



COVID-19: Diagnosis, Management and Response

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Background: COVID infection 2019 (COVID-19) is identified as a disease caused by Corona virus formally known as severe acute respiratory syndrome (SARS-CoV-2), which was first detected in Wuhan City, Hubei Province, China, amidst of an outbreak of respiratory sickness cases.

Summary: As there is no affirmed total course of treatment for the Novel Coronavirus, the best way to handle it is by playing it safe, its administration and early reaction. Segregation and disinfection go inseparably with regards to dealing with a COVID positive patient. In any case, the predetermined number of clinical office accessible is blocking the cycle of control and anticipation for a particularly number of infected patients.

Conclusion: As the pandemic is advancing, more examinations and exploration is needed to effectively deal with the spread of the novel Corona virus. Foundation improvement and arrangement of clinical office and gear is the preminent prerequisite for early reaction and treatment.

Keywords: Covid-19; management; response; diagnosis; isolation; sanitization.

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1. INTRODUCTION

Severe acute respiratory syndrome coronavirus (SARS-CoV)-2 was reported as the causative agent behind a pneumonia epidemic affecting the city of Wuhan in January 2020. Renamed later as COVID-19 virus, it causes a spectrum of illnesses ranging from flu-like symptoms to complexities like severe lung injury. The World Health Organization declared it a pandemic due to the rapid spread and being highly infectious. The COVID virus particle is spread through inhalational droplets delivered into the air when an infected person coughs or sneezes. The specific wellspring of infection has not been followed at this point. Every microorganism has its own brooding period for this situation apparently manifesting in patients within 14 days of presentation. [1,2].

Coronavirus manifestations for the most part include:

1. Cough
2. Fever or chills
3. Shortness of breath or difficulty breathing
4. Muscle or body throbs
5. Sore throat
6. Loss of taste or smell
7. Diarrhoea
8. Migraine
9. Weakness
10. Nausea or vomiting

The most testing factor are the asymptomatic patients as they don't show a specific manifestations and go undetected truly however end up being irresistible. Self-separation (Quarantine) and incessant sterilization are a portion of the strategies to prevent the spread from such asymptomatic patients [3].

Clinical administration of COVID-19 incorporates disease anticipation, sterilization and preventive steps and strong consideration. Except if you have extreme manifestations, you can doubtlessly treat them at home, the manner in which you would for a cold or this season's virus. A great many people recuperate from COVID-19 without the requirement for clinic care. The main activity is to try not to contaminate others, particularly the individuals who are more than 65 or who have other ailments, for example, hypertension and diabetes. Individuals with chronic obstructive pulmonary disease (COPD)

or any respiratory ailments are additionally at higher danger for extreme ailment from the infection. The danger of contracting COVID-19 virus in patients with COPD is discovered to be 4-overlay higher than patients without COPD [4].

Within the context of the Global Humanitarian Response Plan, health cluster teams and partners are responding to the COVID-19 pandemic worldwide in response to the following strategic priorities. Contain the spread of the pandemic and reduce morbidity and mortality. The loss of human properties and rights, social stability and livelihoods should be minimized. Protect, support and campaign for shelter of refugees, displaced people and organize vulnerable communities [5].

2. DIAGNOSIS OF COVID-19

Finding is the main thing to begin the treatment of COVID-19. Huge spreading limit and deteriorating delayed consequences of the Covid illness 2019 has just made the testing part more significant. The test, follow, treat model is exclusively founded on testing results. It should be done as right on time as conceivable with randomized testing strategies to screen populace or segment of populace for the COVID-19. In the event that it isn't done at beginning phase, at that point it isn't excellent for the patients as their wellbeing declines and to medical care framework as the spreading capacity is duplicated complex with increment in days prior to conceding patient to the clinic. A few tests are referenced in the rules turned out by World Health Organization (WHO) just as individual nation's wellbeing division to analyze individuals [6]. Reverse transcript polymerase chain reaction (RT-PCR) which works on RNA amplification and if critical threshold (Ct) value is according to guidelines then the concerned patient is said to be harboring the coronavirus. Nasal or oral swabs are gathered by sticks and afterward put to test. In spite of the fact that odds of manual mistake and scattering of tests are there yet it is considered as best quality level test in deciding if the individual is tainted with the Covid or not. Fast antigen immune response test is additionally utilized in diagnosing the populace. The blood tests are taken and tried for specific antibodies which are supposed to be created after the contamination of Covid. However, it isn't the last test as the affirmation of the RT-PCR test is important. Immune response test is useful in

checking the episode of the illnesses specifically hotspot particularly in blocked metropolitan group after which important devoted and focused on endeavors can be utilized to build the effectiveness of the assets utilized for the regulation of the COVID-19 [7]. Other test is additionally defined, for example, test situated in spit, oximeter test however there are auxiliary test and need affirmation structure previously mentioned two tests. To decrease the odds of blunder, legitimate preparing and dispersal of standard working methodology should be never really care experts gathering tests. For instance, the heap of the infection once in a while moves to bring down finish of the respiratory plot then the nasal swab will show up erroneously negative. Appropriate precautionary measure should be taken to keep away from these mistakes [8]. When the determination is completed and individual is tried positive then extraordinary treatment courses are continued in suggestive and asymptomatic patients. Suggestive patients which are indicating side effects, for example, fever, cough, cold and some serious manifestations like loss of taste and smell, diarrhea, retching, dyspnea are hospitalized and treated in ordinary ward if there should arise an occurrence of previous condition and in Intensive consideration unit if vital. Seclusion and isolate are two apparatuses accessible at the removal of the wellbeing specialists which can break the chain of the transmission. Home segregation is additionally perceived as real approach to get individuals treated because of expanding trouble on medical care framework. Normal visit via prepared experts, for example, specialists, medical attendants and so on are made to check the patients and check whether hospitalization is required or not [9].

3. REVERSE TRANSCRIPTASE POLYMERASE CHAIN REACTION

The indispensable COVID-19 analytical testing strategy in the United States remains polymerase chain reaction (PCR). This is a similar form of test that was used when it first showed up in 2002 to recognize severe acute respiratory syndrome (SARS) [10].

To gather an example for this test, a medical care supplier will probably perform one of the accompanying:

- Swab your nose or the rear of your throat

- Suction liquid from your lower respiratory parcel
- Take a salivation or feces test

Specialists at that point separate nucleic corrosive from the infection test and enhance portions of its genetic sequence through a reverse transcription PCR (RT-PCR) procedure. This basically provides for a bigger example for virus examination. Two qualities is seen inside the SARS-CoV-2 genome.

Test outcomes are:

- Positive if the two qualities are found
- Inconclusive if just a single quality is found
- Negative if neither one of the genes is found

A chest CT scan can also be advised by your doctor to help diagnose COVID-19 and ascertain its severity.

PCR is utilized broadly for doing atomic based demonstrative tests. It is utilized to distinguish infections liable for illnesses, for example, HIV, Ebola, African pig fever, foot-and-mouth sickness and so forth RT-PCR test, and antigen tests (Serology) are two distinct kinds of tests did for the analysis of COVID-19. The Real-Time Reverse Transcriptase PCR is reasonable to recognize the COVID-19 infection as it contains just Ribonucleic Acid. It is the most sensitive method for mRNA identification. It measures the presence of a specific hereditary material of the infection or any microorganism.

Ongoing RT-PCR is stacked with fluorescent colors as markers. Ongoing RT-PCR helps specialists, mostly researchers or virologists, to break down the outcomes immediately. RT-PCR test recognizes the Covid after a nasopharyngeal swab is gathered from a patient. It distinguishes the infection regardless of whether the viral burden is less. The significant favorable position of Real-Time RT-PCR is that it gives quick outcomes [11].

Coming up next are the RT-PCR Test strategies (rules) to sum things up that are useful in the determination of COVID-19.

Stage 1:- The COVID-19 infection by and large assembles in the throat or inside the nose of an individual. The RT-PCR Test finding measure begins with test assortment by swab from the referenced body parts.

Stage 2:- The cells and core are lysed by treating them with various substance arrangements. At long last, the example just contains DNA and RNA. It is a blend of the leftover hereditary material of the individual and the RNA of the infection.

Stage 3:- The RNA is then changed over to DNA utilizing a particular protein by means of converse record. Short parts of DNA are additionally added to make a combination.

Stage 4:- If there is an infection in the example, at that point the short pieces of the DNA accord to the objective divisions of the viral DNA.

Stage 5:- The combination is then placed into a RT-PCR machine. The RT-PCR machine warms and cools the blend by going it through temperatures to light explicit substance responses. Through this cycle, the objective segments of viral DNA get their new indistinguishable duplicates.

Stage 6:- The RT-PCR COVID-19 Test machine does rehashed cycles with the example. This aides in duplicating the target segments of the virus particle. Toward the finish of each cycle, the quantity of duplicates of the viral DNA gets multiplied. Thus, many new copies of the virus DNA segments from every strand of the infectious agent are produced before the finish of the cycle. The RT-PCR testing time is just 5-10 minutes, however the whole method takes up to 4 to 8 hours.

4. IMPORTANCE OF CT-SCAN IN DIAGNOSIS OF COVID-19

Chest CT has a likely job in the finding, discovery of intricacies, and forecast of Covid illness 2019 (COVID-19). Execution of suitable preparatory wellbeing measures, chest CT convention improvement, and a normalized revealing framework dependent on the pneumonic discoveries of COVID per say would upgrade the significance of CT scan chest. Whatever the case may be, CT scan of chest assessments could prompt either false positive or false negative outcomes. Besides, the additional estimation of chest CT in demonstrative dynamic is subject to a few unique factors, most outstandingly accessible assets and the commonness of both COVID-19 and different sicknesses with covering indications at chest CT. Chest CT is significant for recognizing not only

elective determinations but also confusions of COVID-19. The creators depict radiological findings and overseeing treatment of COVID-19 patients, that include (i.) CT chest convention, (ii.) CT chest discoveries of COVID-19 and its confusions, (iii.) symptomatic exactness of CT scan, its job in demonstrative dynamic and guess; (iv.) announcing as well as imparting CT chest scan findings. The creators additionally audit further explicit subjects, like pathophysiological and clinic signs of COVID-19, the WHO definition of COVID confirmed case, benefit of RT-PCR testing, and radiological office and faculty sway identified with performing chest CT in COVID-19 [12].

5. ASYMPTOMATIC AND PRE-SYMPTOMATIC MANAGEMENT

A few investigations have archived disease with COVID-19 in people who are apparently asymptomatic and in those who are pre-indicative of infection. In any case, since individuals who are asymptomatic are not generally tried, the pervasiveness of asymptomatic disease and discovery of pre-indicative contamination isn't yet surely known. Current information, in view of RT-PCR testing for COVID-19 virus and on serological examinations, propose asymptomatic diseases can be normal and the absolute number of infected cases could be much more prominent than quantity of infections revealed. Some patients could likewise show irregularities on CT scan chest prior to the beginning of indications [13].

5.1 Transmission of Asymptomatic and Pre-symptomatic cases

A large number of epidemiological examinations have revealed that archived COVID-19 spread during the pre-suggestive brooding period. Studies utilizing the RT-PCR recognition have revealed low cycle limits, showing bigger amounts of viral RNA, amongst asymptomatic people and people with pre-suggestive COVID-19 disease. Similarly upon culture of virus particle samples received from asymptomatic patients and pre-suggestive, viral growth had been recorded. The extent of COVID-19 virus transmission because of individuals with asymptomatic and pre-indicative disease contrasted and indicative contamination isn't completely clear; in any case, late examinations

do propose that individuals who are not demonstrating manifestations may communicate the infection [14].

6. CLINICAL COURSE

In different investigations from Wuhan, China, COVID-19 patients presented with symptoms in varying periods, the mean incubation period was 5-14 days, of which the mean time between the start of sickness till when patients encountered dyspnea was 6–9 days; the mean progression time to acute respiratory distress syndrome (ARDS) was 7–11 days; and the estimated mean time to admission in ICU was 10–13 days. Clinicians should know about the potential for certain patients with COVID-19 to quickly crumble around multi week after sickness beginning. Among all hospitalized patients, 25%–30% of patients were admitted to the ICU. In hospitalized patients, about 4%–16% were patients with ARDS. Based on study of patient population characteristics, mortality rates of ICU patients went from 38% to 73%. The median hospitalization period among survivors was 10-14 days [15].

7. CLINICAL MANAGEMENT

7.1 Mild to Moderate Infection

Patients having mild *infection* do not at first need to be hospitalized, as most cases can be treated symptomatically at their homes. Whether to screen a patient as an inpatient or outpatient setting should be presented on a defense by-case premise. The choice would rely upon the initial symptoms presenting, prerequisite for strong consideration, probable risks for extreme sickness, and the capacity of isolating alone at home. Cases presenting with considerable risks for serious ailment should be observed firmly given the conceivable danger of movement to extreme sickness, particularly in the second week after side effect beginning.

7.2 Severe Disease

A few patients may develop serious illness and require ICU hospitalization. Inpatient the board incorporates strong administration of the most well-known complexities of extreme disease, namely; pneumonia, ARDS, sepsis, heart disease, renal injury, and prolonged hospitalization complications like bacterial and

parasitic contaminations, thrombosis and embolism, and nerves damage. [16]

8. PEDIATRIC CONSIDERATIONS

Progressively, information show that youngsters experience similar clinical manifestations of COVID-19 to grown-ups, however sickness is typically milder than grown-ups and seriousness of side effects fluctuates by age of the kid. Numerous youngsters tainted with SARS-CoV-2 stay asymptomatic or have gentle sickness. Regularly revealed indications in kids with SARS-CoV-2 infection incorporate hack or fever, and numerous youngsters likewise experience nausea, vomiting, fatigue or different side effects. Despite the fact that most kids with COVID-19 have asymptomatic or gentle ailment, extreme results, including Diarrhoea, have been accounted for in kids. Offspring of any age with certain hidden conditions might be at expanded danger of extreme sickness; likewise newborn children might be at expanded danger for serious ailment from COVID-19 disease. The Centre for Disease Control and accomplices are examining the multisystem incendiary condition seen within youngsters (MIS-C) related with the disease. MIS-C patients generally have symptoms of fever, stomach torment, spewing, loose bowels, skin rashes, sores and hypotension. A few patients develop heart injury, myocarditis, and intense renal damage. MIS-C could start a long time after a kid was tainted with SARS-CoV-2. The youngster may be contaminated by an asymptomatic contact and, at times, the kid and their guardians probably won't understand that the kid had been tainted. [17]

9. HYPERCOAGULITY IN COVID-19

A few COVID-19 patients could develop hypercoagulable state and are at an expanded danger blood vessel apoplexy causing hemorrhagic manifestations. Lab anomalies seen in COVID-19-related coagulopathy are:

- Mild decrease in platelet levels
- Increase in D-dimer levels
- Prothrombin time prolonged
- Microvascular thrombosis of the toes (“COVID toes”)
- Clotting of intra-vascular catheters
- ST-segment elevation in ECG
- Ischemic large vessel strokes

Pathogenesis behind the COVID-19-related hypercoagulability stays obscure. In any case, in

hypoxia and fundamental irritation auxiliary to COVID-19 could promote significant rise in incendiary cytokines and actuation of the pathway of coagulation. Information accessible to illuminate clinical administration about prevention or management of venous thromboembolism in patients of COVID-19 are yet developing, with advances delivered regularly. A few public expert affiliations give assets to forward-thinking data concerning the COVID-19-related hypercoagulability, including the executives of anticoagulation. [18]

10. COVID 19 RESPONSE

The quick heightening of COVID-19 cases is relied upon to have prompt and medium term social and financial outcomes, seriously affecting weak networks. The COVID-19 Pandemic stances new difficulties to youngsters' physical, passionate and psychosocial prosperity that require a multi-sectoral approach. In light of this, UNICEF has received a multi-sectoral way to deal with its reaction procedure. The UNICEF reaction plan has two significant objectives:

- Minimizing the spread and effect of the episode on the populace, with an emphasis on ladies and youngsters;
- Ensuring that basic administrations for ladies and youngsters are securely made open during and after the pandemic.

The current reaction plan accepts that human-to-human transmission happens, and that it very well might be enhanced in explicit settings, including medical services offices [19].

Considering the above mentioned, the essential destinations of the arrangement include:

- Limiting man to man transmission, including diminishing auxiliary diseases among close contacts and medical services laborers.
- Early detection, isolation, treatment for patients.
- Address queries with respect to clinical severity, transmission rates and infectiousness, management options, and speed up diagnostics, therapeutics, and vaccines.
- Create awareness about the basic danger and case details to all networks, as well as debunk rumours.

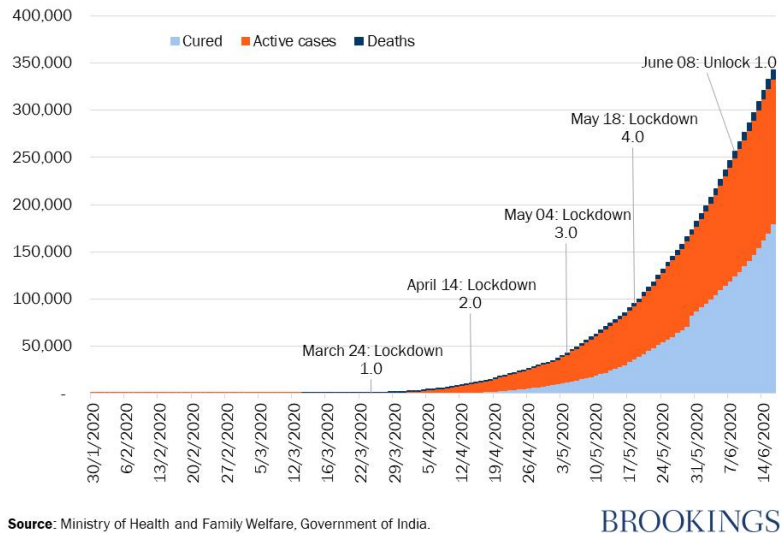
- Minimize the social and economical impact through multisectoral associations.

Public quick reaction groups should be prepared and prepared for examination of suspected 2019-nCoV cases and introductory treatment where suitable. This will require the readiness and spread of case examination conventions (according to WHO direction) and supplies, foundation of a framework for contact following and checking, and the execution of a network based observation system. All medical clinics ought to guarantee their staff are prepared, prepared and fit for rehearses expected to:

- Prevent the spread of respiratory sicknesses including COVID-19 inside the office
- Promptly recognize and disconnect patients with conceivable COVID-19 and advise the right office staff and general wellbeing specialists
- Care for a set number of patients with affirmed or associated COVID-19 as part with routine tasks
- Monitor and deal with any medical services work force that may be presented to COVID-19

11. INDIA'S RESPONSE TO COVID-19

India's first COVID-19 case in was recognized on January 30, 2020 when the WHO pronounced it a general wellbeing crisis of worldwide concern. The country was put under lockdown right around two months after the fact. India carried out a careful observation on January 17, well before the major cases were formally identified. This was accompanied by a series of tourism alerts and prohibitions, as well as attempts to recognize and isolate Indian nationals arriving from abroad. About 2 months following lockdown, on June 8, 2020, India began a staged returning of the economy. Since the first unlock phase outrolled, the nation is attempting to adjust endeavors to resuscitate the economy and also managing expanding cases and new hotspots. As of early May, official Coronavirus cases remained at more than 582,000, and in excess of 17,600 deaths (Fig. 1). Although the has been an improvement in recuperation rates to 64.53% as of December 2020, the demise rate is generally low [20,21].



BROOKINGS

Fig. 1. Total (cumulative) number of cases of COVID-19 in India

12. SANITIZATION AND DISINFECTION

One can likewise complete the cycle of sterilization and disinfection to decrease the odds of getting the COVID-19 infection. A couple of tips are explained below:

- i. In offices spaces and condos, one ought to purify passageway anterooms, lifts, lifts, halls and flights of stairs, safety officer corners, and so forth... frequent mopping with 1% sodium hypochlorite or phenolic disinfectants is a good option.
- ii. Alcohol (70%) disinfectants can be used to clean metallic surfaces like security locks, machines, and so on...
- iii. Areas that are contacted habitually should be cleaned at any rate double a day. This includes lift switches and buttons, radio frameworks, tabletops, seat handles, apportioning machines, handrails/handles, and so forth. Wiping these areas with 1% sodium hypochlorite would suffice.
- iv. Moreover, consider introducing a purifying station for guests. It is exhorted that environmental factors should be sanitized as habitually as could be expected under the circumstances. Legitimate assurance should be utilized while dealing with synthetic substances and keeping in mind that purifying the environmental factors. [22,23] Hardly any

synthetics which can be utilized for cleaning Coronavirus are:

- > Chlorine dioxide
- > Ethanol
- > Ethyl alcohol
- > Hydrochloric acid
- > Hydrogen peroxide
- > Iodine
- > Isopropyl alcohol
- > Phenolic
- > Sodium chloride
- > Quaternary ammonium

A number of studies and reviews flashed in medical literature on different aspects of Coronavirus spread [24-26], its clinical correlates [27-29], effects on and recommendations for different clinical specialities [30-32] and preventive approaches [33,34]. As the novel Covid has made a destruction around the globe we currently realize that early finding, identification and the executives is incredibly important to keep away from network spread and to break the chain of transmission. At first the test was to contain the viral spread and treat the individuals who got tainted in some way or another [35,36]. Be that as it may, late patterns are stressing. Overpowering wellbeing foundation was likewise coupled by long haul wellbeing ramifications of COVID-19. Diligence of different side effects even in the wake of getting restored for 2-3 months needs broad

examination to discover the purpose for the equivalent. Still the pandemic is making new patterns to contemplate and is very unsure for expectation. Preventive measures can be the answer for these issues. Individuals are being indiscreet and not after different regulation rules which are important to be followed, for example, wearing veils, disinfecting hands routinely, keep up physical removing, etc. These persevering manifestations should be promoted so that individuals know about these and follow the rules. Since long haul wellbeing suggestions will require extra consideration by clinical club and furthermore the individual will likewise endure intellectually and genuinely [37,38].

13. CONCLUSION

Wearing *mask* and cleaning hands consistently is discovered to be useful in other transferable illnesses and can shield the person from becoming sick with specific preventable sicknesses saving mental just as money related costs that would be caused by the individual in any case. Clinical office and foundation should be created and overhauled at its best to deal with the comorbid and basic patients experiencing the infection. Covid is a shocker for the specialists as it has provoked the flow clinical offices to its center and has additionally featured its defects. All the nations have avoided potential risk and reactions to handle the infection yet it is likewise an individual obligation to help out the specialists and follow their particular rules. Sterilization, disconnection and different techniques can forestall the spread and stop the transmission of this lethal infection.

DISCLAIMER

The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

CONSENT

It is not applicable.

ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Pascarella, Campus Bio Medico University and Teaching Hospital, Rome. COVID-19 diagnosis and management: a comprehensive review (Review). *J Intern Med.* 2020;288:192–206. Available: <https://doi.org/10.1111/joim.13091>
2. Sahoo H, Mandal C, Mishra S, Banerjee S. Burden of COVID-19 pandemic in India: Perspectives from Health Infrastructure; 2020.
3. Chen N, Zhou M, Dong X, et al. Epidemiological and clinical characteristics of 99 cases of 2019 novel coronavirus pneumonia in Wuhan, China: a descriptive study. *The Lancet.* 2020; **395**:507–13
4. Jr BFP, Federico R Tewes. What attorneys should understand about Medicare set-aside allocations: How Medicare Set-Aside Allocation Is Going to Be Used to Accelerate Settlement Claims in Catastrophic Personal Injury Cases. *Clinical Medicine and Medical Research.* 2021;2(1):61-64. Available: <https://doi.org/10.52845/CMMR/2021v1i1a1>
5. Li LQ, Huang T, Wang YQ, et al. Novel coronavirus patients' clinical characteristics, discharge rate and fatality rate of meta-analysis. *J Med Virol.* 2020; **92**: 577–83.
6. Zhang L, Tao Y, Shen M, Fairley CK, Guo Y. Can self-imposed prevention measures mitigate the COVID-19 epidemic? *PLOS Med [Internet].* 2020; 17(7):e1003240. [cited 2020 Dec 16]; Available: <https://journals.plos.org/plosmedicine/article?id=10.1371/journal.pmed.1003240>
7. WHO. Laboratory testing for 2019 novel coronavirus (2019-nCoV) in suspected human cases. Interim Guid. Geneva, Switzerland: World Health Organization site; 2020.
8. Azer SA. COVID-19: pathophysiology, diagnosis, complications and investigational therapeutics. *New Microbes and New Infections.* 2020;37:100738.

9. Centers of disease control and prevention. Using personal protective equipment. Available: <https://www.cdc.gov/coronavirus/2019-ncov/hcp/using-ppe.html>. Accessed 11 Aug 2020
10. Daniel V, Daniel K. Diabetic neuropathy: new perspectives on early diagnosis and treatments. *Journal of Current Diabetes Reports*. 2020;1(1):12–14. Available: <https://doi.org/10.52845/JCDR/2020v1i1a3>
11. Centers of disease control and prevention. Discontinuation of transmission-based precautions and disposition of patients with COVID-19 in healthcare settings (Interim Guidance). Available: <https://www.cdc.gov/coronavirus/2019-ncov/hcp/disposition-hospitalized-patients.html>. Accessed 11 Aug 2020.
12. Mohammad SA, Osman AM, Abd-Elhameed AM, et al. The battle against Covid-19: the experience of an Egyptian radiology department in a university setting. *Egypt J Radiol Nucl Med*. 2020;51:216. Available: <https://doi.org/10.1186/s43055-020-00335-7>
13. Chu DK, Pan Y. Molecular diagnosis of a novel coronavirus (2019-nCoV) causing an outbreak of pneumonia. *Clin Chem*. 2019;66:549-555. DOI:10.1093/clinchem/hvaa029
14. Chest CT, Thomas C Kwee, Robert M Kwee. *RSNA Radiographics*. 2020;40(7).
15. Sheriff D. Health care in India in the prevailing COVID-19 pandemic scenario. *Eubios journal of Asian and international bioethics: EJAIB*. 2020;30:91.
16. Daniel V, Daniel K. Perception of Nurses' Work in Psychiatric Clinic. *Clinical Medicine Insights*. 2020;1(1):27-33. Available: <https://doi.org/10.52845/CMI/2020v1i1a5>
17. Allam M, Cai S, Ganesh S, Venkatesan M, Doodhwala S, Song Z, et al. COVID-19 Diagnostics, Tools, and Prevention. *Diagnostics [Internet]*. 2020;10(6):409. [cited 2020 Dec 16]; Available: <https://www.mdpi.com/2075-4418/10/6/409>
18. Wu Z, McGoogan JM. Characteristics of and Important Lessons From the Coronavirus Disease(COVID-19) Outbreak in China: Summary of a Report of 72314 Cases From the Chinese Center for Disease Control and Prevention. *JAMA*; 2020. DOI: 10.1001/jama.2020.2648external icon
19. Centers of disease control and prevention. Discontinuation of transmission-based precautions and disposition of patients with COVID-19 in healthcare settings (Interim Guidance) . Available: <https://www.cdc.gov/coronavirus/2019-ncov/hcp/disposition-hospitalized-patients.html>. Accessed 11 Aug 2020.
20. Huntley B, Huntley ES, Di Mascio D, Chen T, Berghella V, Chauhan SP. Rates of Maternal and Perinatal Mortality and Vertical Transmission in Pregnancies Complicated by Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-Co-V-2) Infection: A Systematic Review. *Obstetrics & Gynecology*. 2020;136(2):303–12.
21. Daniel V, Daniel K. Exercises training program: It's Effect on Muscle strength and Activity of daily living among elderly people. *Nursing and Midwifery*. 2020; 1(01):19-23. Available: <https://doi.org/10.52845/NM/2020v1i1a5>
22. COVID-19 Curve Guides India's Health Infrastructure Growth Needs. *J Emerg Nurs*. 2020;46(5):566–70.
23. Sahu KK, Mishra AK, Lal A, Sahu SA. India Fights Back: COVID-19 Pandemic. *Heart Lung*. 2020;49(5):446-448. DOI:10.1016/j.hrtlng.2020.04.014
24. Ipchita Bharali, Preeti Kumar, Brookings, July 2 2020, India's Response to COVID-19.
25. COVID-19 Map [Internet]. Johns Hopkins Coronavirus Resource Center. [cited 2020 Dec 15].
26. CDC. COVID-19 and Your Health [Internet]. Centers for Disease Control and Prevention; 2020. [cited 2020 Dec 17].
27. WHO Coronavirus Disease (COVID-19) Dashboard [Internet]. [cited 2020 Dec 19]. Available from: <https://covid19.who.int>.
28. Gaidhane SN, Khatib QS, Zahiruddin A, Gaidhane S, Telrandhe, Godhiwal P. Depression, Anxiety and Stress among the General Population in the Time of COVID-19 Lockdown: A Cross-Sectional Study Protocol. *International Journal of Research in Pharmaceutical Sciences* 2020; 11(1):360–64.

- Available:<https://doi.org/10.26452/ijrps.v11iSPL1.2726>.
29. Nisargandha MA, Dadarao Parwe S. Spread of Coronavirus Disease 2019 (COVID-19) during the Lockdown in the Indian Population and Preventive Measures. International Journal of Research in Pharmaceutical Sciences 2020;11(1):328–32. Available:<https://doi.org/10.26452/ijrps.v11iSPL1.2721>.
30. Padole VS, Kalsait RP, Ambad R, Kute P. Effect of COVID 19 Affecting Geriatric Patients. International Journal of Current Research and Review. 2020;12(17):182–87. Available:<https://doi.org/10.31782/IJCRR.2020.121729>.
31. Parveen S, Jain S. Pathophysiologic Enigma of COVID-19 Pandemic with Clinical Correlates.” International Journal of Current Research and Review. 2020; 12(13):33–37. Available:<https://doi.org/10.31782/IJCRR.2020.12136>.
32. Parwe SD, Ingle AS, Nisargandha MA, Rathi B. Healthcare Workers Novel Coronavirus (NCOVID 19) Life-Threatening Situation during the Pandemic. International Journal of Research in Pharmaceutical Sciences 11, no. Special Issue. 2020;(1):1222–25. Available:<https://doi.org/10.26452/ijrps.v11iSPL1.3600>.
33. Parwe SD, Nisargandha MA, Thakre R. Role of Convalescent Plasma Therapy in New Coronavirus Disease (Ncovid-19): A Review. International Journal of Research in Pharmaceutical Sciences Special Issue. 2020;11(1):546–49. Available:<https://doi.org/10.26452/ijrps.v11iSPL1.2846>.
34. Pasari AS, Bhawane A, Balwani MR, Tolani P, Ramteke V, Deshpande N. Knowledge about Covid-19 and Practices among Hemodialysis Technicians in the Covid-19 Pandemic Era. International Journal of Nephrology 2020;(2020). Available:<https://doi.org/10.1155/2020/6710503>.
35. Pate MY, Tayade H, AK H, Singh. Minimally Access Surgery and Endoscopic Procedures in COVID19 Pandemic.” Journal of Datta Meghe Institute of Medical Sciences University. 2020;15(1):153–55. Available:https://doi.org/10.4103/jdmimsu.jdmimsu_139_20.
36. Prasad N, Bhatt M, Agarwal SK, Kohli HS, Gopalakrishnan N, Fernando E, Sahay M, et al. The Adverse Effect of COVID Pandemic on the Care of Patients With Kidney Diseases in India.” Kidney International Reports. 2020;5(9):1545–50. Available:<https://doi.org/10.1016/j.ekir.2020.06.034>.
37. Philip M, Mahakalka CC, Kapl MN, Kshirsagar S, Shukla A. Mental and Behavioral Changes during COVID 19 Pandemic and How to Deal with It. Journal of Critical Reviews. 2020;7(8):1105–12. Available:<https://doi.org/10.31838/jcr.07.08.233>.
38. Quazi AA, Patil M. Measures of Preventing Covid-19 Transmission. International Journal of Research in Pharmaceutical Sciences. 2020;11(1):1000–1007. Available:<https://doi.org/10.26452/ijrps.v11iSPL1.3405>.

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