Type of Article:- *Review Article* *DOI Number: 10.37506/ijphrd.v11i11.11359*

Covid-19 Crisis: Tackle Through Paradigm Shift Focus from Tertiary Care to Primary Care

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Abstract

To stress upon the primary level of prevention in fighting against the deadly Coronavirus(2019-nCoV) infection rather than tertiary care to increase the survival rate by stopping the spread of the pandemic and also this article describes elements of design of strengthening primary health care that is strengthening the health care delivery at the grass root level so as to decrease the burden of tertiary care in India. A Novel coronavirus (2019-nCoV) identified in Wuhan city of China capable of causing life threatening respiratory illness declared as a pandemic by WHO and has become a global fear among the community and healthcare professionals in 2020.All recent articles were given the priority, though the information on primary prevention focusing on delivering primary health care is in scarcity. An honest attempt to write a narrative review is made. The lack of prevention campaigns led to the increase in the dearth rate worldwide as the healthcare facility or tertiary care was incapable to handle such pandemic as great infrastructure is required. India is nonetheless different from other countries affected by COVID -19, as it is a developing nation and contributing just 5.3% of GDP to the health sector. Therefore, by strengthening robust primary health care delivery system in India can combat this pandemic.

Key words- *covid-19, coronavirus, pandemic,prevention, primary health care*

Introduction

Coronaviruses are a group of related viruses that have been known to cause diseases in mammals and humans. In the past, it usually manifested as a respiratory disease in humans ranged from a mild common cold to a fatal infection such as severe acute respiratory syndrome (SARS), Middle East respiratory syndrome (MERS)[1,2]. An outbreak of viral pneumonia cases of unknown cause was reported by health authorities in Wuhan, the capital of Hubei province, China on 31 December 2019[3]. Many of the reported cases mostly had links to the Huanan Seafood Wholesale Market, which also sold live animals; therefore, the virus is believed to have a zoonotic origin[4]. Since then, there has been a steady increase in the burden of COVID-19, with 20.9 million confirmed cases and 7,55,589 deaths globally and 2.4 million confirmed cases and 47,033 deaths reported in India, as of 8th August 2020.With cases emerging from as many as 29 countries, and travel-related importations also being reported, the global health security implications of COVID-19 have come to the fore[5,6,7,8]. On 11-12 February 2020, WHO, in collaboration with the Global Research Collaboration for Infectious Disease Preparedness and Response (GLOPID-R-an international network of funders to facilitate coordination and information sharing), organized a Global Forum on research and innovation for COVID-19 ('Global Research Forum').The goals of

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the meeting were two-fold: "To accelerate research that can contribute to containing the spread of this epidemic while integrating innovation fully within each thematic research area" and "To support research priorities in a way that leads to the development of global research platforms, aiding preparedness for the next unforeseen epidemic"[9].

There is lack of prevention campaigns and is the main problem of concern. Our Indian system gives weightage to a health-care tradition that puts too much emphasis on treatment. The problem with this approach is that it misses important opportunities for risk reduction as it's a important saying that "Prevention is better than Cure" and has been proved true in this serious pandemic of Covid-19. India is not among the worst-hit countries, but its grossly under-funded and patchy public health system, with huge variations between different states, poses special challenges for the country's disease containment strategy[10].There is a clear need for prevention of a disease developing in the first place and, once it has developed focus shifts from primary prevention to secondary prevention " early diagnosis and treatment". "Earlier diagnoses have the potential to produce better treatment outcomes in such pandemic. This review is an attempt to discuss impact of COVID -19 infection spread in the community and how the levels of prevention could be achieved rather than providing treatment to Covid positive cases and thus preventing the daily loss of life years.

Material and Method

A writing search was performed to gather information about articles with respect to COVID-19 and primary prevention. A wide search was performed to cater as many sources so as to not to miss any relevant information. In this manner, no exacting consideration standards were applied. These sources included peer-reviewed literature publications from electronic databases such as PubMed and Google Scholar using the following search terms:''Coronavirus,'' or ''COVID-19,'' or ''SARS-CoV-2,'' or ''2019-nCoV,'' separately combined with "prevention", "primary health". Exceptional reports and communications from significant bodies such as the Centers for Disease Control and Prevention (CDC), World Health Association (WHO) and significant national health bodies like Ministry of Health and Family Welfare (MoFHW), National Health and Resource Center(NHSRC) were also referred.

Results

Because of the highly toxic and mutating nature of the disease and scientific evidence available is mainly narrative reviews, expert opinions, small cross-sectional studies. Therefore, recent and peer-reviewed studies were considered. As the evidence is still new and very limited in quality, a narrative synthesis was undertaken to provide a review on the prevention as majority of the data available is on the pathogenesis and treatment. Keeping in mind, the virulence of the virus, the only way to save the planet is through prevention till the vaccination is successfully introduced.

Discussion

COVID-19 is an unprecedented pandemic which has led to millions being affected and thousands dying every day across the world. Initially, the Government of India has announced a 21-day lockdown to prevent COVID-19 transmission in India and later extended till lockdown 4.0, mainly to buy time for health systems to be better prepared. While tertiary care systems are also being prepared it is important to ensure preparedness of Primary Health Centres. Towards this mammoth effort, the Indian medical and public health community is contributing in a big way. As of now however, the rate at which official figures of Covid-19 pandemic are rising, and some case histories seem to strongly indicate that community transmission has begun, In such a situation, the preparedness of government Primary Health Centres (PHCs) will be crucial in terms of their response to prevent the further transmission of COVID-19 with respect to screening of patients with symptoms, and in responding, either with treatment or referral. Investment in primary care is needed to manage the pandemic.

Importance of Primary Health Care

Why a renewal of primary health care (PHC), and why now, more than ever?[11] The immediate answer is the palpable demand for it as globalization is putting the social cohesion of many countries under stress, and health systems, as key constituents of the architecture of contemporary societies, are clearly not performing as well as they could and as they should. Few would disagree that health systems need to respond better –

and faster – to the challenges of a changing world and Primary Health Care can do that, therefore, focusing more on the concept from patient-centered care to the concept of community-focused care[12]. India is also preparing for the eventuality where many people will be ill enough to require admission. Based on experience from China and Italy, we know that about 5-10 per cent of all infected patients will become severely ill and require admission. However, about 70 per cent of them would require supportive care and oxygen that could be easily managed by PHC's and the remaining 30 per cent might require more advanced critical care such as ventilator support and extracorporeal membrane oxygenation (ECMO).

While the States and the Central government are creating additional capacity in hospitals, there was a large-scale movement of migrants following the sudden lockdown, the disease may spread in rural areas. Rural populations live far from tertiary hospitals and any strategy of testing and management that is based on large hospitals is not likely to be effective or sustainable. In this scenario, the role of personal and community behaviour emerges as extremely critical for managing the pandemic. We know that physical distancing and hand-washing will have significant impact on slowing the spread of the epidemic. And this is propagated through establishing robust primary health care. There is a fear among the public health circles that excessive focus on managing coronavirus is likely to diminish care of people suffering from other health conditions, and result in higher mortality.

Primary health care in India

India has an extensive network of about 25,000 primary health centres and 5,300 community health centres spread across all regions and States. In addition, large numbers of private and non-governmental organisations provide primary healthcare in urban and rural areas. At this juncture, they can play a critical role in managing the epidemic and providing continuity of services.

How to strengthen Primary Health Care in India

An investment in strengthening primary healthcare at these times will also go a long way in rejuvenating and creating resilient health systems.

Ø Recover at home:More than 90 per cent of all such patients could be managed at households with support of the primary health care providers. Primary healthcare providers can also triage the patients requiring tests or 'visit' the health centres over phone.

Ø Supportive care and oxygen: Standard protocols and oxygen would be essential for such care, and should be provided urgently. Regular availability of oxygen would save many lives from other respiratory or cardiac causes now and later.

Ø Expand detection: Primary healthcare providers can offer sample collection closer to families and communities. Such samples can be transported to the laboratories. It would require immediate training of primary healthcare staff in collecting samples and setting up a system for transportation.

Ø Provide continuity of healthcare: During the epidemic, there are early signs that outpatient and "routine" services are restricted within the public and private sector. Because of the lockdown, there is also a difficulty in accessing healthcare for many patients in rural areas. For those with chronic illnesses, such as tuberculosis, diabetes and hypertension, restricted access to drugs and services could be life-threatening. By the nature of being closer to the communities, PHCs and other primary care providers can significantly ameliorate the situation.

To perform all of the above functions, there is an urgent need for the States to ramp up the primary healthcare systems. It would go a long way in not only managing the epidemic but also strengthening the health systems in the long run and long past the rule has been passed to employ one dental surgeon along with the Medical and Ayush personnel but not implemented in many states eventhough a dental surgeon can contribute to an effective workforce in this pandemic crisis in the nation.

Preparedness within primary healthcare facilities (including PHC and sub-centre)[13]

Figure Adapted from online resources named Covid-19-PHC Action Group,2020.

For strengthening the primary health care delivery system in India to be strong enough to be active against the COVID 19 war, following key points should be considered.

1. Infrastructure, equipment and supplies- a designated hand-washing area/corner for all patients and health workers at the entrance or waiting area of the PHC, separate patient waiting area and consultation room for patients presenting with respiratory complaints and/or fever, hot water should be available for cleaning the health centre as per guidelines, PPE requirement for staff, have adequate stock for essential medicines, stock for hydroxychloroquine as per the ICMR chemoprophylaxis guidelines for health workers caring for suspected or confirmed cases.[14-17]

2. Health Worker Safety- PHC staff should undergo training on modes of transmission, on the use of PPE and common myths/misconceptions about COVID19, PPE use guidelines (including hand washing) been printed and displayed in all relevant rooms at the PHC, the space in and around PHC should be divided into zones based on risk with restriction of outsiders and non-medical staff in the high-risk areas, an important way to assess staff and facility preparedness and training is by conducting mock drills for staff at the PHC and most importantly conducting periodic health-worker wellness and exposure checks of the health worker itself and the families of health workers[18,19].

PPE use: At the PHC, the main components of PPE used frequently are surgical masks, N95 masks and gloves. PPE must be worn in hospital depending on the risk of the health worker at that location[20]

● Low risk areas/staff requiring surgical mask and gloves

- Drivers of ambulances

- Visitors accompanying young children (<5) and elderly (>60)

● Moderate risk areas/staff requiring N95 masks and gloves only

- PHC entry screening area, health workers checking temperature, doctor outpatient chamber

- Sanitary staff cleaning PHC waiting areas/toilets

- Handling dead body at PHC

- Attending emergency cases

● High risk areas/staff requiring full complement of PPE

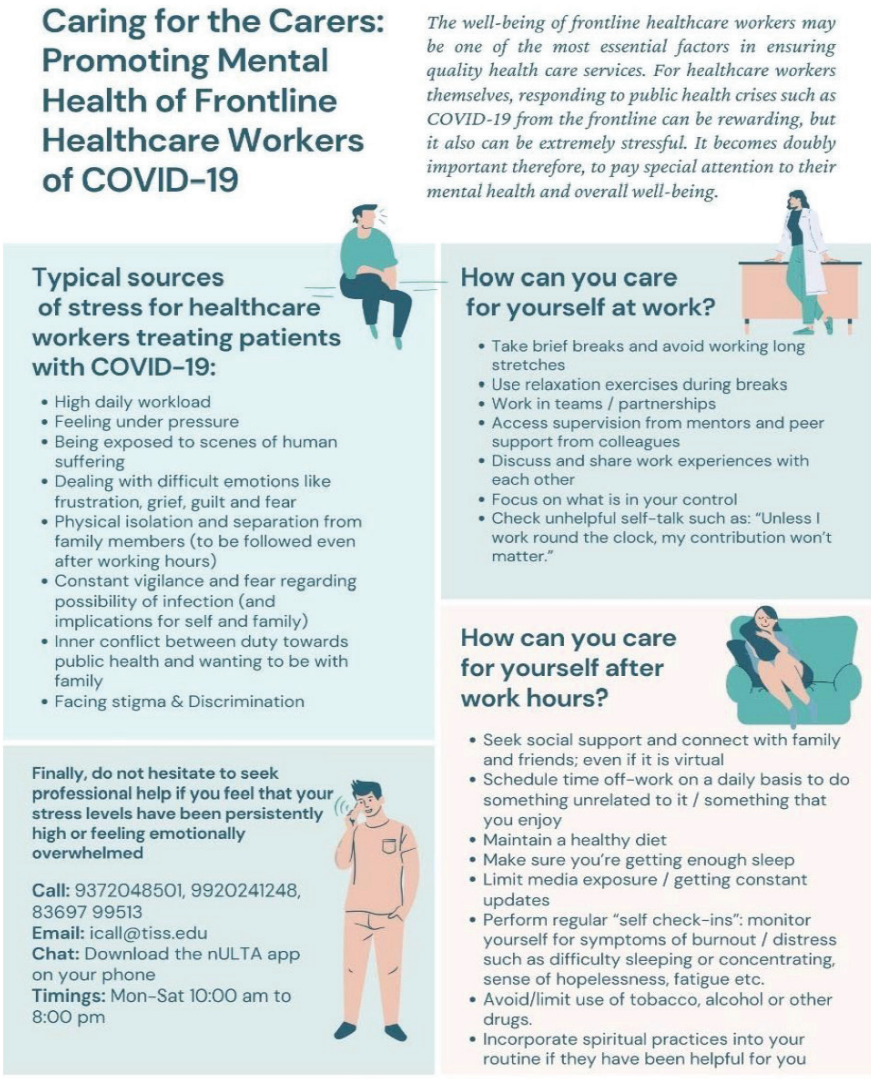

Figure Adapted from online resources named Covid-19-PHC Action Group,2020

3. Patient Care[22-24]- planned and implemented a segregated patient flow based on symptoms at the facility entrance with appropriate signage, displayed screening, treatment and referral flowchart from guidelines for COVID-19 in the screening area and consultation room, printed a list and contact details of COVID-19 testing centres and designated COVID-19 hospitals in your district/neighboring districts, have a plan for referral of suspected cases and patients presenting with SARI (Severe Acute Respiratory Illness)to the designated testing and/or quarantine facility identified for your district as per district health authority guidance, have a follow-up plan for people identified at the PHC as being high-risk, have a strategy in place to minimise routine out-patient visits wherever possible, make teleconsultations feasible in your PHC area.

Strategies to minimise routine outpatient visits: Consider tele-consultation, medicine drop-off at homes or proxy medicine pick-ups by younger or low risk family members for patients on monthly medication, home visits by ASHAs/health workers for chronically ill and antenatal check-ups.

A symptom checklist for COVID-19

S.No.	Symptoms	Yes	No	Remarks With Duration
1	Fever			
2	Cough			
3	Rhinorrhea/Runny Nose			
4	Sore Throat			
5	Body Pain			
6	Loss Of Appetite			
7	Diarrhea			
8	Lost Sense Of Smell			
RED FLAGS				
9	Difficulty Breathing Or Shortness Of Breath After Symptoms Set In			Immediate action
10	Persistent Pain Or Pressure In The Chest			
11	Increased Confusion Or Difficulty In Waking Up			
12	Bluish Lips Or Face			
13	Extreme Fatigue			

High contact risk checklist

S.No.	High Contact Risk Criteria	Yes	No	Within 14 Days Of Contact?
1	Contact with someone in the last 14 days having symptoms of severe respiratory illness/admitted for the same			
2	Caller in close proximity (within 3ft) of a conveyance with a COVID-19 symptomatic person			

3	Contact with someone in the last 14 days having tested positive for COVID-19			
4	Direct physical contact with the person being suspected to have COVID-19 including examining a person without PPE (personal protective equipment)			
5	Touched or cleaned the linen/clothes/dishes of a person suspected to have COVID-19			
6	Touched the body fluids (respiratory secretions, vomit, saliva, urine, feces) of a person with suspected COVID-19			

High Risk Conditions checklist

S. No.	High Risk Conditions Criteria	Yes	No
1	Above the age of 60 or under the age of 5		
2	Malnourishment		
3	Heart disease (such as congenital heart disease, congestive heart failure and coronary artery disease)		
4	Lung disease including asthma or chronic obstructive pulmonary disease (chronic bronchitis or emphysema), tuberculosis, occupational lung diseases like silicosis or other chronic conditions associated with impaired lung function or that require home oxygen		
5	Diabetes Mellitus		
6	Current or recent pregnancy in the last two weeks		
7	Compromised immune system (immunosuppression) (e.g., seeing a doctor for cancer and treatment such as chemotherapy or radiation, received an organ or bone marrow transplant, taking high doses of corticosteroids or other immunosuppressant medications, HIV or AIDS)		
8	Blood disorders (e.g., sickle cell disease or on blood thinners)		
9	On treatment for chronic kidney/liver disease		
10	On treatment for any chronic illness requiring care at home		

4. Biomedical Waste Management And Disinfection[25,26]- disposal of infected waste (by incineration) as per state bio-medical waste management rules, staff should be fully aware of and complying with the bin colour codes depending on type of waste, PPE removal should be at/near the bin.

Ø Percent sodium hypochlorite solution is recommended. For surfaces that do not tolerate bleach 70% ethanol can be used (phones, computers, keyboards and other electronics).

Ø Instructions for disinfection: ● Spray 1% sodium hypochlorite working solution on all the surfaces (protecting electrical points/appliances).

● Then, clean with a neutral detergent that is used for removing traces of hypochlorite solution.

● While cleaning, windows need to be open .

● All frequently touched areas, such as all accessible surfaces of walls and windows, the toilet bowl and bathroom surfaces need to be carefully cleaned.

● All textiles (e.g. pillow linens, curtains, etc.) should be first treated with 1% hypochlorite spray and then packed and sent to get washed in laundry using a hot-water cycle (90°C) and adding laundry detergent.

● Mattresses / pillows after spraying with 1% hypochlorite should be allowed to get dry (both sides) in bright sunlight for upto 3 hrs each.

● Site of collection of biomedical waste should be regularly disinfected with freshly prepared 1% hypochlorite solution.

5. Health Information, Outreach And Communication- assess communication infrastructure (internet and phone availability) at your facility and your outreach points (sub-centre ANM, ASHA, AWW), the awareness material include a focus on countering possible stigma and discrimination due to quarantine status, contact exposure or test positivity at the PHC and community should be displayed, the state/district COVID-19 helpline number(s) prominently displayed at your PHC entrance and in all posters.

Posters to print and display the health centre

● Common symptoms

● Dos and don'ts

● National and state level helpline numbers

● When to seek medical attention (risk-factors/red flags as indicated above)

● Facility if any for tele-consultation in your PHC/ medicine pick-up

● Any other local information related to COVID

6. Monitoring And Reporting

Regularly Plan for meetings:

Ø Plan for 30 min-1 hour meetings where at least the following can be discussed.

Ø Discussing self/team's health status.

Ø Assess latest information with health workers on disease prevention and transmission

Ø Consider roster for health workers to limit exposure; provide periodic off-days to ensure health workers are well rested and motivated

Ø Leadership by PHC medical officer: Health workers may be looking up for clarity of communication and leadership of the PHC medical officer.

Ø Teamwork: Ensure coordinated response when positive cases are reported so that people or health workers do not panic.

Summary

During times of pandemics, as history tells us, there is a rise in stigmatisation of people; we together along with the government in this need of an hour can practice ways of prevention at individual level and as a primary health care giver so as to fight against the Covid -19 deadly pandemic affecting globally.

Conflict of Interest: Nil

Funding: Self-Funded

Ethical Clearance: Ethical Clearance from the Ethical committee of Swami Vivekanand Subharti University taken.

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