

Relationship of 5G Communication Technologies and Covid-19: Discourse of Mental Perception of Supporters, Opposers and Reality

Ghulam Safdar¹

¹Assistant Professor, Department of Arts & Media, Foundation University Islamabad
Correspondence: safdarsting@gmail.com¹

ABSTRACT

Since the last January 2020, a rumor sparks out that 5G technologies cause coronavirus. Soon this rumor spread like wildfire and soon this idea formed conspiracy theory and till the end of April 2020, there were reported more than 30 cases of burning 5G towers in Europe. Keeping in mind the idea of conspiracy theory, researcher tried to discourse the existing literatures on the issue from January 2020 to April 2020. The researcher collected data from various platforms who gave representation to both groups i.e., supporters of the idea “conspiracy theory” and opposers of idea “World Health Organization (WHO), International Commission on Non-Ionizing Radiation Protection (ICNIRP) etc.” Data was analyzed and wording and themes of discussions concluded into real facts. From the discourse of various literatures and on the basis of facts and figures, it is concluded that there is no relationship among 5G technologies and coronavirus. Supporter of the group “conspiracy theory” is just based on false assumptions and fake allegations that have no facts. Reality is that coronavirus is physically transmitted by droplets rather than radio waves of 5G technologies.

Keywords: 5G technologies, Covid-19, Supporters, Opposers, Reality.

Introduction

5G Technologies

Fifth generation technology is successor technology of 1G, 2G, 3G and 4G. This technology enabled a latest kind of network designed to connect everything together including objects, machines and devices virtually with several Gbps peak data speed with more reliability and massive network capacity. 5G provides hub of connectivity of variety of devices at one platform (Qualcomm 2020).

No one company owned 5G, but there are numerous companies contributing in mobile industry causative to bringing 5G in the world. Qualcomm played vital role in inventing many fundamental technologies that drive the industry forward and make up 5G (Looper 2020, Mitra & Agrawal 2015, Shabir et al. 2015).

5G is based on Orthogonal Frequency Division Multiplexing (OFDM), method of modulating digital signals across various different channels to reduce interface and uses wider bandwidth to carry large amount of data (Kim et al. 2015). High speed 5G has impact on every industry like remote health care, precision agriculture, safer transportation and digitized logistics and many more. 5G technologies come under the sponsorship of Third Generation Partnership project (3GPP) (Pirinen 2014, Kachhavy & Thakare 2014).

Article History

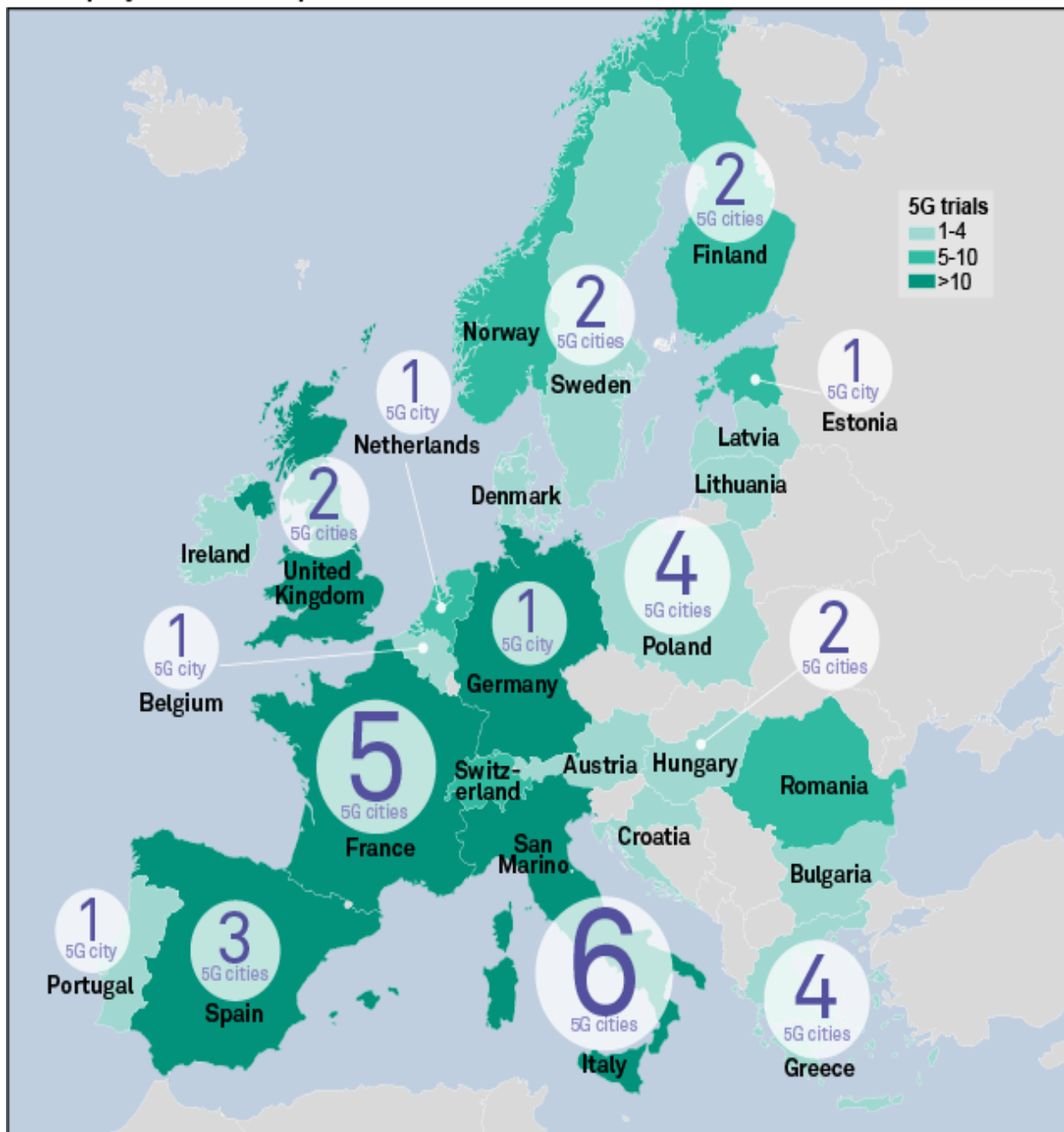
Received:
July 21, 2020

Revised:
November 28, 2020

Accepted:
December 18, 2020

Published:
December 30, 2020

5G deployment in Europe



Data compiled Jan. 29, 2019.

5G trials involve European mobile operators working with equipment manufacturers and others to validate 5G's capabilities.

5G cities indicate those areas where 5G service has been enabled.

Map credit: Elizabeth Thomas

Source: IDATE DigiWorld

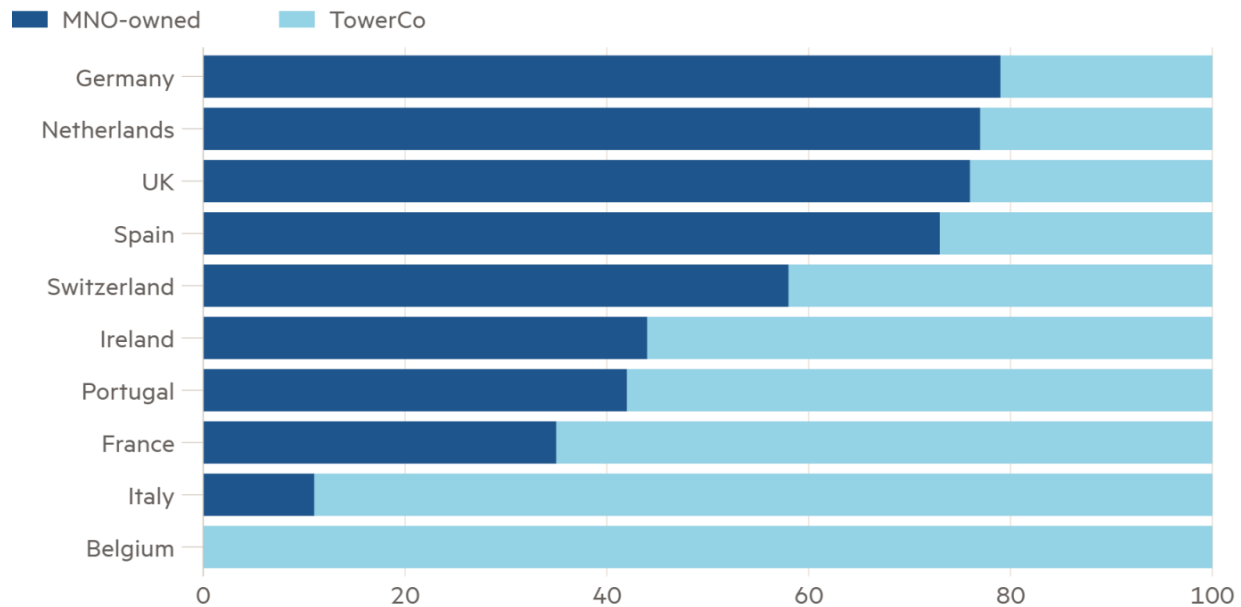
S&P Global
Market Intelligence

Figure 1: 5G deployment in Europe.

Source: <https://www.spglobal.com/marketintelligence/en/news-insights/trending/ZiQiFaN9Tnrf7Dwf6pQmTw2>

Mobile tower ownership in Europe

% share



Source: Barclays
© FT

Figure 2: Mobile Tower Ownership in Europe.

Source: available at <https://www.ft.com/content/ffe9c3d8-f28c-4508-8c24-f18a7e44dd00>

Cellnex

Share price (€)



Source: Refinitiv
© FT

Figure 3: 5G share price.

Source: available at <https://www.ft.com/content/ffe9c3d8-f28c-4508-8c24-f18a7e44dd00>

Covid-19

The virus reported in Wuhan the city of China at end of 2019 (Wang et al. 2020, Ahmed et al. 2020, Shuja et al. 2020). This virus caused disease named Covid-19 transmittable through touching, even though air (WHO 2020). Fatality rate due to Covid-19 infection found 2.3% greater than that of influenza (Yang et al. 2020, Boury 2020). Up to June 6, 2020, 6,879,502 active cases, 398,737 deaths and 3,371,219 recover cases were reported (WHO June 6, 2020).

Now this disease has not only become the major issue for the China but also all the states of the universe (Phelan et al. 2020). Covid-19 outbreak had constituted public health emergency of international concern (Mahase 2020). Findings of epidemiologic research revealed that Covid-19 outbreak started transmission to animal-to-human sustained human-to-human onward (Del Rio & Malani 2020, Chan et al. 2020). It is believed that interpersonal transmission occurs via respiratory droplets and through contact (The Chinese Preventive Medicine Association 2020). This virus has created fear among the public that has long lasting effects (Safdar 2020; Khan et al., 2021).

Material & Methods

Current research study deals the concept of 5G technologies and coronavirus. It was noticed that in the month of January 2020, it was claimed that 5G cellular technologies are caused of spread of coronavirus in the world. The rumor spread like wildfire and constituted conspiracy theory that resulted 5G towers burn in Europe. Various talks conducted on various platforms and both supporters and opposers of the idea gave their comments about reality.

So, there was need to dig out reality to eliminate misperception among public. Hence to know the reality, researcher collected existing literature about 5G technologies and conspiracy theory from January (the idea spark) to May 2020. From the collected data, researcher divided data into three categories supporters' perception (people who are in the favor of conspiracy theory), opposers' (people who are against the idea of conspiracy theory) and combination of these two ideas to make reality.

The study discourse by nature in which idea of conspiracy theory, world health organizations' opinion and data and facts of various technological and health organization was interpreted to conclude results.



Figure 4: *5G mast anywhere in Europe*

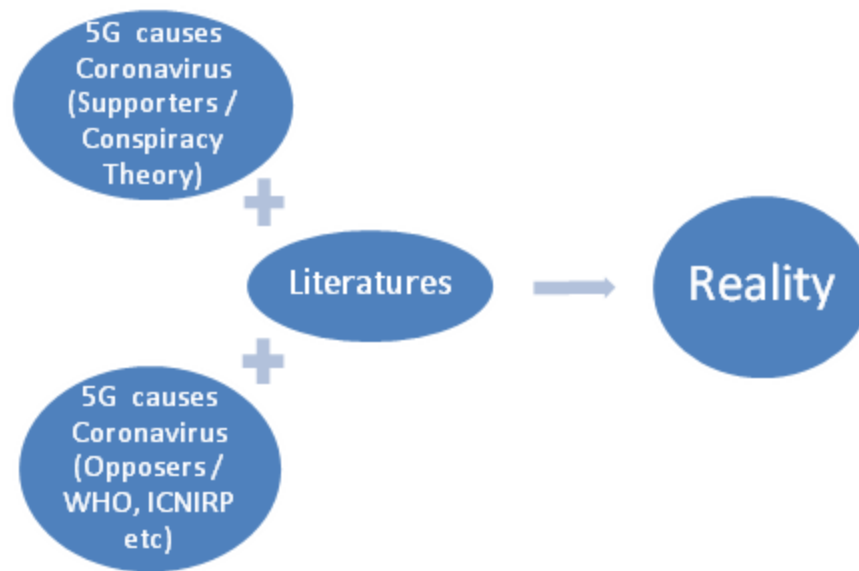


Figure 5: *Proposed nature of the study*

Analysis and Results

Supporters' Perception (Conspiracy Theory)

The supporters of conspiracy about 5G causes coronavirus goes first linked to John Gregory on French website called “The rabid sheep”. On January 2020 news floated that 5G technology causes Covid-19 pointing report about installation of 5G towers in Wuhan before the outbreak. This concept resulted making similar claims about setting cell-phone towers on fire in Europe (Heilweil 2020).

Initial theory about relationship of coronavirus and 5G technologies have now been spread everywhere. Supporter of this theory claiming that 5G cause radiation that triggers the virus. Others claiming that coronavirus is actually cover-up for the installation of 5G towers. The idea also has found in the supporters that 5G and Covid-19 is a part of broader effort to “depopulate earth” (Uthman et al. 2020).

Certain people fall for these theories and act out, they stand to harm themselves and others. By the early April 2020, supporters of this idea were setting cell towers on fire in Europe and starting to intersect with other conspiracy raising fears that the towers could pose a threat to public health. Some seem to think that both 5G and coronavirus are new; hence they must be connected somehow (Agency 2020).

Conspiracy about wireless technologies has been around for decades and debates about cell phone led to brain cancer, mind control etc. gained newfound relevance with rollout 5G technologies. Others suggest that cellular technologies causing electromagnetic sensitivity caused headaches and harming the immune system (Schraer & Lawrie 2020).

Opposers' Perception

Opposers' perception about relationship among 5G technologies and coronavirus is opposite. They deny the perception of supporters and seem it just rumor not based on any solid proof. There is no connection between 5G and coronavirus, said WHO (WHO 2020). In regard allegation about radio waves effects on human health, it is found that radio devices especially cell-phones relies on radio waves are low end of electromagnetic spectrum and produces non-ionizing radiation which means they have not affected on

human body nor damage DNA in cell tissue neither causes cancer (Shereen et al 2020, Simko & Mattson 2019).

Opposers of conspiracy theory, further get support from new guidelines for 5G technologies of International Commission on Non-Ionizing Radiation Protection (ICNIRP) that radiation frequency of 5G technologies will be safe. It means that 5G frequency has not such harmful radiation that causes any damage in human body (ICNIRP 2020).

Furthermore, there is no evidence that may suggest that Wuhan was the very first city of China that start building out 5G, but rather multiple reports found by full fact said it was among multiple cities selected to pilot the technology. The other facts proved that coronavirus outbreak has had a profound impact on countries with no 5G coverage such as Iran. Opposers of 5G technologies cause coronavirus rejected the claim that conspiracy theory is just baseless and not based on any scientific research (Sowa et al. 2020).

Reality

According to WHO and ICNIRP, 5G technologies are not harmful to health and it does not cause any disease. In general, comparison of 5G rays with other rays like x-rays, ultraviolet rays and gamma rays and claiming 5G cause negative effects on the immune system is false just because other rays are much more powerful than 5G rays (Hamilton 2020, Simko & Mattsson 2019).

Facts show that conspiracy theory was not based on reality and rejected by experts (Lewis 2020). 5G infrastructure is very important for wider population and is not danger for public health, said Stephen Powis, The National Health Service Director (Brewis 2020). Origin of the idea, 5G causes coronavirus spark out in January 2020 named “conspiracy theory” when Belgian doctor linked health concerns about 5G to the emergence of coronavirus (Shanapinda 2020). It resulted in April 2-6, 2020, near about 20 mobiles phone towers were vandalized in United Kingdom alone (Waterson & Hern 2020).

The idea of 5G causing coronavirus is fake and no more valid, strongly condemned ICNIRP (ICNIRP 2020). People attracted to conspiracy theory when important psychological needs are unsatisfied. People believe conspiracy theory under the condition of uncertainty but now the targeted idea of conspiracy theory reducing it impacts (Association of Psychological Science 2020, Douglas et al. 2019, Douglas et al. 2017). Supporters of conspiracy theory seems realizing that there is no more reality among 5G and coronavirus (Ahmed et al. 2020). It should not be forgotten that coronavirus is physically transmitted by droplets rather than radio waves of 5G technologies (Simko & Mattsson 2019).

Conclusion

From the discourse of various literatures, it is concluded that there is no relationship among 5G technologies and coronavirus. Supporters of this concept caused conspiracy theory are just based on assumptions and fake allegations without any solid proof. WHO and ICNIRP also asked this idea of conspiracy theory false and claimed that radio waves have no such power to produce virus around the environment. It is merely just because 5G technologies and coronavirus emit on the scene at the same time so some people connected these two phenomena with each other.

Implications

There is need for the governments of the states around the globe that they should make some laws and ensure awareness among public regarding any disease or issue. WHO, ICNIRP and other organizations should play their role to take in confidence public and such fake allegations should tackle strictly.

Acknowledgements

None

Conflict of Interest

Author has no conflict of interest.

Funding Source

Author received no funding to conduct this study.

References

- Agency, A. (2020). Is there any connection between 5G, Covid-19?. [Online] Retrieved on 18-05-2020 from <https://tribune.com.pk/story/2208176/8-connection-5g-covid-19/>
- Ahmad, T., Khan, M., Khan, F.M., & Hui, J. (2020). Are we ready for the new fatal Coronavirus: scenario of Pakistan? *Human Vaccines & Immunotherapeutics*. 1-3
- Ahmed, W., Alaball, J.V., Downing, J., Segui, F.L. (2020). COVID-19 and the 5G Conspiracy Theory: Social Network Analysis of Twitter Data. *Journal of Medical Internet Research*, 22(5), e19458
- Association of Psychological Science: Psychological Science and COVID-19 (2020). Conspiracy Theories 2020. [Online] Retrieved on 6-6-2020 from https://www.newswise.com/coronavirus/psychological-science-and-covid-19-conspiracy-theories/?article_id=732369
- Bouey, J. (2020). From SARS to 2019-Coronavirus (nCoV): *USChina Collaborations on Pandemic Response*.
- Brewis, H., Evening Standard (2020). Nightingale hospital phone mast attacked as 5G conspiracy theory rages 2020 Apr 14. [Online] Retrieved on 19-05-2020 from URL: <https://www.standard.co.uk/news/uk/nhs-nightingale-phone-mast-arson-attack-5g-conspiracy-a4414351.html>
- Chan, J.F., Yuanm S., Kok, K.H., To, K.K., Chu, H., Yang, J., Xing, F., Liu, J., Yip, C.C., Poon, R.W. (2020). A familial cluster of pneumonia associated with the 2019 novel coronavirus indicating person-to-person transmission: a study of a family cluster. *Lancet*, 395(10223), 514–523.
- Del-Rio, C., Malani, P.N. (2020). 2019 novel coronavirus-important information for clinicians. *JAMA* [epub ahead of print 5 Feb 2020] in press. doi:10.1001/jama.2020.1490.
- Douglas, K.M., Sutton, R.M., & Cichocka, A. (2017). The psychology of conspiracy theories. *Current Directions in Psychological Science*, 26, 538-542. <https://doi.org/10.1177%2F0963721417718261>
- Douglas, K.M., Uscinski, J., Sutton, R.M., Cichocka, A., Nefes, T., Ang, J., & Deravi, F. (2019). Understanding conspiracy theories. *Advances in Political Psychology*, 40 (S1):3-35. <https://doi.org/10.1111/pops.12568>
- Hamilton, I.A. (2020). Here's what we know about the bizarre coronavirus 5G conspiracy theory that is leading people to set cellphone masts on fire 2020. [Online] Retrieved on 18-05-2020 from <https://www.businessinsider.com/coronavirus-conspiracy-5g-masts-fire-2020-4#5g-conspiracy-theories-have-been-around-since-at-least-2019-1>

- Heilweil, R. (2020). How the 5G coronavirus conspiracy theory went from fringe to mainstream 2020. [Online] Retrieved on 18-05-2020 from <https://www.vox.com/recode/2020/4/24/21231085/coronavirus-5g-conspiracy-theory-covid-facebook-youtube>
- ICNIRP (2020). Covid-19 and RF EMF April 2020. [Online] Retrieved on 19-05-2020 from <https://www.icnirp.org/en/activities/news/news-article/covid-19.html>
- Kachhavay, M., & Thakare, A. (2014). 5G Technology-Evolution and Revolution. *International Journal of Computer Science and Mobile Computing*, 3(3), 1080-1087.
- Khan, S., Safdar, G., Ahmad, T. (2021). The Role of Radio Clinic during Covid-19 Pandemic: A Case Study of Swat. *Research Journal of Social Sciences & Economics Review*, 2(1), 189-194.
- Kim, T., Jang, H.S., Sung, D.K. (2015). A novel root-index based prioritized random access scheme for 5G cellular networks. *ICT Express*, 1, 97-101.
- Lewis, K., Full-Fact (2020). 5G is not accelerating the spread of the new coronavirus 2020 Mar 31. [Online] Retrieved on 19-05-2020 from URL: <https://fullfact.org/health/5G-not-accelerating-coronavirus/>
- Looper, C.D. (2020). What is 5G? The next-generation network explained 2020. [Online] Retrieved on 18-05-2020 from <https://www.digitaltrends.com/mobile/what-is-5g/>
- Mahase, E. (2020). China coronavirus: WHO declares international emergency as death toll exceeds 200. *BMJ*, 368, m408.
- Mitra, R.N., & Agrawal, D.P. (2015). 5G mobile technology: A survey. *ICT Express*, 1, 132-137.
- Phelan, A.L., Katz, R., Gostin, L.O. (2020) The novel coronavirus originating in Wuhan, China: challenges for global health governance [epub ahead of print 30 Jan 2020] in press. *JAMA*. doi:10.1001/jama.2020.1097.
- Pirinen, P. (2014). A Brief Overview of 5G Research Activities. *1st International Conference on 5G for Ubiquitous Connectivity (5GU)*, At Levi, Finland.
- Qualcomm (2020). Everything you need to know about 5G 2020. [Online] Retrieved on 18-05-2020 from <https://www.qualcomm.com/invention/5g/what-is-5g>
- Safdar, G. (2021). Covid-19, Media Dependency and Fear of Death: Analysis of Pre, During and Post Infection among Affected People. *Psychiatria Danubina*, In press.
- Schraer, R. & Lawrie, E. (2020). Coronavirus: Scientists brand 5G claims 'complete rubbish 2020'. [Online] Retrieved on 18-05-2020 from <https://www.bbc.com/news/52168096>
- Shabir, G., Safdar, G., Jamil, T., Bano, S. (2015). Mass Media, Communication and Globalization with the perspective of 21st century. *New Media and Mass Communication*, 34, 11-15.
- Shanapinda, S. (2020). The Conversation. No, 5G radiation doesn't cause or spread the coronavirus. Saying it does is destructive 2020 Apr 07. [Online] Retrieved on 19-05-2020 from URL: <https://tinyurl.com/uppng7w>
- Shereen, M.A., Khan, S., Kazmi, A., Bashir, N. & Siddique, R. (2020). Covid-19 infection: Origin, transmission and characteristics of human coronavirus. *Advanced Research*, 24, 91-98.
- Shuja, K.H., Aqeel, M., Jaffar, A., Ahmed, A. (2020). COVID-19 Pandemic and Impending Global Mental Health Implications. *Psychiatria Danubina*, 32(1), 32-35.
- Simko, M. & Mattson, M.O. (2019). "5G Wireless Communication and Health Effects—A Pragmatic Review Based on Available Studies Regarding 6 to 100 GHz," *Int J Environ Res Public Health*, 16(18), 3406 doi: [10.3390/ijerph16183406](https://doi.org/10.3390/ijerph16183406)

- Sowa, P., Rutkowska, J., & Sulkowska, U. (2012). Ionizing and Non-Ionizing Electromagnetic Radiation in Modern Medicine. *Polish Annals of Medicine*, 19(2), 134-138,
- The Chinese Preventive Medicine Association (2020). An update on the epidemiological characteristics of novel coronavirus pneumonia (COVID-19). *Chin J Epidemiol*, 41(2), 139–144.
- Uthman, M., Shaibu, F.E., Najashi, B.G., Labran, I.F., Umar, A.S., Abdullah, U.S. (2020). 5G Radiation and COVID-19: The Non-Existent Connection. *IJRECE*, 8(2), 10-38.
- Wang, Y., Wang, Y., Chen, Y., & Qin, Q. (2020). Unique epidemiological and clinical features of the emerging 2019 novel corona virus pneumonia (COVID-19) implicate special control measures. *Journal of Medical Virology*.
- Waterson, J., Hern, A. (2020). At least 20 UK phone masts vandalised over false 5G coronavirus claims The Guardian. (2020 Apr 06). [Online] Retrieved on 19-05-2020 from URL: <https://tinyurl.com/v3fv7mh>
- World Health Organization (2020). WHO Coronavirus disease (COVID-19) dashboard, [Online] Retrieved on 6 June 2020 https://covid19.who.int/?gclid=EAIaIQobChMInvCvjaDt6QIVhe7tCh1ZSg8cEAAYASAAEgLjxfD_BwE
- Yang, Y., Peng, F., Wang, R., Guan, K., Jiang, T., Xu, G., & Chang, C. (2020). The deadly coronaviruses: The 2003 SARS pandemic and the 2020 novel coronavirus epidemic in China. *Journal of Autoimmunity*, 102434.