place before any emergency occurs.

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