

A Dynamic Scientific Model for Recovery of Coronavirus Disease

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Abstract **Background:** Coronavirus is the most pressing scientific puzzle in the 21st century. This is a pandemic spreading globally through exploration of various wireless sensor networks. Yet Medical authorities are facing the obnoxious ever-increasing causes of coronavirus as a very global turning issue. **Aims:** The study aims to outline the scientific model for recovery of coronavirus disease with comprehensive follow-up and services. **Methods:** A dynamic scientific model was established in connection with recovery of coronavirus disease. This model identified the COVID-19 patients who need boosted follow up to recover with dynamic community cares. Sensor data were collected from the patient's profile, diagnosis and complication records at light and dark environments. **Results:** The study demonstrates total 150 patients suffered from coronavirus disease and stayed at home isolation within optical GPS locations. In a light environment, all patients recover from coronavirus disease due to wireless sensor network isolation, changing their GPS locations instantly with tightly closed eyes and wearing anti-radiation sunglasses, and also clothe with black uniforms in the whole body. The obese patients required long time to recover in dark environment in comparison with others. **Replication:** The findings replicate the coronavirus disease recovery for dynamic health security that the physicians provide on the priority of strategy, mental health service, innovations, potentiality and personalism. **Conclusion:** Scientific healthcare sensor knowledge is indispensable for recovery of coronavirus disease. The study reveals the implementation of sensor network approach to patients with coronavirus disease recognizing those with augmenting physical, technological and mental healthcare requirements. The study suggests future research trajectories of a new alternative sensor network isolation model to promote global public health security.

Keywords Coronavirus, Sensor network, Obese, Environment, Model, Security

1. Introduction

Coronavirus disease is nothing but misapplication of wireless sensor networks surrounding optical geographic location. This is a non-communicable sensor disease spreading worldwide through misusing of fluctuated and processed wireless sensor networks [15]. Until now Medical authorities are facing the undesirable escalation of corona virus towards human beings as a very global comprehensive issue. Coronavirus disease is a pandemic global problem, which is the grittiest scientific puzzle in the history of the world [81]. Coronavirus is tarnished [1,2,3,4,5] in the universe as an effect with unknown sources. The virus infected several people at Wuhan Province in China on

December 29, 2019 [6]. Then the number of people infected with the virus increased day by day and spread all over the world, and above 2 million deaths from the COVID-19 [7,85]. This new virus and disease were unknown before the outbreak began at Wuhan last year but till to date total confirmed total cases 92022539, total deaths 1970394 (3%) and recovered 65865510 (97%) [8]. The whole world is worried, anxious and scared in all spheres including social, economic and communication due to unwanted conditions of coronavirus [9]. The World Health Organization provides information and guidance online on the spread of the virus, as well as regular virtual conferences, meetings, press briefings and exchange of information [7]. COVID-19 or Coronavirus disease 2019 is affecting in 219 countries and territories around the world [8], [10] due to the presence of interconnected markets, complex emergencies, religious mass gatherings, variation in emergency healthcare systems performance within and between geographic landscape, seascape and skyscape [11,12,13].

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Wireless Sensor Network is an integrated infrastructure comprised of sensing, detecting, tracking, observing and reacting the individuals within geographic positioning systems (GPS) locations [14], which is deployed the indoors and outdoors in large sensor fields using object's light and radio signal [13,15,16,17,18,19,20,21,22,23]. Active eyes act as a receptor in a light environment. Current and customary medical systems cannot meet the requirements of patient needs in a timely fashion due to cutting-edge sensor healthcare systems [24]. This technology is actually valuable in some healthcare applications, which can be inserted into the human body for treatment services [25,26,27]. The cutting-edge sensor technology misuses in different services including healthcare activities, which have triggered a collective capacity of scarcities and securities. Wearable health-monitoring provides a revolutionary sensor technology, which serves as an alternative to traditional diagnosis, putting healthcare data on a path that is more remote, portable, and timely [28,29,30,31]. Physicians and health researchers use these healthcare data to evaluate body conditions with a sensor technology like internet of everything, artificial intelligence, deep-learning algorithm [32,33,34]. Moreover, sensor cameras along with sensor technology has a great advantage on non-communicable diseases to identify the classical symptoms [14]. Wireless sensor networks are a huge endeavor of digital health technology, including technology dependence, which has led to frustration due to lack of proper security. Smartphones can do a lot of lucrative things with at least 12 functions with digital health sensor systems [35,36]. Cyber hackers misuse the radio frequency through smartphones, telematics and high frequency sensor devices for spreading this corona remote sensing VIRUS among animals and human beings, mostly coronavirus [15]. The present world is being one-sidedly mistreated sensor networks one after another from cyber hackers [15]. The heartbreaking phenomena of this frustration are the foremost consequence of today's COVID-19 outbreaks in human beings [37].

The aim of the study is to build a new scientific model with multiple innovative approaches to solve the core challenges in global health security to recover coronavirus disease in order to provide the justifiable policy options by the use of sensor technology.

2. Scientific Model Design

This research method was conducted as PhD research work from October 2014 to May 2018 at the Universiti Malaysia Sarawak (UNIMAS), Malaysia. The materials and methods were connected with different parameters to enhance data collection, ISNAH Experiment [38]. According to ISNAH, the case study was conducted in different coronavirus disease recovery components, which are shown in **Figure 1**.

150 Coronavirus disease patients were selected randomly

at four districts in Sylhet division, Bangladesh. Out of them, 100 patients were male and 50 females. All patients were housed in home isolation separately with controlled body temperature, breathing rates, respiration, blood pressure and body mass index [39]. The experimental design was randomly divided into three experimental groups with Body Mass Index (BMI) including underweight, normal weight and overweight and obese, and all were isolated from wireless sensor networks individually. They lived in the room with sufficient light in 24 hours and avoided the dark environment. Each patient had tightly closed eyes and wore anti-radiation sunglasses and clothed with deep black uniform and ensured clean site quality.

They took sense creating foods, nutrition and drinks in their minds and souls. The test samples in this study were COVID-19 male and female patients for three months (July 2020 to September 2020). The study design was linked with different parameters, such as: field work, patient's selection and set-up in isolated locations without wireless sensor networks, assessment of isolated patients, intensive monitoring, evaluation and feedback sharing, data collection and compilation, data analysis and interpretations.

The study necessitates an integration of methods that restrict wireless sensor networks for every patient and identify its implication. This envisaged the case study taking in matter-of-fact research elements to investigate issues hoisted in the study sensor affected patients. The case study conducted in the studied area within July 2020 to September 2020 to identify the recovery system from the negative impact of processed sensor networks [40]. This research was a multi-diversified experiment in connection with sensor technology to augment non-communicable diseases among animals and the human body [41]. The study examined two specimens, one was a dog and another one was a cat among 14 individuals for identification of this misuse application. These animals are available in the study area and suitable for ISNAH experiment. On the priority of ISNAH Effect, the case study was selected among 150 patients in coronavirus disease with hiccups, fever, yawning, flatus, fluctuated body temperature, breathing rate, respiration and blood pressure [42]. The experiment took at dark and light conditions. The patients stayed in specific geographic locations in isolated rooms. Then measurement of an individual's coordinates location includes longitude, latitude and ellipsoid height with GPS and GNSS identifiers.

All general information regarding patient's history, diagnosis, case management, cognitive assessment, mental assessment and relevant status with affected conditions were checked for accuracy from the different sources and sources of information were also verified. The compiled and processed data were involved in the preparation of the data master sheet and assimilated into suitable systems used in the results and other segments consecutively. The compiled data were analyzed for presentation and interpretation using standard data analysis software like MS Office Suite 2019 and SPSS version 26.

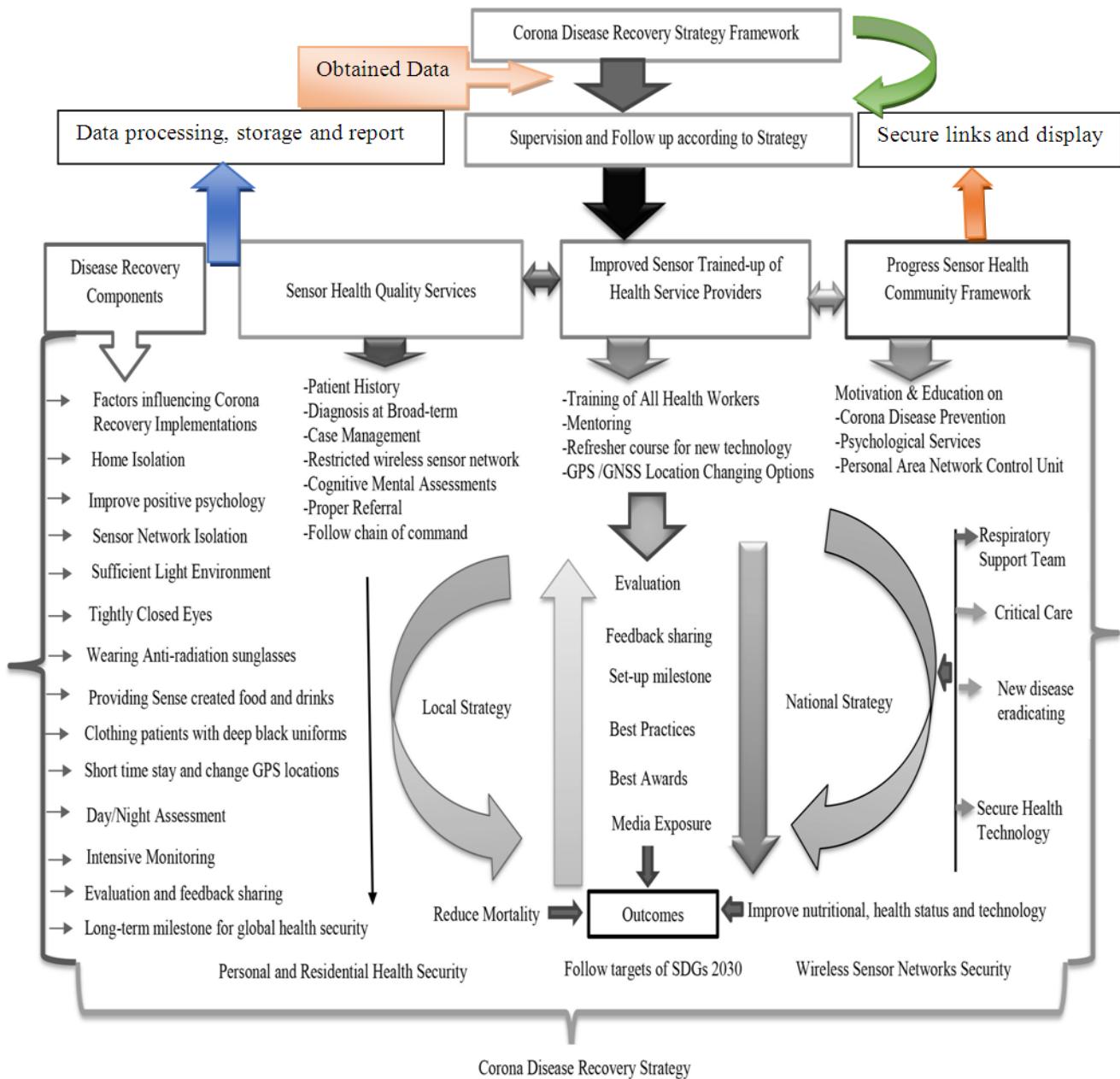


Figure 1. Coronavirus Recovery Strategy Framework [111]

3. Scientific Model Applications and Outcomes

The study is a case study among 150 COVID patients. All patients were followed the ISNAH guidelines for recovery from coronavirus disease, which was stated in the recent published book “Cyber Dazzal: Barriers to Sound Health” [URL: <https://www.rokomari.com/book/202988/cyber-dazzal---sushaysther-ontoray>] and published article at volume 10, number 1 on title “Impact Sensor Technology Enhancing Coronavirus disease” at the *American Journal of Biomedical Engineering* in the year of 2020 in the URL (Uniform Resource Locator): <http://article.sapub.org/10.5923.j.ajbe.20201001.03.html>

and volume 9, number 2 on the title “Impact of Sensor Networks towards Individuals Augmenting Causes of Diabetes” at the *International Journal of Diabetes Research* in the URL: <http://article.sapub.org/10.5923.j.diabetes.20200902.02.html>.

All patients are recovered within the stipulated time and no deaths in coronavirus disease. The age gradations are randomly selected within 20-80 years old. The respondents are males and females, which is shown in **Figure 2**. The COVID patients were about 73% male and 27% females. The study provided them health tips and followed up regularly on their health status for three months. The experts monitor all patients intensively. The health experts inspired them for 80% of psychological awareness in sound health

guidelines stated in the mentioned book and article. After three months, all respondents are sound health and free from sensor diseases in a light environment including coronavirus disease, heart attack, cancer, stroke, paralysis, numbness,

back pain, chronic kidney disease, acute respiratory distress syndrome and diabetes [112]. etc. [Appendix-C]. But the overweight and obese patients took more time for disease recovery than normal and underweight patients.

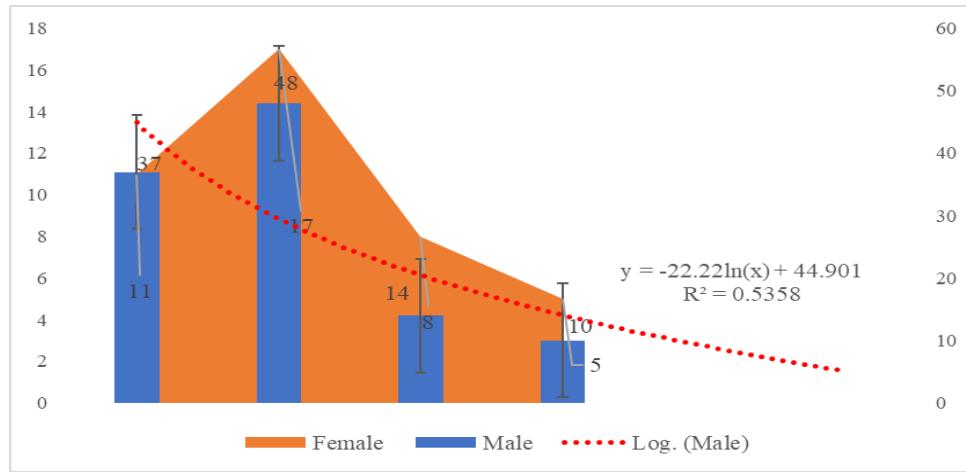


Figure 2. Model Applications and Outcomes among male and female COVID patients

$$\begin{aligned} &y = -22.22\ln(x) + 44.901 \\ &R^2 = 0.5358 \end{aligned}$$

(a)
(b)

Where, y is the Model Outcomes among male and female patients and x is the Applications in affected patients in coronavirus disease at sufficient light environment. Equation (a) has an adjustment with equation (b) R^2 (coefficient of multiple determinant of 0.5358 with standard error of estimate on observed value. The value of R^2 is nearby 1, which indicated model outcomes between male and female patients. So, the stated equation is accepted on the priority of applicable parameters including real time, tightly closed eyes, soundless environment, controlled personal sensor networks and changing GPS locations towards patients.

3.1. COVID Recovery in Home Isolation

The case study shows the COVID patients were recovered

at home isolation with isolated wireless sensor networks, tightly closed eyes, wearing anti-radiation sunglasses and clothing black cloths due to reducing the processed sensor nodes from individual's body organ at light environment and also clothed the patients with black uniforms through the whole body. Because, these components are reduced processed wireless sensor networks and created activeness in tightly closed eyes with GPS locations including longitude, latitude and ellipsoid height. The electron movement and blood transmission were easily improved than earlier conditions due to disconnect of wireless sensor networks. The age distribution among males and females' patients varied in diversity, which as shown in **Figure 3**. Male patients followed the recovery instructions, sometimes they created gaps in intensive monitoring and remarkable follow up than female patients accordingly.

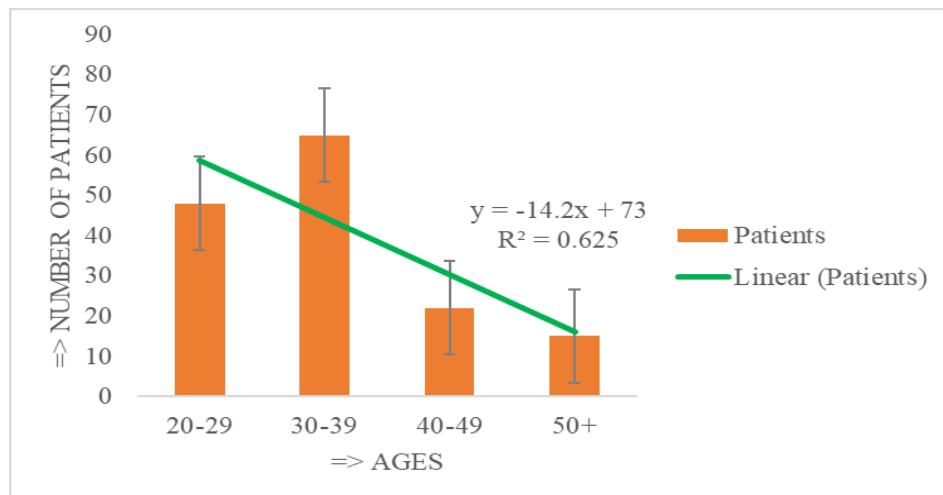


Figure 3. COVID-19 Patients with age gradation

$$\begin{aligned} y &= -14.2x + 73 & (i) \\ R^2 &= 0.625 & (ii) \end{aligned}$$

Where, y is the recovery time on censored patient and x is the affected patient in coronavirus disease with overweight and obese, normal and underweight conditions of BMI at light environment. Equation (1) has an adjusted R^2 (coefficient of multiple determinant of 1 with standard error of estimate on observed mean). The value of R^2 is equivalent to 1, which indicated sensor time was recovered in patient's mind satisfaction. So, the stated equation is accepted. The developed equation was then employed to stimulate human's corona recovery consciousness regarding restricted wireless sensor networks with high frequencies towards underweight, normal and overweight in BMI status. If the value of R^2 is negative, then the approaches between observed sensor time and simulated values recovered the coronavirus disease within stipulated times. For this reason, the stated linear equation is rejected. The existing sensor affected time will be

accepted, if the value of "GPS distance" increases. The ISNAH approach will be accepted, if the value of overweight patients must be reached on >26 BMI and above.

3.2. COVID Recovery Mental Health Services

From the study, COVID recovery services were applied 80% of psycho-technological and 20% of physical medicine, which was shown in **Figure 4**. The model works on COVID Recovery Administrative Isolated Wireless Sensor Networks for global public health and mental health services. The study illustrates all patients with coronavirus disease recover within 5-7 days to follow the disease recovery components. But the overweight and obese patients recover more than one week at light environment and 2-3 weeks at dark environment. The findings replicate the sensor disease recovery at local level in health security that the physicians provide worldwide.

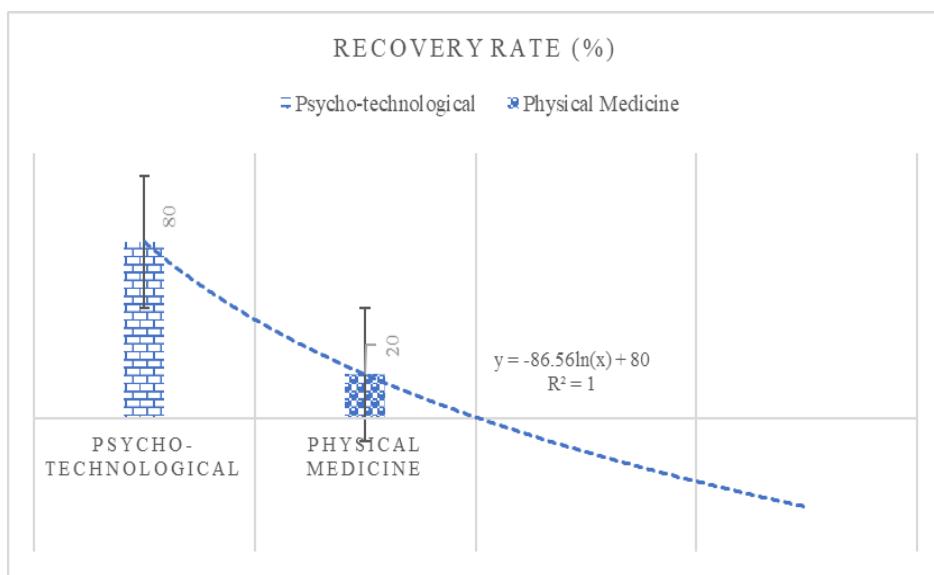


Figure 4. The rate of COVID recovery in mental health services

$$\begin{aligned} y &= -86.56\ln(x)+80 & (1) \\ R^2 &= 1 & (2) \end{aligned}$$

Where, y is the rate of COVID recovery in mental health services and x is the affected patient in coronavirus disease with body mass indices at effective light conditions. Equation (1) has an adjustment with equation (2) R^2 (coefficient of multiple determinant of 1 with standard error of estimate on observed value). The value of R^2 is equivalent to 1, which indicated recovery rate was stated in psycho-technological and physical medicine. So, the stated equation is accepted on the priority of the patient's recovery. The developed equation was then employed to stimulate human's corona recovery consciousness regarding the application of psycho-technological parameters and physical medicine with restricted wireless sensor networks.

4. Discussion

4.1. Model Reflection

The findings reflect the importance in coronavirus disease management through treatment and recovery that the physicians provide, which recover due to restricted access wireless sensor networks, tightly closed eyes, change longitude/latitude and ellipsoid height instantly, wearing black uniform and sunglasses and stay in a light environment. In the dark environment, the obese people are more vulnerable than normal and underweight patient and they take more time to recover in light environment in all isolation period. Each sensory system has transformed tissue containing an array of fixated neurons to sense and transduce specific physical stimuli in optical sights [43]. Human eyes are the powerful natural close circuit camera, which focuses

optical sight within GPS position. Through assimilating adaptive optics micro-stimulation with high-speed eye tracking, the retinal function can be explored at the level of the individual cone photoreceptor in active eyes [43]. The eye offers one exception to this situation, with the cornea and lens affording a view of the retina that is only obscured by imperfections in the optics. Recent advances in ocular imaging now make it possible to overcome these imperfections and image individual photoreceptors in the living retina [44]. The study assesses the scientific model for treatment and recovery from this coronavirus. Sensor data were collected from individual's profile, diagnosis and sensor node records at laboratory experiments, where no death and all are recovered within 2-5 days in general. But overweight patients recovered in a longer time than in general. The case study was completed at four districts in Sylhet division of Bangladesh, viz. Sylhet, Sunamganj, Habiganj and Moulvibazar. There are some advantages of the dynamic scientific model, which are mentioned as follow:

- i. The scientific model can be applied to all patients in sensor diseases / CASID at local, national, regional and global levels [Appendix-C].
- ii. This model is appropriate in a wide variety of disease management and recovery.
- iii. It has low cost and ease to accommodate to all patients with sensor diseases / CASID.
- iv. It can be used in home isolation, small offices in connection with cognizance on non-communicable diseases.
- v. The model can be applied to health maintenance in organizations, single clinics, hospital-based care and private practice as well as large public health service centres/clinics.
- vi. The model can be applied to give recent developments in coronavirus disease related health education, nutrition, current treatment directions, future health security status.
- vii. The model can be applied to integrate the patient's perspective, treatment preferences, and readiness to GPS location's change within individual's or integrated body boundary areas.
- viii. A useful dynamic model can be practiced anytime including prescriptive and predictive.
- ix. The model can advocate specific actions and options that can be taken to improve the sensor effectiveness and control, not just retrospectively explain events after they happen.
- x. It can address how a medical care system could use assessment information to tailor personalized interventions, based upon the uniqueness, situation, and desires of a novel sensor disease recovery.
- xi. The model is systematic, periodic, unique and free from all types of wireless sensor networks.
- xii. No need must use during the implementation of this model towards animals and human beings.

- xiii. No restriction in handshake and social distance among each other's body boundary area.
- xiv. The model is suitable in remote health services including rural and hilly area's health systems.
- xv. No need to be a health expert but be aware of sensor effectiveness in real time and GPS locations.
- xvi. No restriction in physical distances for religious, cultural and meeting etc. activities.
- xvii. No need for physical distancing among each other during funeral activities of the body.
- xviii. In future, the model will be a lucrative and favorite for CASID research and health education management.
- xix. Finally, the model is not rigid and static, but can invite evaluation and be open to feedback, new data recovery, continual refinement and sharing to all.

Overall, the scientific model reduces death from sensor disease in all countries of the world. Although, maximum deaths in some countries due to lack of dynamic sensor security, (a) The 389,621 deaths from COVID-19 in USA, which is the highest in the world, (b) The 204,726 deaths in Brazil, which is the second ranking in the world, (c) The 151,564 deaths in India at third position in the world, and (d) The 135,682 deaths in Mexico at fourth ranking in the world [8]. General people can be aware from the study of this model, which is misused by cyber hackers. Cyber hackers scan the retina of the human eye with sensor technology to find out its current location and monitor every moment. The advantage of using decision support interlinks with wireless sensor network [47]. Recent progress in the use of biometric identifiers and simplified electronic medical record systems will mean that this is possible [48]. As a result, your location will be known immediately wherever you open your eyes at the country or international border and your activity will go to the sensor server along with the image. The sensor network has to adjust to your vision in the atmosphere. Cyber hackers spread the fake word in the media that he died after being attacked by Corona. Allah (The Creator) said in the Noble Quran as [87]: *Evil (sins and disobedience of Allah, etc.) has appeared on land and sea because of what the hands of men have earned (by oppression and evil deeds, etc.), that Allah may make them taste a part of that which they have done, in order that they may return (by repenting to Allah, and begging His Pardon).*

4.2. Treatment and Recovery

COVID-19 is better cured in time and locations including diagnosis, treatment, prognosis, prediction and disease prevention. The research has shown that 80% of the disease needs to be treated through psychological and 20% through physical therapy and medicine. But the case study has performed 100% recovery from the application of scientific models at home and network isolations due to controlling recovery components. Controlling seven places for sustainable non-communicable disease management, this is to prevent the state-of-the-art of various aspects of wireless

body area sensor network [54]. Moreover, the advice of a doctor experienced in medical sensors can be taken in this regard to advance the field of disease care [55]. If a person lives in a remote area where there is no regular registered doctor. Then he has to think of alternative arrangements. The sick person should wear sunglasses over his eyes, never sleep or stand in the dark, and drink regular lemon-ginger tea until he recovers. In addition, a teaspoon of lemon juice, a paracetamol (800 mg) and a glass of oral saline should be taken together. Regularly the person eats garlic, black cumin, neem leaf powder and honey together and changes his/her bed position from time to time for good health and is very careful in using a smartphone. Anti-radiation bed and mosquito net must be used in bedroom and facility-based care when it is needed [56]. The obese patients are risk in COVID-19 due to respiratory syndrome [88,89,90,91, 92,93,94]. Designing of efficient biosensors for sensitive and selective measurement of specific biomarkers, is a significant step for the primary disease diagnosis, treatment, and management with emergency healthcare framework [45,46,53]. The whole world today is worried about the treatment of coronavirus disease (COVID-19). Because vaccines alone cannot cure corona completely. Moreover, the following coronavirus disease control model can enhance all for recovery from coronavirus disease, which is shown in **Figure 5**.

Therefore, with the joint efforts of doctors, nurses, administration and the general public, we need to move fast to recover from this disease. Therefore, the following rules will help us to move forward, which is known from the ISNAH test of PhD research. The recovery rules are [111] stated as below:

- i. If anybody suddenly suffers sneezing, hiccups, coughing, cyanosis, runny nose, flatus, chills, headache, discomfort or gasps after being in a certain place, immediately closes his/her eyes tightly, wears sunglasses (anti-radiation glass), clothes black cloths and quickly changes his existing place to a new place. No talk within 5-12 minutes and no mobile phone beside him. This is must do.
- ii. The person then wears sunglasses (anti-radiation glasses) with their tightly closed eyes for at least 7 to 25 minutes in the new place. If the person feels abnormal, uneasy or weak, quickly change his/her location. No mobile phone, electronic device, telematics, GPS (Global Positioning System) or any sensor device will be with you while you are in the new place. But personal area network control units (PANCU), anti-radiation bed, radiation free mosquito net can be used.
- iii. If a person has or is likely to have coronavirus disease, he or she must follow the above rules. The patient must follow the rules until he or she is completely healed.
- iv. If the patient feels unwell or sick, mixes one teaspoon of lemon juice, one paracetamol, two pieces of garlic, one teaspoon of black cumin, neem leaf powder, two teaspoons of honey and one glass of oral saline together in a slightly warm condition. And change the position of the bed from time to time and be very careful in using the smartphone for good health. If he/she does not recover, consult with the expert physician immediately.
- v. No recitation of the Noble Quran, Gita, Bible reading, any music, audio-video, any news, FM radio, any movie or lecture etc. can be heard or seen with a mobile phone next to the pillow of any sick person. These can be seen or heard by placing a mobile phone 6 feet away from the boundary of everyone's body and wearing sunglasses. Therefore, mobile phones cannot be used in mosques, temples, classrooms, meeting rooms, etc., and system security and institutional network control units must be used in these places.
- vi. By cooperating with the police and the public, cyber hackers can be detected and appropriate and dynamic measures can be taken to remove coronavirus disease through law and administration. However, no words, sounds, mobile phones, wireless / networks can be used while searching for cyber hackers. For their own safety of the security team, the police can use weapons and the public can use sticks or defensive measures. All countries must have all kinds of networks and electricity off during special operations at the same time. And when meeting all the acquaintances / strangers, the higher authorities have to make sure that the smartphone or electronic device of the person concerned is off or 6 feet away, so there is no need to be worried or frustrated. Allah said (interpretation of the meaning): "And do not be anxious nor grieved" [80].
- vii. If no solution or cure is found after following the stated rules including quoted **Figure 6**, the concerned patient or his guardian must consult a registered doctor and health expert. If a person lives in a remote area where there is no regular registered doctor. Then he has to think of alternative arrangements, which is discussed earlier.
- viii. When doctors or nurses are ready to treat patients, they must wear anti-radiation sunglasses with accommodating room temperature and sufficient light. During consultation time, a light environment is sufficient. But room darkness, wireless sensor networks, smart phones and sensor devices are restricted within an individual's body boundary.
- ix. If the effects of coronavirus disease are widespread in a geographical area, the local, regional and international mobile and sensor networks in those areas should be disconnected for 5 to 10 minutes or suitable time.
- x. The sleeping room must be without network and sensor free, no person or animal in that room can ever use the wireless network, only to be damaged.

- The patient's bed and mosquito net should be anti-radiation categories at home and hospital.
- xi. When meeting all acquaintances / strangers, including office assistants and housekeepers, make

sure that the smartphone or electronic devices of the person concerned are turned off or 6 feet away. You can't meet with your own or someone else's wireless sensor devices.

Must be aware on processed sensor effect.

Step-1: Pre-treatment

- Anti-radiation sunglasses.
- Sufficient light environment.
- Wireless Network free zone.
- Avoid CCTV area and mobile phone touching.
- Mental preparation on tightly closed eyes and stay in PANCU till to recover .

Step-2:Treatment

- Keep quietly silent and avoid unuttered.
- Change your GPS positions, if you talk or see in open sky.
- Wear anti-radiation sunglasses with tightly closed.
- Never use mobile phone at dinning, washroom, bedroom & change room/GPS locations.

Step-3: Post-treatment and follow up

- Suddenly if you feel uneasy, weakness or relevant symptoms of sensor disease, quickly change self-location.
- Avoid all types of phobia and follow positive psychology and alternatives.

Wearing sunglasses (black or blue) and quick change individual's GPS positions, and stay at changed locations with silent mood and closed eyes at light environment for 5-12 minutes.

GPS Positions ==>
Technological Treatment with Jammer device

Psychological Supports

Pre-requisite knowledge

Corona Disease Control Model

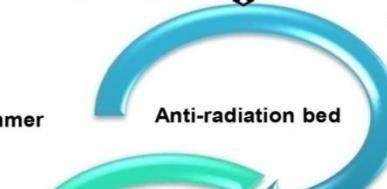
Corona Pre-requisite

Suddenly feel uneasy, uncomfortable, cough, sneezing, yawning, hiccup, cyanosis, feverish

Without GPS Position

Personal Area Network Control Unit

Quick change own body boundary except cell phone



Anti-radiation bed

Staying at Isolated Motivation area

Briefing on Positiveness

Control Sensor Device

Use Tracheal support with domain room

Quick Improvement of Conditions

Set-up milestone Restricted SMART device

Life is better than smart phone and sensor networks. But depend upon on your awareness.

Food

Education

Health

Dynamic Security

Consciousness

Maintenance procedure

Refreshment device

Dynamic Treatment

Counselling and Follow up

Food

Education

Health

Dynamic Security

Follow up conditions

Refreshment support

Follow Doctor's Advice

Forensic Medical Expert

Prevent Unauthorized Person

No Access wireless sensor networks and mobile phone.

Sensor Monitor and Criminologist

Physicians, Psychiatrist and Nutritionist

Bio-medical engineer and Sensor Technologist

Support options

Alternative options

Dynamic Treatment

Counselling and Follow up

Food

Education

Health

Dynamic Security

*Setting the Personal Area Network Control Unit (PANCU) including bed and wash room, dinning and kitchen room, clinic and healthcare centre, hospital and diplomatic zone, reading/prayer room and meeting/conference hallroom etc.

*If possible wireable connection is suitable, but avoid GPS sensors including node and distributed networks.

Figure 5. Dynamic Scientific Model for Recovery of Coronavirus disease

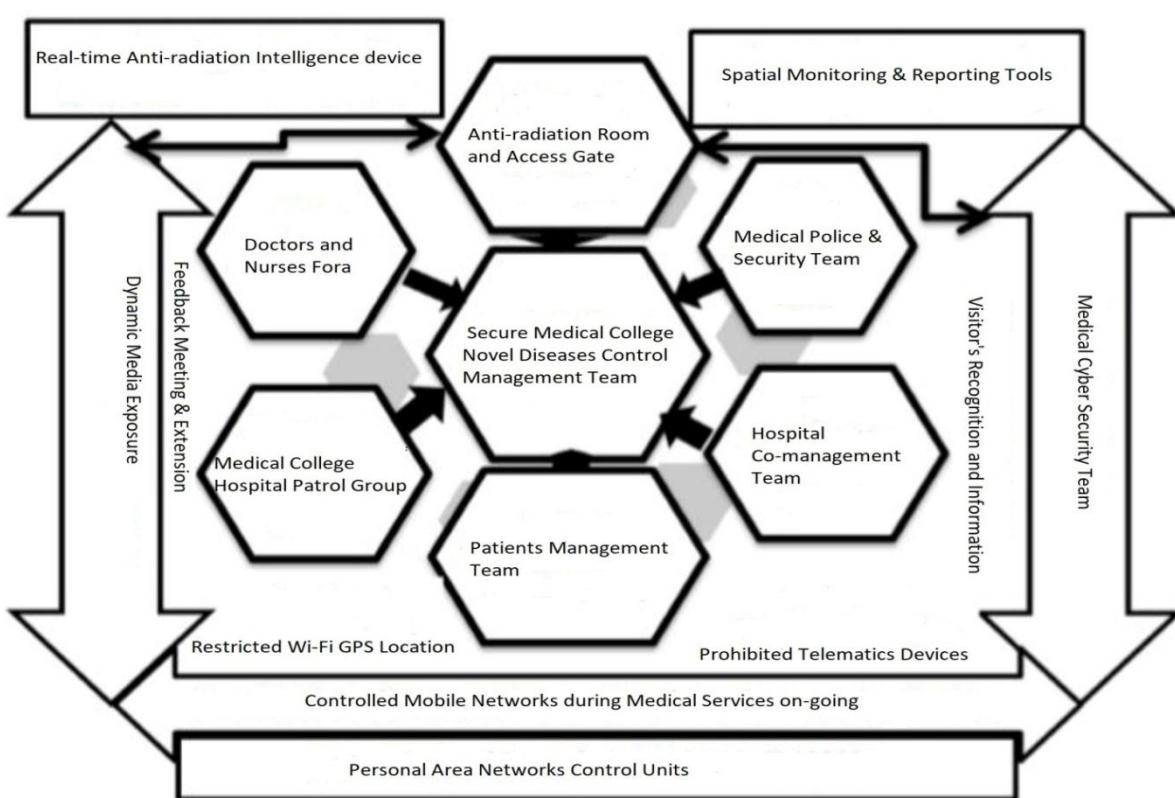
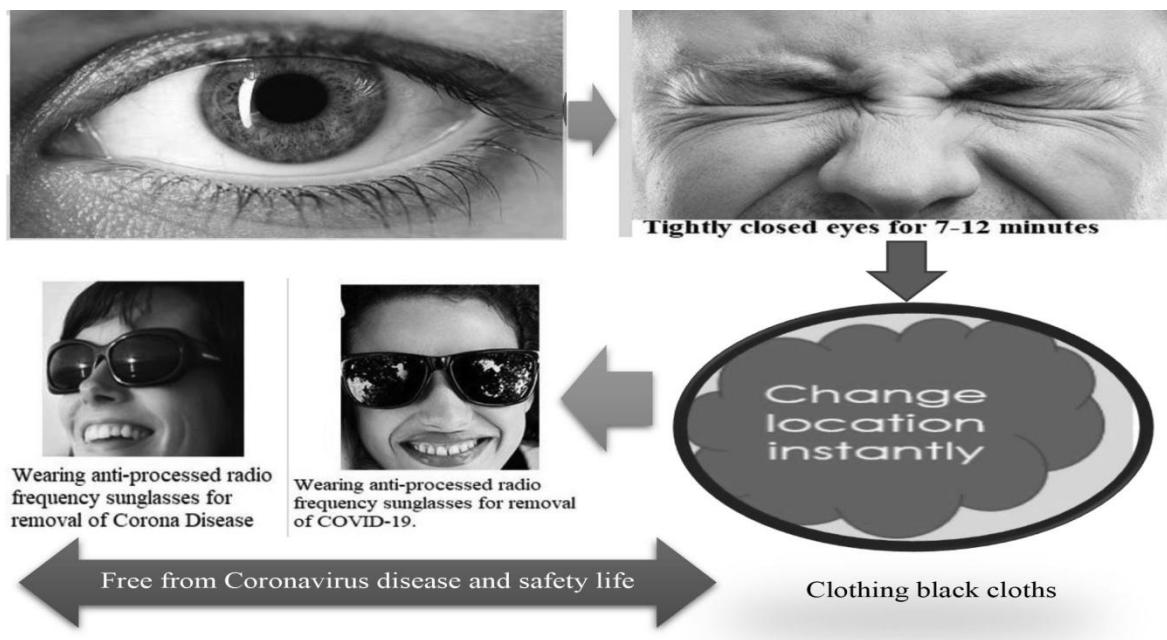


Figure 7. Sensor Disease Management Model

- xii. The isolated room is set up Personal Area Networks Control Units with close eyes and changing options including GPS locations, GNSS distances and body boundary areas. If you have a sensor device or RFID detector, you can detect the processed radio frequency in the patient and switch-off immediately at real-time in GPS position, then the patient

- recovers from coronavirus disease.
 xiii. Individuals can follow yoga as a psycho-scientific treatment regularly. Because meditation is a good medication in all ages of genders. It sustains cooling in the brain and cleansing in mind due to effective respiration.

Above all, If the patient could not recover the coronavirus disease applying stated the recovery model rules, then the physicians can treat according to diagnose, treat, predict and prevent disease on the priority real-time and changing GPS locations.

4.3. Performance in Management Model

Corona virus is our learning with cutting-edge technology, which is continuing to advance on a dramatic impact on the science and engineering workforce [108]. This is the time to shift focus to efforts that support returning to manage and restarting operations according to requirement changes for the rationalized generations [104]. Global Coronavirus recovery (COVAX) is a global solution for COVID-19 treatment providing vaccines for controlling with effective testing and preventives measures [82]. Treatments give these tools to help patients to treat COVID-19 [83].

Mask use is not recovered from coronavirus disease. Again, there is no relation between application of mask and corona recovery. But cyber hackers send messages to the main health administration for development of policy on mask applicability. Most health administrators have no idea on bouncing messages. As a result, they circulate policy to the security force. According to the rules and regulations, the security force monitors the general people. Public suffers from disease and punishment from cyber hackers and police respectively. Scientific healthcare knowledge is essential for treatment and recovery with medical sensor technological devices but such knowledge is poorly documented and relevant treatment supports are still below par. The study suggests future research trajectories of a new dynamic alternative model to promote global public health security concerning Sustainable Development Goals 2030, which was illustrated in **Figure 7** on sensor disease management model.

4.4. Innovations on Recovery

COVID-19 recovery can innovate through technological science, medical science, crisis management interlinking with public and private sectors [105,109]. Innovation will have a significant tool to play in improving from the aftershock of coronavirus. There are some innovations to

innovate from new scientific sensor model, such as:

- i. Quick sensor network affected towards man, animals, plants and objects within GPS body boundary areas.
- ii. Disseminate the distributed and node sensor networks to the whole network areas through individual or group wise.
- iii. Overweight and obese animals /human beings are more prone to be negatively affected by sensor telematic networks because of peripheral congested environment and splitting processed and fluctuated frequencies .
- iv. The radio frequencies of telematics (above 500mHz to 999 mHz) were detected using Automated Radio Telemetry System and retina scanning within the optical sight distances.
- v. Exposure high RFID detects to die and damage the living and non-living objects less time in dark than light environment.
- vi. Treatment and recovery of the disease with setting PANCU and changing the object instantly from GPS locations.

However, recovery from sensor disease, particularly COVID-19, the management rules can follow with anti-radiation parameters, such as black sunglasses, anti-radiation mosquito net and bed, which is shown in **Figure 8**.

The researchers developed a formula from the study, called ISNAPHOE (Impact of Sensor Networks towards Animals, Plants, Humans, Objects and Environments). The ISNAPHOE effect as:

“Due to the active sensor technology, every human, animal, plant, object or existing environment is affected by the fluctuated or processed frequencies of its movement through electromagnetic transmission within the boundaries of the body located in the GPS positions and GNSS distances. This effect is proportional to its weight or site factors and disproportionate to its GPS positions and GNSS distances. As a result, the person, animal, plant, object or environment is damaged by the changing waves and for recovery systems, the object should change instantly from the existing location or situation”.



Figure 8. Follow-up of anti-radiation processed radio frequency for secure life

4.5. Potentially for Future Directions

The COVID-19 pandemic stances unique challenges in response and recovery trying to manage the shock in the face of existing societal threats like poverty, inequality, education and gender violence [106]. The Coronavirus has affected 71 million people in extreme poverty, 90% of students out of school and 30% gender violence [107]. From this scientific model, we achieve the following potentials to manage coronavirus disease, such as:

- o It can enhance security systems for teachers, medical doctors, nurses, health officers, scientists, researchers, patients and other stakeholders, who have active open eyes or sensor devices.
- o Experts have tried to implement ways of reducing this impact by encouraging pertinent institutions to go to a competitive market with dynamic treatment and recovery through alternative potentialities.
- o Large potential on RFID technology uses including learning, research, servicing and access benefit sharing to achieve specific goals related to national health policy in connection with Sustainable Development Goals 2030.

In the future, there is a lot of scope in wireless sensor networks in the world, which can be aware of the effect of it, as shown in **Figure 9**. People are at risk with wireless sensor networks, but human beings are attentive to manage their healthy life [95] for security. Health security capacity has become increasingly within the broader context of health systems [96]. Managing the global regime for controlling the international spread of infectious diseases is a central and historical responsibility of WHO [97]. State-of-the-art security frameworks have been extensively addressing security issues [98]. There is no consensus among analysts about the specific parameters of health security [99]. The world needs a stronger, more resilient framework for global health security [100]. Healthcare data has the highest potential for improving patient outcomes [101]. Global health security threats are increased through manmade [102]. COVID-19 outbreaks are the learnings that can avert the cost crises of social, political, economic and health systems [103]. The COVID-19 pandemic reflects in mental health services to staying at home and doing less in terms of social interactions and exercise with practical skills to help cope with stress [110].

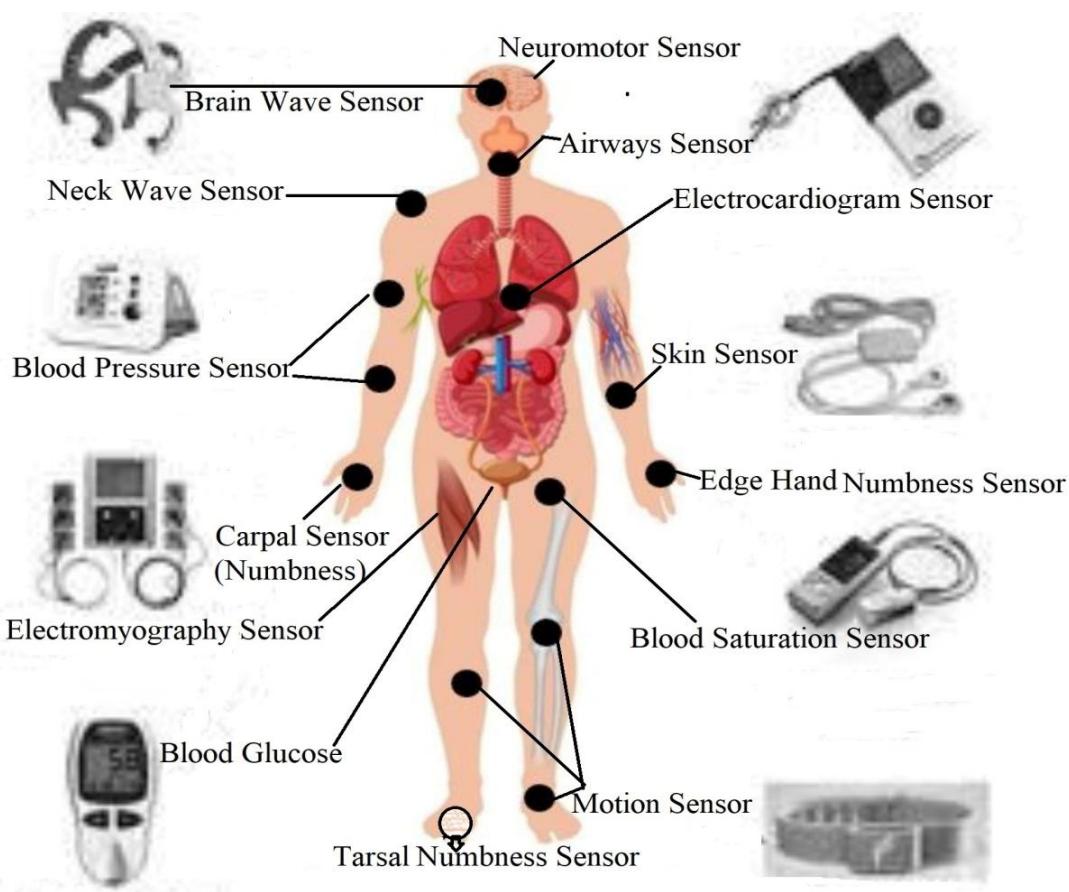


Figure 9. Wireless Sensor Networks affect in the whole body producing different diseases

4.6. Further Personalism Treatment

Medical treatment is sensitive and integrated management in health services. Due to cutting-edge nano sensor technology the management of medication is not only for physicians but also recovery through the dynamic recovered actions of sensor experts. Further personalism of medical science can be shared with multidisciplinary sectors including sensor technology, advanced nutrition and herbal digitalization. So, doctor's personalism is required to be flexible in treatment and recovery of CASID (Common Acute Sensor Infections and Disorders) [111]. The higher authority can allow them, who are interested in sensor health treatment by the physicians or sensor experts. For this purpose, the administration should restrict misapplication on sensor health activities including retina recognition, finger print, DNA sequencing and voice decoding etc.

4.7. Limitations in Implementation

The major limitation is the stimulation of individual neurons is difficult when individuals sit within an array of similar receptors, with the array itself hidden inside a sensory organ [48]. False interface, bouncing message and voice are increasing through sensor technology due to lack of effective security [16]. Cyber hackers spread the fake information in the media that he died after being attacked by Coronavirus [16]. Despite the spread of information technology, it is very difficult to find the right antidote to cure coronavirus disease [56,57]. Many mobile phone users are not aware of the health security measures of sensor technology [58,59,60,61,62,63,64,65,66,67]. As a result, various non-communicable diseases including corona are increasing abnormally [15,61]. The research organization develops a set of recommendations for all countries to recover [54] corona with its challenges. The crowdsourcing data about providers, facilities, and health systems is likely to grow as more people with sensors are at risks [63]. Violence against healthcare technology providers has increased worldwide in the context of COVID-19 for challenging treatment with insecure technology [64,65,66]. Some people believe to reduce spread and deaths due to using facemasks, social distancing, and avoid handshaking [67]. But these are bouncing messages from cyber hackers sending to the higher authority, which are almost fake. Cyber hackers highlight scamming mails, voice calls and electronic news for media exposure as an infodemic with phobia formula accelerating negative psychology towards mass people [68,69,70,71,72,73,74,75,76,77,78,79,86] during the management of disease outbreaks as a global problem [81]. Moreover, COVID-19 treatment situation has not improved yet due to discriminatory nature of the existing health system [84]. The authority can ensure the effective physical and technological security in 15 locations including office room, wash room, bed room, dining place, meeting room, airport, bus stand etc.

5. Conclusions

The study assessed the dynamic scientific model to recover coronavirus disease due to staying at home with isolated wireless sensor networks within GPS location including latitude, longitude and ellipsoid heights. Scientific healthcare sensor knowledge is indispensable for recovery of coronavirus disease. The study reveals the implementation of sensor network approach to patients with coronavirus disease recognizing those with augmenting physical, technological and mental healthcare requirements. Every State member of the United Nations should delete the retina scanning, DNA sequencing and fingerprint databases according to the National Sensor Health Policy and Sustainable Development Goals 2030. The study suggests future research trajectories of a new alternative sensor network isolation model to promote global public health security.

6. Declarations

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6.2. Data Availability

The data being used to support the findings of this research work are available from the corresponding author upon request.

6.3. Competing Interests

The authors declare no potential conflict of interests in this research work.

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REFERENCES

- [1] AFP. (2021, January 10). A year after first death in China, coronavirus source still a puzzle. Agence France-Presse (AFP), Wuhan (China). Issued on: 10/01/2021 - 04:20. URL: <https://www.france24.com/en/live-news/20210110-a-year-after-first-death-in-china-coronavirus-source-still-a-puzzle> (Accessed Time on January 11, 2021 at 10:00am).
- [2] Prothom Alo. (2021, January 10). One year after the first death in Corona, the source is still unknown. Dhaka, Bangladesh. URL: <https://www.prothomalo.com/world/করোনায়-প্রথম-মৃত্যুর-এক-বছর-আজ-উৎসেখনো-আজানা> (Accessed Time on January 11, 2021 at 7:00 am).
- [3] Ramirez, L. and Martin, D. (2021, January 10). A year after first death in China, coronavirus source still a puzzle. Agence France-Presse Wuhan and Shanghai, China. URL: <https://www.thejakartapost.com/news/2021/01/10/a-year-after-first-death-in-china-coronavirus-source-still-a-puzzle.html> (Accessed Time on January 11, 2021 at 11:00 am).
- [4] Gulf News. (2021, January 11). COVID-19: A year after first death in China, coronavirus source still a puzzle. Agence France-Presse (AFP), Middle East. URL: <https://gulfnews.com/world/asia/covid-19-a-year-after-first-death-in-china-coronavirus-source-still-a-puzzle-1.1610263554970> (Accessed Time on January 11, 2021 at 9:00 am).
- [5] Higgins-Dunn, N and Will Feuer, W. (2021, January 4). A year since COVID first emerged in China, the world battles its deadliest surge yet. Consumer News and Business Channel (CNBC), USA. URL: <https://www.cnbc.com/2020/12/31/one-year-since-covid-19-first-emerged-the-us-is-battling-a-deadly-winter-outbreak-as-vaccines-trickle-out.html> (Accessed Time on January 11, 2021 at 8:00 am).
- [6] WHO (World Health Organization). (2020). Investing in and building longer-term health emergency preparedness during the COVID-19 pandemic: Interim Guidance for WHO Member States, July 2020. Geneva: World Health Organization. URL: [WHO/2019-nCoV/Emergency_Preparedness/Long_term/2020.1](https://www.who.int/publications/m/item/WHO_2019-nCoV_Emergency_Preparedness_Long_term_2020_1). Licence: CC BY-NC-SA 3.0 IGO.
- [7] WHO (2021). WHO Director-General's opening remarks at the media briefing on COVID-19 – 11 January 2021. URL: <https://www.who.int/director-general/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19-11-january-2021> (Accessed time on January 12, 2021 at 10:00 am).
- [8] UNG (United Nations Geoscheme). (2021). Worldometer COVID-19 Data. COVID-19 Coronavirus Pandemic. January 13, 2021, 06:39 GMT. URL: https://www.worldometers.info/coronavirus/?utm_campaign=homeAdvegas1? (Accessed time on January 13, 2021 at 10:00 am).
- [9] UNCTAD. (2020). United Nations Conference on Trade and Development. The Impact of the COVID-19 Pandemic on Trade and Development: Transitioning to a New Normal. UNCTAD/OSG/2020/1, UN, USA. 1-113. URL: https://unctad.org/system/files/official-document/osg2020d1_en.pdf.
- [10] UWI. (2020). *Fact About COVID-19. Key Messages and Actions for COVID-19 Prevention and Control in Schools*. A collaborative meeting with technical support among UNICEF, WHO and IFRC (UWI). New York Head quarter, USA. Page 1-13. URL: https://www.who.int/docs/default-source/corona/virus/key-messages-and-actions-for-covid-19-prevention-and-control-in-schools-march-2020.pdf?sfvrsn=baf81d52_4#:~:text=COVID%2D19%20is%20a2019%2DnCoV%27.
- [11] Butun I., Ra I.H., Sankar R. (2015). PCAC: Power-and Connectivity-Aware Clustering for Wireless Sensor Networks. EURASIP J. Wirel. Commun. Netw., 1:1-15. DOI: 10.1186/s13638-015-0321-6.
- [12] Agarwal, N. and Hussain, S.Z. (2018). A Closer Look at Intrusion Detection System for Web Applications. Security and Communication Networks, 1-28. DOI: <https://doi.org/10.1155/2018/96013>.
- [13] WHO (World Health Organization). (2005). WHO Eastern Mediterranean Region: Joint External Evaluation Mission Reports. Geneva: World Health Organization, 2005.
- [14] Sohraby, K., Minoli, D. and Znati, T. (2007). Wireless Sensor Networks: Technology, Protocols and Applications. 1-376. Wiley-Interscience, USA. ISBN: 978-0-471-74300-2.
- [15] Miah, M.R., Rahman, AAMS., Khan, M.S., Samdany, A.A., Hannan, M.A., Chowdhury, S.H., Sayok, A.K. (2020). Impact of Sensor Technology Enhancing Coronavirus disease. *American Journal of Biomedical Engineering*, 10 (1). 16–26. DOI: 10.5923/j.ajbe.20201002.
- [16] Whitehouse, K., Jiang, F., Woo, A., Karlof, C. and Culler, D. (2004). Sensor Field Localization: A Deployment and Empirical Analysis. Technical Report, University of California, Berkeley, USA.
- [17] Whitehouse, K., Karlof, C., Culler, D. (2004a). Hood: A Neighborhood Abstraction for Sensor Networks. Proceedings of the ACM International Conference on Mobile Systems, Applications and Services. Boston, MA, USA.
- [18] Whitehouse, K., Karlof, C., Culler, D. (2004b). Getting Ad-Hoc Signal Strength Localization to Work. Technical Report. University of California, Berkeley, USA.
- [19] Lorincz, K., Malan, D.J., Fulford-Jones, T.R.F., Nawoi, A., Clavel, A., Shnayder, V., Mainland, G., Welsh, M., Moulton, S. (2004). Sensor Networks for Emergency Response: Challenges and Opportunities. IEEE Pervasive Computing, Special Issue: Octo-Dec, 2004.
- [20] Whitehouse, K. and Jiang, X. (2004). Calamari: A Sensor Field Localization System. URL: <http://www.cs.berkeley.edu/kamin/calamari/>.
- [21] Whitehouse, K. (2002). The Design of Calamari: An Ad-Hoc Localization System for Sensor Networks. Master' Thesis. University of California, Berkeley, USA.
- [22] Tollefson, W., Pepe, M., Myung, D., Gaynor, M., Welsh, M., Moulton, S. (2004). Irevive: A Pre-hospital Mobile Database for Emergency Medical services. International Journal of Healthcare Technology and Management, Summer version.
- [23] Welsh, M., Myung, D., Gaynor, M., Moulton, S. (2003). Resuscitation Monitoring with a Wireless Sensor Network. American Heart association, Resuscitation Science Symposium, Supplement to Circulation. Journal of the American Heart Association, October version.
- [24] Priya, S.P., Chowdary, V.A. and Dinesh, V.S. (2013).

- Wireless sensor networks to monitor Glucose level in blood. *International Journal of Advancements in Research & Technology*, 2(4): 322–326.
- [25] Chaudhary, D. and Waghmare, L.M. (2014). Design Challenges of Wireless Sensor Networks and Impact on Healthcare Applications. *International Journal of Latest Research in Science and Technology*, 3(2): 110–114.
- [26] Abidi, B., Jilbab, A., and Haziti, M.E.L. (2016). Wireless Sensor Networks in biomedical: wireless body area networks. In: *Proceedings of the Europe, Middle East and North Africa Conference on Technology and Security to support Learning*. EMENA-TSSL, SaidaOujda, Morocco, 3–5.
- [27] Wu, F., Xu, L., and Kumari, S. (2017). An Improved and Anonymous two factor authentication protocol for healthcare applications with wireless medical sensor networks. *MultimedSyst*, 23 (2), 195–205.
- [28] Kim D H, Lu N, Ma R, Kim Y S, Kim R H, Wang S, Wu J, Won S M, Tao H, Islam A, Yu K J, Kim T I, Chowdhury R, Ying M, Xu L, Li M, Chung H J, Keum H, McCormick M, Liu P, Zhang Y W, Omenetto F G, Huang Y, Coleman T, Rogers J A. (2011). Epidermal electronics. *Science*, 333(6044): 838–843. DOI:10.1126/science.1206157.
- [29] Gao W, Emaminejad S, Nyein H Y Y, Challa S, Chen K, Peck A, Fahad H M, Ota H, Shiraki H, Kiriya D, Lien D H, Brooks G A, Davis R W, Javey A. (2016). Fully integrated wearable sensor arrays for multiplexed *in situ* perspiration analysis. *Nature*, 529(7587): 509–514. DOI:10.1038/nature16521.
- [30] Wang X W, Gu Y, Xiong Z P, Cui Z, Zhang T. (2014). Electronic skin: silk-molded flexible, ultrasensitive, and highly stable electronic skin for monitoring human physiological signals. *Advanced Materials*, 26(9): 1309. DOI:10.1002/adma.201470054.
- [31] Sheridan C. (2014). Apple moves on health, drug developers shift into smart gear. *Nature Biotechnology*, 32(10): 965–966. DOI:10.1038/nbt1014-965a.
- [32] Zang Y P, Zhang F J, Di C A and Zhu D B. (2015). Advances of flexible pressure sensors toward artificial intelligence and health care applications. *Materials Horizons*, 2(2): 140–156. DOI:10.1039/c4mh00147h.
- [33] Zhao W X, Bhushan A, Santamaria A, Simon M and Davis C. (2008). Machine learning: A crucial tool for sensor design. *Algorithms*, 1(2): 130–152. DOI:10.3390/a1020130.
- [34] Vu C. and Kim J. (2018). Human motion recognition by textile sensors based on machine learning algorithms. *Sensors*, 18(9): 3109. DOI:10.3390/s18093109.
- [35] Labrique, A.B., Vasudevan, L., Kochi, E., Fabricant, R and Mehl, G. (2013). MHealth innovations as health system strengthening tools: 12 common applications and a visual framework. *Global Health: Sci Pract*, 1(2):160–71. DOI: 10.9745/ghsp-d-13-00031.
- [36] Pouschter, J. and Stewart, R. (2016). Smartphone ownership and Internet usage continues to climb in emerging economies but advanced economies still have higher rates of technology use. Pew Research Center. url: <http://www.pewglobal.org/2016/02/22/smartphone-ownership-and-internet-usage-continues-to-climb-in-emerging-economies/>, (accessed 2020, June 19).
- [37] WHO. (2020). Coronavirus disease (COVID-19). Situation Report -151 (June19, 2020). World Health Organization, 1-17. url: www.who.org (Accessed time: June 20, 2020 at 10:00 am national time).
- [38] Kothari, C.R. (Ed.). (2004). Research Methodology: Methods and Techniques (2nd ed.), New Age International Publishers, 95–111.
- [39] Sha, H., Zeng, H., Zhao, J., and Jin, H. (2019). Mangiferin ameliorates gestational diabetes mellitus-induced placental oxidative stress, inflammation and endoplasmic reticulum stress and improves fetal outcomes in mice. *European Journal of Pharmacology*, 859: 172522. DOI: 10.1016/j.ejphar.2019.172522.
- [40] Miah, M.R. (2018). Assessment of Environmental Policy Instruments along with Information Systems for Biodiversity Conservation in Bangladesh. PhD Thesis. IBEC, UNIMAS, Malaysia. 1–480. URL:<https://ir.unimas.my/id/eprint/24535/2/Assessment%20of%20Environmental%20Policy%20ftext.pdf>.
- [41] Kays, R., Tilak, S., Crofoot, M., Fountain, T., Obando, D., Ortega, A., Kuemmeth, F., Mandel, J., Swenson, G., Lambert, T., Hirsch, B. & Wikelski, M. (2011). Tracking Animal Location and Activity with an Automated Radio Telemetry System in a Tropical Rainforest. Published by Oxford University Press on behalf of the British Computer Society. *The Computer Journal*, 1(1): 1–18, DOI: 10.1093/comjnl/bxr072.
- [42] Waltham. (2017). Feline Body Mass Index (FBMI). Waltham FBMI Calculator. 1–2. URL: https://jscalc.z6_io/calc/hORP8x2bWjQU7qxq.
- [43] Harmening, W.M., Tuten, W.S., Roorda, A. and Sincich, L.C. (2014). Mapping the Perceptual Grain of the Human Retina. *The Journal of Neuroscience*, 34(16): 5667–5677.
- [44] Williams, D.R. (2011). Imaging single cells in the living retina. *Vision Res.*, 51, 1379 –1396.
- [45] WHO (World Health Organization). (2018). Emergency Care System Framework. Geneva: World Health Organization, 2018. URL: <https://www.who.int/publications-detail-redirect/whoemergency-care-system-framework> (accessed 17 June 2020).
- [46] McKay, D., Heisler, M., Mishori, R., Catton, H., Kloiber, O. (2020). Attacks against health-care personnel must stop, especially as the world fights COVID-19. *Lancet*, 395(10239): 1743-5.
- [47] Mitchell, M., Hedt-Gauthier, B.L., Msellemu, D., Nkaka, M. and Lesh, N. (2013). Using electronic technology to improve clinical care – results from a before-after cluster trial to evaluate assessment and classification of sick children according to Integrated Management of Childhood Illness (IMCI) protocol in Tanzania. *BMC Med Inform Decis Mak*, 13(1): 95. DOI:10.1186/1472-6947-13-9.
- [48] Zuniga, A.E., Win, K.T., Susilo, W. (2010). Biometrics for electronic health records. *J.Med Syst*, 34(5): 975–83. DOI:10.1007/s10916-009-9313-6.
- [49] Babamiri, B., Bahari, D., Salimi, A. (2019). Highly sensitive bio-affinity electrochemiluminescence sensors: Recent advances and future directions. *Biosensors and Bioelectronics*, 111530. DOI: <https://doi.org/10.1016/j.bios.2019.111530>.

- [50] Khan, R.I. and Pathan, A.S. (2018). The state-of-the-art wireless body area sensor networks: A survey. *International Journal of Distributed Sensor Networks*, 14(4): 1–16. DOI: 10.1177/1550147718768994.
- [51] Glasgow, R.E. (1995). A Practical Model of Diabetes Management and Education. *DiabetesCare*, 18(1): 117–126.
- [52] Bashshur, R.L., Howell, J.D., Krupinski, E.A., Harms, K.M., Bashshur, N., Doarn, C.R. (2016). The empirical foundations of telemedicine interventions in primary care. *Telemedicine E-Health*, 22(5):342–75. DOI:10.1089/tmj.2016.0045.
- [53] Mitchell, M. and Kan, L. (2019). Digital Technology and the future of Health Systems. *Health Systems & Reform*, 5(2), 11-120, DOI: 10.1080/23288604.2019.1583040.
- [54] WHO. (2019). WHO developing guidelines for recommendations on digital health interventions for RMNCAH and health systems strengthening. url: <https://who.int/reproductivehealth/topics/mhealth/digital-health-interventions/en/>? [accessed 2019 Jan 19].
- [55] Dias, D and Cunha, J.P. (2018). Wearable health devices — vital sign monitoring, systems and technologies. *Sensors*, 18(8): 2414. DOI:10.3390/s18082414.
- [56] Wyber, R., Vaillancourt, S., Perry, W., Mannava, P., Folaranmi, T., Celi, L.A. (2015). Big data in global health: improving health in lowand middle-income countries. WHO. url: <https://www.who.int/bulletin/volumes/93/3/14-139022/en>. [accessed 2019 Jan 19].
- [57] Miah, M.R. (2020). Corona virus wide-reaching through sensor technology, Chapter 18. Cyber Dajjal: Obstacle to good health. Paprhi Prakash, Rangmahal Tower, Bandar Bazar, Sylhet, Bangladesh, pp. 115-121. ISBN: 978-984-586-041-3. URL: <https://rokomari.com/book/202988/cyber-dazzal---sushaysther-ontoray> (Bengali language).
- [58] Ross MK, Wei W, Ohno-Machado L. (2014) Big data and the electronic health record. *Yearb Med Inform*, 9:97–104. doi:10.15265/IY-2014-0003.
- [59] WHO. (2016). Global observatory for eHealth. Geneva (Switzerland): Malawi. World Health Organization. url: <https://www.who.int/goe/policies/countries/mwi/en> [accessed 2019 Jan 19].
- [60] Miah, M.R. (2021). Global Cyber War and Peaceful World. Lap-publishing, Germany, 115-121. ISBN: 978-984-586-055-0 (Manuscript is ongoing submission).
- [61] Forouzanfar M.H., Alexander, L., Anderson, H.R., Bachman, V.F., Biryukov, S., Brauer, M., Burnett, R., Casey, D., Coates, M.M., Cohen, A., Delwiche, K., Estep, K., Frostad, J.J., Astha, K.C., Kyu, H.H., Moradi-Lakeh, M., Ng, M.... et al., (2015). Global, regional, and national comparative risk assessment of 79 behavioural, environmental and occupational, and metabolic risks or clusters of risks in 188 countries, 1990-2013: a systematic analysis for the Global Burden of Disease Study 2013. *Lancet*, 386(10010): 2287-323. DOI: 10.1016/S0140-6736(15)00128-2.
- [62] Bram, J.T., Warwick-Clark, B., Obeysekhar, E. and Mehta, K. (2015). Utilization and monetization of healthcare data in developing countries. *Big Data*, 3(2):59–66. DOI: 10.1089/big.2014.0053.
- [63] Baker, W.E. (2009). Evaluation of physician competency and clinical performance in emergency medicine. *Emerg Med Clin North Am*, 27(4): 615–26. DOI: 10.1016/j.emc.2009.07.010.
- [64] Mowafi, H., Sakr, H., Ravaghi, H., Elmahal, O., Slama, S., Samhouri, D. and Relan, P. (2020). Leveraging the COVID-19 response to improve emergency care systems in the Eastern Mediterranean Region. *East Mediterr Health J.*, 26(6): 626-629. <https://doi.org/10.26719/2020.26.6.626>.
- [65] WHO (World Health Organization). (2020a). Media Briefing. WHO Director-General's opening remarks at the media briefing on COVID-19. Geneva: World Health Organization, 11 March 2020. URL: <https://www.who.int/dg/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020> (accessed 26 March 2020).
- [66] Butun I., Morgera S. and Sankar R. (2014). A survey of intrusion detection systems in wireless sensor networks. *IEEE Commun. Surv. Tutor*, 16: 266–282. DOI: 10.1109/SURV.2013.050113.00191.
- [67] Claeson, M. (2020). An effective national response to COVID-19: what not to learn from Sweden. *BMJ Blogs*, 1-2. URL: https://blogs.bmj.com/bmjgh/2020/11/01/covid-19-what-not-to-learn-from-sweden/?utm_campaign=shareaholic&utm_medium=twitter&utm_source=socialnetwork (Accessed time on January 03, 2021 at 10:00 am).
- [68] Habib, H. (2020). Coronavirus: Has Sweden's controversial covid-19 strategy been successful? *BMJ*, 369:m2376. DOI: <http://dx.doi.org/10.1136/bmj.m2376>.
- [69] Irwin, R.E. (2020). Misinformation and de-contextualization: international media reporting on Sweden and COVID-19. *Global Health*, 16, 62, 1-12. DOI: <https://doi.org/10.1186/s12992-020-00588-x>.
- [70] WHO. (2020c). WHO works with the Government of the United Kingdom to tackle misinformation. World Health Organization (WHO). URL: <https://www.who.int/campaigns/connecting-the-world-to-combat-coronavirus/how-to-report-misinformation-online> (Accessed time on January 11, 2021 at 12:00pm.).
- [71] WHO. (2020d.). Managing the COVID-19 infodemic: Promoting healthy behaviours and mitigating the harm from misinformation and disinformation. Joint statement by WHO, UN, UNICEF, UNDP, UNESCO, UNAIDS, ITU, UN Global Pulse, and IFRC on September 23, 2020. URL: <https://www.who.int/news-room/23-09-2020-managing-the-covid-19-infodemic-promoting-healthy-behaviours-and-mitigating-the-harm-from-misinformation-and-disinformation> (Accessed time on January 9, 2021 at 10:00am).
- [72] UNICEF. (2020, November 12). COVID-19, the Infodemic, & Fake News. What the Experts Say: Coronavirus & Children. URL: <https://www.unicef-irc.org/events/covid-19-the-infodemic-and-fake-news.html> (Accessed time on January 14, 2020 at 09:00 am).
- [73] Galvão, J. (2020, October 5). COVID-19: the deadly threat of misinformation. Correspondence. *Lancet Infectious Diseases*, 20: 875. DOI: [https://doi.org/10.1016/S1473-3099\(20\)30721-0](https://doi.org/10.1016/S1473-3099(20)30721-0). URL: <https://www.thelancet.com/action/showPdf?pii=S1473-3099%2820%2930721-0>.
- [74] Roozenbeek, J., Schneider, C.R., Dryhurst, S., Kerr, J., Freeman, A.L.J., Recchia, G., vander Bles, A.M., van der Linden, S. (2020). Susceptibility to misinformation about

- COVID-19 around the world. *Royal Society Open Science*, 7: 201199, 1-15. DOI: <http://dx.doi.org/10.1098/rsos.201199>.

[75] Dhaka Tribune. (2020). Covid-19 misinformation on social media causes hundreds of deaths. Published at 10:43 am August 13th, 2020. URL: <https://www.dhakatribune.com/health/coronavirus/2020/08/13/covid-19-misinformation-kills-hundreds-from-jan-to-april> (Accessed time on January 14, 2021 at 10:00 am).

[76] Giles Keir. (2020, April 9). Beware Russian and Chinese Positioning for after the pandemic. Chatham house. URL: https://www.chathamhouse.org/2020/04/beware-russian-and-chinese-positioning-after-pandemic?gclid=EA1aIQobChMInIPlhsqa7gIVNdWWCh1xeA3uEAMYASAAEgKkCvD_BwE (Accessed time on January 10, 2021 at 3:00 pm).

[77] Cinelli, M., Quattrociocchi, W., Galeazzi, A., Valensise, C.M., Brugnoli, E., Schmidt, A.L., Zola, P., Zollo, F. & Scala, A. (2020). The COVID-19 social media infodemic. *Scientific Report*, 10, 16598. DOI: <https://doi.org/10.1038/s41598-020-73510-5>.

[78] UN News. (2020,29 September). COVID-19: Legitimate concerns must be heard, and fears addressed over misinformation. Global Perspectives Human Stories. Health. UN General Assembly. UN Under-Secretary General for Global Communications. URL: <https://news.un.org/en/story/2020/09/1074112> (Accessed time on January 14, 2021 at 11:00 am).

[79] Islam, M.S., Sarkar, T., Khan, S.H., Kamal, A.H.M., Hasan, S.M.M., Kabir, A., Yeasmin, D., Islam, M.A., Chowdhury, K.I.A.C., Anwar, K.S., Chughtai, A.A., Seale, H. (2020). COVID-19-related infodemic and its impact on public health: a global social media analysis. *The American Journal of Tropical Medicine and Hygiene*, 1621-1629. doi:10.4269/ajtmh.20-0812.

[80] Saheeh International. (2021). Al-Quran. English Translation. Quran.com. Surah Al Imran, Verse 139. URL: <https://quran.com/3/139?translations=20,85,101> (Accessed time on January 17, 2021 at 12:00 pm).

[81] COVAX. (2020). COVAX: COVID-19 Tools Accelerator. URL: <https://www.unicef.org/coronavirus/covax> (Accessed time on January 16, 2021 at 9:00 am).

[82] UNICEF. (2021, January 8). What you need to know about a COVID-19 vaccine. URL: <https://www.unicef.org/coronavirus/what-you-need-to-know-covid-vaccine> (Accessed time on January 16, 2021 at 12:00 pm).

[83] Milken Institute. (2021, January 14). COVID-19 Treatment AND Vaccine Tracker. URL: <https://covid-19tracker.milkeninstitute.org/> (Accessed time on January 16, 2021 at 11:00 am).

[84] Sujan, M.A. (2020, Dec10). Covid-19 Vaccine: The poor may face disparity. The Daily Star, Dhaka, Bangladesh. URL: <https://www.thedailystar.net/frontpage/news/covid-19-vaccine-the-poor-may-face-disparity-here-too-2008725> (Accessed time on January 16, 2021 at 10:00 am).

[85] IANS. (2021, January 15). Global COVID-19 deaths near 2 million: Johns Hopkins. URL: <https://en.prothomalo.com/international/global-covid-19-deaths-near-2-million-johns-hopkins> (Accessed time on January 16, 2021 at 12:00 pm).

[86] Shishir Morol. (2021, January 16). Interest in vaccines, fear of untruth-half-truth-misinformation. URL: <https://www.prothomalo.com/bangladesh/coronavirus/টিকায়-আগ্রহ-ভয়-অসত্য-অর্ধসত্যভুল-তথ্য> (Accessed time on January 16, 2021 at 8:00 am).

[87] Hilali and Khan (2021). The Noble Quran. The Surah Ar-Rum (The Romans), Verse-41. URL: <http://en.noblequran.org/quran/surah-ar-rum/ayat-41/> (Accessed time on January 16, 2021 at 9am).

[88] Chang, T.H., Chou, C.C., Chang, L.Y. (2020). Effect of obesity and body mass index on coronavirus disease 2019 severity: A systematic review and meta - analysis. *Obesity Reviews*. DOI: <https://doi.org/10.1111/obr.13089>.

[89] BBC News. (2020). Coronavirus: Obesity 'increases risks from Covid-19'. Coronavirus pandemic. URL: <https://www.bbc.com/news/health-53921141> (Accessed time on January 16, 2021 at 1:00 pm).

[90] Wadman, M. (2020). Why COVID-19 is more deadly in people with obesity—even if they're young. Science. URL: <https://www.sciencemag.org/news/2020/09/why-covid-19-more-deadly-people-obesity-even-if-theyre-young>.

[91] Mahase, E. (2020). Covid-19: Why are age and obesity risk factors for serious disease? News Briefing. BMJ, 371. DOI: <https://doi.org/10.1136/bmj.m4130> (Published 26 October 2020).

[92] CDC. (2021). Facts about Down Syndrome. Centers for Disease Control, USA. URL: <https://www.cdc.gov/ncbddd/birthdefects/downsyndrome.html> (accessed time on January 15, 2021 at 10:00 am).

[93] CDC. (2021a). People with Certain Medical Conditions. Centers for Disease Control, USA. URL: <https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/people-with-medical-conditions.html#downsyndrome> (Accessed time on January 16, 2021 at 8:00 am).

[94] Al-Salameh, A., Lanoix, J.P., Bennis, Y., Andrejak, C., Brochot, E., Deschasse, G., Dupont, H., Goeb, V., Jaureguy, M., Lion, S., Maizel, J., Moyet, J., Vaysse, B., Desailloud, R., Ganry, O., Schmit, J.L., Lalau, J. D. (2020). The association between body mass index class and coronavirus disease 2019 outcomes. *International Journal of Obesity*, 1-6. DOI: <https://doi.org/10.1038/s41366-020-00721-1>.

[95] Shin, M.S., Jeon, H.S., Ju, Y.W., Lee, B.J. and Jeong, S.P. (2015). Constructing RBAC Based Security Model in Healthcare Service Platform. *The Scientific World Journal*, Volume 2015, Article ID 937914, 1-13, DOI: <http://dx.doi.org/10.1155/2015/937914>.

[96] Ravi, S.J., Meyer, D., Cameron, E., Nalabandian, M., Pervaiz, B. and Nuzzo, J.B. (2019). Establishing a theoretical foundation for measuring global health security: a scoping review. *BMC Public Health*, 19: 954, 1-9. URL: <https://doi.org/10.1186/s12889-019-7216-0>.

[97] WHO. (2018). Health security: is the world better prepared? Ten years in public health 2007–2017. World Health Organization. URL: <https://www.who.int/publications/10-year-review/chapter-health-security.pdf?ua=1>.

[98] Aliti, A., & Sevrali, K. (2019). A security model for Wireless Sensor Networks. 2019 42nd International Convention on Information and Communication Technology, Electronics and Microelectronics (MIPRO). doi:10.23919/mipro.2019.8756647.

- [99] Stoeva, P. (2020). Dimensions of Health Security—A Conceptual Analysis. *Global Challenges*, 4, 1700003, 1-12. DOI: <https://doi.org/10.1002/gch2.201700003>.
- [100] NAMS. (2016). The Neglected Dimension of Global Security: A Framework to Counter Infectious Disease Crises. Commission on a Global Health Risk Framework for the Future, National Academy of Medicine, Secretariat (NAMS). Washington, USA, National Academies Press, 1-144. URL: <https://www.ncbi.nlm.nih.gov/books/NBK368/>.
- [101] Khaloufi, H., Mehdi, K.A., Beni-hssane, A. and Saadi, M. (2018). Security model for Big Healthcare Data Lifecycle. *Procedia Computer Science*, 141, 294–301. DOI: 10.1016/j.procs.2018.10.199.
- [102] French A.J. (2020) Simulation and Modeling Applications in Global Health Security. In: Masys A., Izurieta R., Reina Ortiz M. (eds) Global Health Security. Advanced Sciences and Technologies for Security Applications. Springer, Cham. https://doi.org/10.1007/978-3-030-23491-1_13.
- [103] Ravi, S.J., Warmbrod, K.L., Mullen, L., Meyer, D., Cameron, E., Bell, J., Bapat, P., Paterra, M., Machalaba, C., Nath, I., Gostin, L.O., James, W., George, D., Nikkari, S., Gozzer, E., Tomori, O., Makumbi, I. and Nuzzo J.B. (2020). The value proposition of the Global Health Security Index. *BMJ Global Health*, 5: e003648, 1-8. DOI:10.1136/bmjgh-2020-003648.
- [104] PWC (PricewaterhouseCoopers). (2020). A Resilient Tomorrow: COVID-19 Recovery and Transformation. PricewaterhouseCoopers International Limited (PwCIL), PWC Networks, Singapore. URL: <https://www.pwc.com/sg/en/publications/a-resilient-tomorrow-covid-19-response-an-d-transformation.html> (Accessed time on January 31, 2021 at 2:00 pm).
- [105] Chesbrough, H. (2020). To recover faster from Covid-19, open up: Managerial implications from an open innovation perspective. *Industrial Marketing Management*, 88, 410-413. DOI: <https://doi.org/10.1016/j.indmarman.2020.04.010>.
- [106] OCHA Services. (2020). Transformational potential of COVID-19 recovery in Asia-Pacific. Relief web. UN Office for Disaster Risk Reduction (UNDRR). URL: <https://reliefweb.int/report/world/transformational-potential-covid-19-recovery-asia-pacific> (Accessed on January 31, 2021 at 11:00 am).
- [107] United Nations. (2020). UN Research Roadmap for the COVID-19 Recovery: Leveraging the Power of Science for a More Equitable, Resilient and Sustainable Future. Canadian Institutes of Health and UN Office for Partnerships. Research for COVID-19 Recovery, United Nations, New York, USA. 1–128. URL: <https://www.un.org/en/pdfs/UNCOVID19ResearchRoadmap.pdf> (Accessed time on January 31, 2021 at 12:00 pm).
- [108] SIAM (2021). Report on Future Research Directions for the National Science Foundation in the Era of COVID-19. The Society for Industrial and Applied Mathematics (SIAM), Philadelphia, US. 1-6. URL: <https://www.siam.org/Portals/0/reports/Report%20on%20Future%20Research%20Directions%20for%20NSF.pdf?ver=2020-12-10-144744-750> (Accessed on January 31, 2021 at 1:00pm).
- [109] Garau, C. and Quan, V. (2020, 24 August). The COVID-19 Recovery and Resilience Initiative. Building an effective COVID-19 response: A guide for future research. Abdul Latif Jameel Poverty Action Lab. URL: <https://www.povertyactionlab.org/blog/8-24-20/building-effective-covid-19-response-guide-future-research> (Accessed time on January 31, 2021 at 2:00pm).
- [110] WHO. (2020). Doing What Matters in Times of Stress: An Illustrated Guide. WHO Team, Mental Health and Substance Use, World Health Organization (WHO), 1-132. ISBN: 978-92-4-000391-0. URL: https://www.who.int/publications/i/item/9789240003927?gclid=CjwKCAiApNSABhAIEiwANuR9YBk-LUsfE8-dnAj7OODWH1_FK7JqXE4FxXINzIasXLH2BCLIz0-axoCnGYQAvD_BwE (Accessed time on January 31, 2021 at 2:00pm).
- [111] Miah, M.R., Rahman, A.A.M.S., Khan, M.S., Hannan, M.A., Hossain, M.S., Shahriar, C.S., Hossain, S.A.M.I., Talukdar, M.T.H., Samdany, A.A., Alam, M.S., Uddin, M.B., Sayok, A.K., and Chowdhury, S.H. (2021). Effect of Corona Virus Worldwide through Misusing of Wireless Sensor Networks. *International Journal of Bioinformatics Research*, 11(1), 1-20.
- [112] Md Rahimullah Miah, Md. Shahriar Khan, AAM Shazzadur Rahman, Alamgir Adil Samdany, Mohammad Abdul Hannan, Shahriar Hussain Chowdhury, Alexander Kiew Sayok. (2020). Impact of Sensor Networks towards Individuals Augmenting Causes of Diabetes. *International Journal of Diabetes Research*, 9(2), 1-10. DOI: 10.5923/j.diabetes.20200902.