



DECODING THE ROLE OF COMMUNITY AND SOCIAL MEDICINE DURING COVID-19 PANDEMIC

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Abstract: COVID-19 has proved to be a social disease due to its widespread diffusion in the general population across the globe. While socialization is a risk factor for the spread of the SARS-COV-2, health protection measures such as isolation and lockdown further aggravated the 'social' burden of COVID-19. Diseases with social impact require a management approach based on social medicine, integrating health, social and economic responses. Pandemics have significantly affected the economy of each country. Health, Education and political systems have also been drastically affected in each part of the country. To fight against pandemic, it demands multidimensional approaches consisting of various measures like surveillance, containment, isolation and quarantine, border restriction as well as various socio-political and community measures. Though the entire health workforce is involved at multiple levels, the role of a community medicine/public health expert is more significant in controlling its spread and managing the situation. This review has been done for giving an insight of proper utilisation of public health services and existing manpower of community medicine. Also this will channelize our health system and impart a direction for combating future public health crises. So the Government should utilise the experiences and expertise to manage the pandemic very well.

Keywords: Community medicine, COVID-19, Social Medicine, Pandemics, Quarantine.

INTRODUCTION

Community medicine is a specialized branch of medical science aiming to promote health, prevent diseases, and prolong life through a range of interventions (promotive, preventive, curative, rehabilitative, and palliative) in close partnership with the health care delivery system, active community participation, and inter-sectoral coordination (Joseph *et al.*, 2018). It includes epidemiology, health care delivery system including primary health care and basic clinical sciences as core subjects. Pandemics have

significantly affected economy, society and environment of almost all countries (Verma and Prakash, 2020; Roy and Chaube, 2021). Health, education and the political systems have also been drastically affected in each part of the country (Sageena and Balwan, 2020; Balwan *et al.*, 2020; Kumar, 2021). To fight against pandemic, it demands multidimensional approaches comprising of various measures like surveillance, containment, isolation and quarantine, border restriction as well as various socio-political and community measures (Kumari

and Shukla, 2020; Roy *et al.*, 2020). In the view of the novel coronavirus disease 2019 (COVID-19) pandemic, which has affected almost all the countries thereby infecting millions of people worldwide, strict measures like isolation and quarantine needs to be followed and one third of the world's population are now in some form of lockdown or shutdown (Lee *et al.*, 2020). Studies have shown that non-pharmaceutical interventions or public health measures have played a major role in the containment of epidemics and pandemics (Aledort *et al.*, 2007).

There is evidence that a low socio-economic status (SES) is strongly associated with higher rates of both incidence and mortality attributable to COVID-19 (Hawkins *et al.*, 2020; Sageena and Balwan, 2020; Balwan *et al.*, 2020). In particular, housing conditions, over-crowding and other aspects that hinder social distancing can greatly influence the risk of COVID-19 transmission. Furthermore, individuals of lower SES are more likely to rely on public transport to reach their respective workplace, thereby increasing the risk of COVID-19 through inter-personal contact.

SES also affects the living environment, the eating habits, the occupational status and the access to health care services, ultimately influencing health (Von dem Knesebeck *et al.*, 2006). Most determinants of health are social by nature and the most effective public health interventions to tackle them frequently require a social component in their design and implementation (Bubbico *et al.*, 2021).

Given the current scenario caused by the COVID-19 pandemic, interventions to tackle socio-economic disparities should be considered as priorities like the search for effective curative and preventative treatments (*e.g.*, antivirals and vaccines). Indeed, existing inequities worsened during the pandemic and aspects like access to food, education, and psycho-social support must be carefully weighed in a holistic approach (Chin-Quee *et al.*, 2013; Sageena and Balwan, 2020; Balwan *et al.*, 2020).

The application of social medicine in the current COVID-19 pandemic requires the recall of a long

standing medical tradition. The history of recent epidemics, plaguing Italy in the early twentieth century, has shown that the ravages of war, movement of armies, migration of entire populations, poverty, overcrowding and poor hygienic housing conditions contributed to increase the spread of deadly communicable diseases. Social medicine, established in Italy in 1922 to contain the massive spread of tuberculosis and malaria, assumed a key role to promote the first European policies of capillary health education across Europe, contributing to prevent and control relevant infectious threats (Chin-Quee *et al.*, 2013; Abdul-Hadi *et al.*, 2013; Kasper *et al.*, 2016; Mueller *et al.*, 2020; Saba and Balwan, 2021).

As clarified by John A. Ryle, “*social medicine extends the interest and alters the emphasis of the older public health, just as social pathology extends the interest and alters the emphasis of earlier epidemiological study*” (Horton, 2013). Specifically, social medicine unites the clinical with the public and embraces the organisation of aftercare, and the readjustment of the lives of individuals and families disturbed or broken by illness.

When confronted with public health, which is primarily intended to focus on the environment (housing, safe water, and sanitation), social medicine differs by encompassing “*the whole of the economic, nutritional, occupational, educational, and psychological opportunity or experience of the individual or the community*” (Horton, 2013). Basically, social medicine is concerned over the relation between the individual and his environment.

People are simultaneously biological and social organisms, and thus human health and disease are affected by social factors as well as by biological factors. Included in the basic idea and concept of social medicine is that the interdisciplinary program between medicine and social science. It would provide the former with knowledge and skills needed to analyse the social causes of health and illness in the same way as the alliance between medicine and laboratory

sciences had provided new insights into the biological, chemical and physical bases of disease.

Social medicine explicitly investigates social determinants of health and disease, rather than treating such determinants as mere background to biomedical phenomena. The proposition of social medicine deserves emphasis, and especially so today its intellectual breadth, its political and economic depth, its essential humanism. Contemporary social medicine is critical to understand and prevent diseases, improving healthy life conditions in the general population and the efficiency of health systems. Today's health challenges require novel approaches involving the implementation of new technologies and advanced methodologies such as tele-medicine, tele-rehabilitation, tele-consultation and new digital infrastructures for modern data communication 5G technology, Big Data and their management through artificial intelligence algorithms will define an epochal change in health care delivery, processing huge amounts of health data in real time. These technologies will allow clinical research to identify new models of diagnostic, therapeutic and preventative interventions, optimizing health care expenditures yet supporting the most fragile population. Recent studies suggest that countries implementing an integrated health, social and economic public policy response will be able to overtake the current pandemic not only healthier, but also economically and socially stronger (Mooney *et al.*, 2015; Gentilini *et al.*, 2020).

In India, the numbers of COVID-19 cases are constantly rising, but so far, we have been able to successfully slowdown the on-going pandemic from entering into 3rd stage. Though the entire health workforce is involved at multiple levels, the role of a community medicine / public health expert is more significant in controlling the spread in the community and managing the situation. The expertise of Community Medicine specialists has a major role in planning at various levels and execution and implementation of policies and guidelines and to interrupt the current pandemic which may result in with high

mortality and morbidity. The expertise of community physicians can be explained at various levels namely:

1. Community Level
2. District/ State Level
3. Central level and the expertise are not always discrete and can be overlapped at various levels (Giri and Bhatia, 2020).

ROLE OF COMMUNITY MEDICINE DURING ANY OUTBREAK

Community medicine in India can be traced back from the year 1946. The origin of Community Medicine has followed different paths in different parts of the world with a common agreement that community medicine is a linear descendant of public health. While in South Africa community medicine was a conjunct of family medicine and preventive and social medicine, in the United Kingdom the discipline was formed to lead the management of health services in National Health Service (Kark and Abramson, 2003). Bhore (1946) report under Health Survey and Development Committee recommended a three month compulsory training for physicians in preventive and social medicine. Focus then was to impart preventive as well as curative service training to the physicians. Community medicine departments always focused on public health education at undergraduate and postgraduate level (Negandhi *et al.*, 2010; Mueller *et al.*, 2020). Family Medicine, modern epidemiology, health management, and health promotion are the major concentrations in community medicine along with social sciences/behavioural sciences, health economics, and environmental, geriatric, mental and occupational health (Kumar, 2005; Pandey *et al.*, 2007).

Unlike in General medicine, whose primary function is to focus on individual treatment level whereas public health primarily focuses on mass treatment, community prevention and recurrence of a disease. Clinical and public health departments work in coordination when outbreaks occur, understand the epidemiology, slow the spread and investigate the source of infection through contact tracing, thereby help in

source reduction and transmission (Pandey *et al.*, 2007; Balwan and Kour, 2021).

During this pandemic community medicine plays a crucial role in minimizing the transmission of infectious diseases. Moreover, Community medicine physician focuses on the following areas like:

1. Prepare for Field Work: Field investigation is conducted before or after conforming increase in cases.
2. Establish the existence of an outbreak: It is done by comparing the previous data.
3. Verify the Diagnosis: By using Medical and /or Laboratory and /or Epidemiological investigation.
4. Define and identify cases.
5. Find cases systematically followed by record information using the epidemiological case sheet.
6. Perform Descriptive Epidemiology: Identification of population at risk and etiology.
7. Develop, evaluate & refine hypotheses and carry out additional studies.
8. Compare with lab and environmental studies.
9. Establish control and prevention measures involving in surveillance activity.
10. Communicate relevant findings with common people as well as authority.
11. Communicating with public and educating them by preparing IEC materials and training grass-root level workers to educate the community.
12. Contact Tracing that involves:
 - (a) Contact Identification:
 - Preparation of a standard / surveillance case definition for COVID-19.
 - Identify potential contacts starting with the case (Epidemiologist / community physician's visit to the patient's home is mandatory)
 - (b) Contact Listing:
 - All persons considered having significant

exposure should be listed as contacts, using the contact form.

- Report any suspicious signs and symptoms such as fever, cold, cough, and difficulty breathing immediately.

(c) Contact Follow-up:

- The epidemiologist / supervisor / contact tracing physician should assemble a competent team involving local supervision and frontline workers (ASHA, AWW, ANM and Supervisors) to track all contacts listed.

ROLE OF COMMUNITY MEDICINE IN COVID-19 PANDEMIC

The community medicine specialists can impart their expertise at various levels from community level to central level.

1. At Community Level (Collaboration with Medical officers, Village leaders and Frontline workers):

- a. Through Rural and Urban Health & Training Centres; faculties, residents, interns and undergraduates can create awareness about hand washing, cough etiquette, social distancing, avoiding gathering, use of mask etc.
- b. Preparation of IEC materials regarding COVID appropriate behavior and distribution in their field areas.
- c. Health promotional activities include installation of low cost sanitizer dispensing machine.
- d. Stop spreading infodemic by providing proper knowledge regarding pandemic.
- e. Supportive supervision of home and institution quarantine.
- f. Providing Primary health care services in the field area.
- g. Finding and training self-help group or local NGOs for stitching mask and preparation of sanitizers.

2. At District / State Level (Collaboration with district administration, various NGOs, Public health specialists, other specialized departments like pulmonary medicine, General medicine and microbiology):

- a. Development of district emergency plan and preparedness.
- b. Be a part of rapid response team and provide valid inputs to the team.
- c. Active surveillance, using spot map for case identification, supportive supervision to quarantine centres and ensure COVID appropriate behaviours to be followed.
- d. Contact tracing, defining containment zones & ensuring essential health services to containment zones.
- e. Establishing a helpline number (toll free) for counselling and avoiding fearfulness among common people.

3. At Central Level (Collaboration with MOHFW, NGOs, NHM, Various research institutes like ICMR):

- a. Development of guidelines about the disease concerned, prevention, or containment of the pandemic/halting the transmission by studying the epidemiological trend, formulating the mathematical and epidemiological models, using database from IDSP and other field level activities or research, clinical case finding and laboratory confirmation criteria and disease surveillance.
- b. Policies regarding protecting the rights of medical professionals and other health-care workers, medical indemnity policies during pandemic situation.
- c. Policies regarding inventory/logistics management supply chain.

Role of Professional bodies like IAPSM, IPHA and IAE during COVID-19 Outbreak

A combined task force was constituted taking eminent public health experts from different professional bodies of India like Indian Public Health Association and Indian Association of Preventive and Social Medicine in April 2020. Further, Indian Association of Epidemiologists (IAE) also joined the task force. This was formed with objective of reviewing and compiling the scientific epidemiological literature pertaining to COVID-19 infection in India at various

levels, developing common opinion amongst the experts regarding COVID-19 disease epidemiological trends and developing action, wide dissemination of the common statement and action plan with public health experts, health professional associations and other key stakeholders & with the policy makers at the highest level at centre and state. 1st joint statement was submitted to Hon'ble Prime minister, union health minister, NITI AYOJ, Secretary (Health & Family Welfare and Department of Health Research) on 11th April 2020. Similarly, the 2nd joint statement was submitted on 25th May 2020. It has following recommendations:

1. Constitution of panel of interdisciplinary public health experts and social scientists at various levels.
2. Sharing of data in public health forum.
3. Lift lockdown, replace with cluster restriction or containment.
4. Resumption of all routine health services.
5. Source reduction measures to be adopted.
6. Ensure physical distancing with social bonding.
7. Sentinel and Active surveillance.
8. Test, Trace, Track (3T) and isolate cases with marked scaling up.
9. Strengthening intensive care capacity.
10. Optimal PPE for frontline health care workers.
11. Strengthening the public health system / discipline.

3rd Joint statement was given to government in 25th August 2020 with a motive to support the Government of India in formulating evidence based policy for prevention and control of COVID-19 pandemic in India and it had certain recommendations regarding:

1. No lockdown or shutdown, only cluster restriction.
2. Quarantine and Isolation policy.
3. Pragmatic testing.
4. Immediate resumption of comprehensive health-care services.
5. Protection of high risk population.

6. Continue preventive measures like physical distancing, mask use & hand washing.
7. ILI and SARI surveillance.
8. Periodic sero-surveillance.
9. Opening of educational institutions with certain guidelines.
10. Role of vaccine in on-going pandemic.
11. Increase health expenditure to 5% of GDP.
12. Formation of public health cadre at national and state levels.

CONCLUSION

Community Medicine is a unique discipline and can be considered as a successor to public health which bridges the gap between public health and clinical medicine, and Community Medicine graduates cum physicians can contribute in areas that promote the synergy between the two disciplines. It's the high time that all sectors along with community involvement should come forward to fight against this pandemic using appropriate technology. The role of Community Medicine has always been immense during any pandemic. The Community physicians have to play the key role in developing and sustaining the response mechanism. Also the central and state government should involve the community physicians in various High Level Expert Groups and seek their expertise.

CONFLICT OF INTEREST

Authors have no conflict of interest.

REFERENCES

1. Abdul-Hadi R.A., Abass M.M., Aiyenigba B.O., Oseni L.O., Odafe S. and Chabikuli O.N. (2013). The effectiveness of community based distribution of injectable contraceptives using community health extension workers in Gombe State, Northern Nigeria. *Afr J Reprod Health*. 17(2):80-88.
2. Aledort J.E., Lurie N., Wasserman J. and Bozzette S.A. (2007). Non-pharmaceutical public health interventions for pandemic influenza: An evaluation of the evidence base. *BMC Public Health*. 7:208. <https://doi.org/10.1186/1471-2458-7-208>.
3. Balwan W.K., Saba N., Rasool N. and Sharma K. (2020). Decoding the Impact of Covid-19 on Education System: A Review. *Indian Journal of Scientific Research*. 11(1): 101-105.
4. Balwan W.K. and Kour S. (2021). Lifestyle Diseases: The Link between Modern Lifestyle and threat to public health. *Saudi Journal of Medical and Pharmaceutical Sciences*. 7(4):1-6.
5. Bubbico L., Bellizzi S., Ferlito S. and Cegolon L. (2021). The role of social medicine in the COVID-19 pandemic era. *Journal of global health*. 11:03068. <https://doi.org/10.7189/jogh.11.03068>.
6. Chin-Quee D., Bratt J., Malkin M., Nduna M.M., Otterness C. and Jumbe L. (2013). Building on safety, feasibility, and acceptability: the impact and cost of community health worker provision of injectable contraception. *Glob Health Sci Pract*. 1(3):316-327.
7. Bhore S.J. (1946). Bhore Committee Available from: https://www.nhp.gov.in/bhore-committee-1946_pg.
8. Giri P.P. and Bhatia V. (2020). Time to win the war against COVID-19: How and where community medicine professionals can contribute? *Indian J Community Fam Med*. 6(1):9-12. 10.4103/IJCFM.IJCFM_35_20.
9. Gentilini U., Almenfi M., Orton I. and Dale P. (2020). Social Protection and Jobs Responses to COVID-19: A Real-Time Review of Country Measures. World Bank, Washington, DC. World Bank. <https://openknowledge.worldbank.org/handle/10986/33635>.
10. Hawkins R.B., Charlesab E.J. and Mehaffeyab J.H. (2020). Socio-economic status and COVID-19-related cases and fatalities. *Public Health*. 189: 129-34. 0.1016/j.puhe.2020.09.016.
11. Horton R. (2013). Public health or social medicine? It matters. *Lancet*. 382(suppl.): S1. 10.1016/S0140-6736(13)62427-7.
12. Joseph A., Kadri A.M., Krishnan A., Garg B.S., Ahmed F.U. and Kumar P. (2018). IAPSM Declaration 2018: Definition, Role, Scope of Community Medicine and

- Functions of Community Medicine Specialists. *Indian J Community*. 43(2):120-121. 10.4103/ijcm.IJCM_115_18.
13. **Kark J.D. and Abramson J.H.** (2003). Sidney Kark's contributions to epidemiology and community medicine. *Int J Epidemiol*. 32:882-884.
 14. **Kasper J., Greene J.A., Farmer P.E and Jones D.S.** (2016). All health is global health, all medicine is social medicine: integrating the social sciences into the preclinical curriculum. *Acad Med*. 91(5):628-632. 10.1097/ACM.0000000000001054.
 15. **Kumar R.** (2005). Development of community medicine sub-specialities. *Indian J Community Med*. 30(2): 43.
 16. **Kumar S.** (2021). Psychosocial impact of Covid-19 Pandemic on school educators' mental health and role of cognitive competence in coping such adversities. *International Journal of Biological Innovations*. 3(2): 323-330. <https://doi.org/10.46505/IJBI.2021.3212>.
 17. **Kumari T. and Shukla V.** (2020). Covid-19: Towards Confronting an Unprecedented Pandemic. *International Journal of Biological Innovations*. 2(1):1-10. <https://doi.org/10.46505/IJBI.2020.2101>
 18. **Lee J.Q., Loke W. and Ng Q.X.** (2020). The Role of Family Physicians in a Pandemic: A Blueprint. *Healthcare*. 8(3):198. <https://doi.org/10.3390/healthcare8030198>.
 19. **Mooney S.J., Westreich D.J. and El-Sayed A.M.** (2015). Commentary: Epidemiology in the Era of Big Data. *Epidemiology*. 26(3):390-394. <https://doi.org/10.1097/EDE.0000000000000274>.
 20. **Mueller U., Omosehin O., Akinkunmi A., Ayanbadejo J., Somefun E. and Momah-Haruna A.** (2020). Contact tracing in an African megacity during COVID 19: lessons learned. *Afr J Reprod Health*. 24(2):27-31.
 21. **Negandhi H., Sharma K. and Zodpey S.P.** (2010). How can departments of community medicine shape the future of public health education in India? *Indian J Public Health*. 54(4):184-189. 10.4103/0019-557X.77257.
 22. **Pandey P., Sehgal A.R., Riboud M., Levine D. and Goyal M.** (2007). Informing resource-poor populations and the delivery of entitled health and social services in rural India: a cluster randomized controlled trial. *JAMA*. 298(16):1867-1875.
 23. **Roy N., Pal A. and Chaube R.** (2020). Covid 19: A Systematic Approach to Combat the Deadly Virus. *International Journal of Biological Innovations*. 2 (2): 88-94. <https://doi.org/10.46505/IJBI.2020.2202>.
 24. **Roy N. and Chaube R.** (2021). Environmental Impact of COVID-19 Pandemic in India. *International Journal of Biological Innovations*. 3 (1): 48-57. <https://doi.org/10.46505/IJBI.2021.3103>.
 25. **Saba N. and Balwan W.K.** (2021). Potential Threat of Emerging and Re-emerging Zoonotic Diseases. *Annals of the Romanian Society for Cell Biology*. 25(5): 29-36.
 26. **Sageena G. and Balwan W.K.** (2020). The Pandemic inside the Pandemic: Avalanche of misinformation. *Journal of Global Biosciences*. 9(7):7667-7678.
 27. **Verma A.K. and Prakash S.** (2020). Impact of Covid-19 on Environment and Society. *Journal of Global Biosciences*. 9 (5): 7352-7363.
 28. **Von dem Knesebeck O., Verde P.E and Dragano N.** (2006). Education and health in 22 European countries. *Soc Sci Med*. 63(5):1344-1351. 10.1016/j.socscimed.2006.03.043.