The Journey from Medical Nihilism to Pandemic Preparedness for COVID-19: A Global Health Challenge

Prof. Dr. Saira Afzal, Prof. Dr. Khalid Masud Gondal (T.I)

Dean of Public Health and Preventive Medicine, King Edward Medical University, Lahore; Vice Chancellor King Edward Medical University, Lahore

“Nihilism is a well-known phenomenon of attitude among the mass population with extreme skepticism believing that nothing in the world has a material existence or value. It is often times associated with extreme symptom or sign of pessimism and a radical skepticism that condemns existence.”

(Friedrich Nietzsche)

Many years after Nietzsche, Corona Virus Disease (COVID-19) has reminded us his theory in a new dimension of “Medical Nihilism”. The nations which expressed their deep doubts on the extreme destruction caused by the novel disease “COVID-19” or its existence as the lethal pandemic of the century or thought it is a disease no more lethal than seasonal flu, were soon to become the picture of the worst hit countries by the pandemic. This pandemic didn't respect any geographical boundary, gender, age or socio economical status. The most developed parts of the world have to practice lock downs, restrictions on human movements, public gatherings in order to get containment, mitigation and suppression of the disease. The COVID-19 with no vaccine, no chemoprophylaxis and no ideal therapy available yet, is continuously engulfing many precious lives and proved to be the worst nightmare for the health and economy of the world. It is a global public health emergency and evidence has established the mode of transmissions such as respiratory droplets, fomites and contact from person to person. Scientific evidence is awaited from multicentre high budget research trials including Recovery trial, Discovery trial and Solidarity trials for better prevention, management and development of medicines. Every country, state or province has shown implementation of effective policies and guidelines to prevent manage and control this disease. The professional community and medical fraternity are continuously producing research and evidence based practices. This disease has produced solidarity among nations to share their knowledge, experiences and research to propose possible solutions to meet this challenging situation. Pandemic control in a community is dependent on the surveillance systems, preparedness and rapid response. The surveillance required is more than a traditional system but a new robust real time surveillance which enables the medical professionals to detect events of significant health problems and control the damage in time. It improves communications at all levels nationally and internationally. Real-time surveillance systems include interoperable and interconnected electronic reporting systems. These surveillance systems could work efficiently if valid and reliable testing is performed with early warning alert generations and availability of daily updated laboratory findings and reports, which should be analyzed by trained epidemiologists to give policy guidelines.

The disease modeling and forecast for outbreak after
analysis and modeling developed on mathematical
tools to both forecast case counts during infectious disease outbreaks and
estimate the risk of infectious disease case importation/exportation, recoveries and deaths in
specific geographic areas is of paramount importance. The disease modeling and forecast for
outbreaks also assessed outbreak events reported on
official websites by combining multiple data streams
into a single probabilistic framework. Disease
outbreak information is assessed with computerized
big data and artificial intelligence that incorporate
population density information to estimate the
number of cases, transmission rates, basic
reproduction rates, effective reproduction rates, recovery rates, growth rates, doubling time,
infectivity rates, case fatality rates and infection
fatality rates for specific outbreak events.
Disease outbreaks and epidemics can spread at any
time and any place and if we are not prepared,
consequences can be fatal. Effective mitigation
requires that we all understand local risks and context
specific problems, need based assessments,
situational analysis to address the hard choices, and
invest in long-term community well-being. Without
mitigation actions, we jeopardize our safety, financial
security and self-reliance. Global damage and
consequences in terms of human health and financial
regressions over many years are hard to predict but
not impossible.
Herd immunity is suggested as a response to COVID-
19 pandemic. For example Sweden has responded to
the pandemic in ways that avoid full lockdown and
implement a continuous policy of social distancing. The risk of transmission increases risk of infectivity
rates, and infection fatality rates.
R₀ predicts the extent of immunization that a
population requires if herd immunity is to be
achieved, the spread of the infection limited, and the
population protected against future infection. To
prevent sustained spread of the infection the
proportion of the population that has to be immunized
(Pᵢ) has to be greater than 1 − 1/R₀. For example, if
R₀ = 2, immunization needs to be achieved in 50% of
the population. However, if R₀ = 4 the proportion
rises steeply, to 70%. Beyond that the rise is less
steep; an increase in R₀ to 10 increases the need for
immunization to 90%. R₀ of SARS-CoV-2 estimates
vary widely in population of Pakistan. The mean
estimate of R₀ is 3.2 (95% CI = 2.85, 3.41). The herd
immunity threshold is 68% (95% CI).
King Edward Medical University has always played
its role as the torch bearer of high professional
standards in education and research. Amidst the
challenging situation of COVID-19, King Edward
Medical University demonstrated the rapid response
and pandemic preparedness for COVID-19 by
providing timely medical services, diagnostic and
preventive services, trainings and management to
health care workers. Provincial and Federal
Government is given assistance by providing
technical experts. Faculty members are nominated
and recommended as the members of Technical
Working Group (TWG), Corona Expert Advisory
Group (CEAG) and a very high forum in provincial
policy making the Apex Committee chaired by the
Chief Minister. At federal level several presentations
were made by the faculty members of King Edward
Medical University to National Coordination and
Operation Cell (NCOC) as technical experts for
policy making about containment, mitigation and
suppression of COVID-19 at the national level. Risk
estimations were presented for various activities such
as markets, public transport, fitness centers and parks,
recreational parks, restaurants, schools, colleges,
universities and phasing of opening of each place on
the basis of expert opinion. Evidence based practices
were provided to public and launched telemedicine,
tele psychiatry and Corona Help desk to give support
for home isolation and home quarantine, burial
standard operating procedures as well as preventive strategies to general public. International collaborations to manage cases of COVID-19 especially ICU/HDU care, knowledge sharing and trainings were conducted through webinars and physical participation. The delegation from China was invited to King Edward Medical University to deliver trainings to medical health care professionals and also participated in third international BRIMEA conference. Largest epidemiological study and psychiatry study on COVID-19 were conducted in Pakistan by the department of Community Medicine and the department of Psychiatry under supervision of the Vice Chancellor KEMU. More than 50 research projects were approved and special issue of Annals of King Edward Medical University COVID-19 was launched to promote evidence based practices and to combat pandemics. Future vision is to establish the institute of infectious diseases in King Edward Medical University. It will help in surveillance of infectious diseases and pandemic preparedness for better prevention and management.

References