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# **Bibliometric Survey on Impact of Sound Therapy on Blood Pressure and Covid-19.**

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## **Abstract**

The current situation of spread of Corona Virus is really worth to worry and critical. As we are moving from stage 2 to stage 3, it is really our duty and right to prevent its spread effectually, as its threat to life of every individual. As per the expert opinion from Health Organizations, the elder people are most at risk of Corona infection. But if the people with high blood pressure or high cholesterol fail to take their prescribed medication, then they are also prone to various infections, due to low immunity levels. Along with regular medication, Sound Therapy is proven the best to improve blood circulation to different organs and also to develop better heart health. So the main objective of this Bibliometric paper is to show positive impact of Yoga and Sound Therapy like clapping, which is one of the best acupressure techniques, on the control of blood pressure. These techniques may lead to one step towards avoiding the spread of Corona Virus infection. The Bibliometric analysis in this paper is done using the giant databases including Scopus, Web of Science, Google Scholar, and Research Gate. The tools like Gephi, iMapBuilder, NodeXL etc are used for Data Visualization purpose. The study exposed that most of the publications of impact of Sound Therapy on Covid-19 and blood pressure are from conference and journals, affiliated to Computer Science and healthcare, United States lead publications followed by United Kingdom and then Australia, India.

**Keywords:** Bibliometric Analysis, Corona Virus, Blood Pressure, Sound Therapy, Yoga.

## 1. INTRODUCTION

We all are aware of today's situation about spread of Corona Virus across all over the world and disease Covid-19 occurring due to spread of this Virus. Its impact on human body and society has become highly devastative and becoming uncontrollable day by day. Also as it spreads through touch to a surface which is infected by Corona Virus, increase in number of infected people is taking place in exponential manner. At this moment, there is no confirmed and fully proven vaccination available for this disease which can fully cure the infected patient, though the healthcare experts are working on it. However medical and biological researches are being carried out and they are in advanced stage.

In current scenario, the only option that we have is to prevent spread of Corona Virus or to kill or make it inactive to the extent possible. One of the solutions to kill or stop its spread is using "Sound Therapy" which is being used since ancient times and mentioned in Vedic culture. One of the best proofs of positive effect of sound therapy is fast growth of trees and plants when undergone the scientific and positive musical environment. Apart from these medical and psychological benefits, sound and vibrations also have power to change space or sky element. For this purpose, Prime Minister of India, Narendra Modi asked to express our gratitude towards the healthcare professionals and other emergency workers in this hard time by clapping which is a part Sound Therapy. Most of the Researchers state that gratitude is not simply a traditional way but it has some scientific reason behind. Showing gratitude through Clapping, Ringing Bells, and metals is the same example of this as discussed by Algoe, S. B et al. in [12].

As per Ayurveda and proven medical knowledge of "Pancha Mahabhoot Theory", every living and non living thing is made up of five basic elements out of which one element is space. Space is present in hollow cavities inside body and empty areas of cosmos. Space transmits sound without resistance and friction.

Now in the current scenario, space or sky element has been contaminated by this Virus significantly. So when sound energy will be transmitted through this space, positive vibrations will be created. It will also create resonance (highest wavelength) which will ultimately kill all

infection in the space and heal the system. In short, sound energy will purify infected spaces or environment.

However considering volume of space or cavities, this sound needs to be produced in very large scale. So the idea of producing sound and hence vibration in the environment at particular time declared all over country will definitely help. This sound can be in form of clapping, bell, mantras; chanting OM etc., as discussed by Karabinus et al. in [4].

## **2. Sound Therapy and Blood Pressure**

Generally we think that clapping means to give compliments or appreciation to someone for his work done in his respective field as social work, research, sports etc. It is out token of gratitude. But this is not always a fact. Most of us are unaware of the hidden benefits of the clapping. From the past few years, we see that the people from various age groups gather together early in the morning, in the parks or at other some public places for various purposes like exercise, Yoga and group laughing (laughter-clubs) etc. These groups also clap together as a part of exercise. This high frequency sound helps in replenishing brain energies. Vibrations stimulate brain and nervous systems and yield positive vibes, as discussed by Leviant, C in [5]

Regular clapping and Yoga, better result in stimulating blood circulations to different organs in the body and veins passing through the heart as well, as stated by Sukanya Biswas in [26]. Thus the obstructions in the veins and level, as mentioned by olgoff-Kaspar, R et al. in [1]

While clapping our palms which have blood vessels and nerve endings, gets impacted on each other multiple times. During this period, brain gets positive signals and depression state reduces. Thus circulation of blood in the entire body improves and heart problem decreases. Scientific music and vibrations can also address underlying cause of headache and asthma, as discussed by Leviant, C in [5]

## **3. Yoga and Blood Pressure**

Yoga is a religious and intellectual regulation activity. Origin of Yoga is in India. [28]. It combines temperate movements with controlled, alert inhalation and meditation. Yoga is also a

beneficial practice to reduce high blood pressure. It also minimizes the risk of heart problems and problems related kidney diseases. Yoga as well as meditation helps to reduce pressure and nervousness.

As per the research article published in newsletter “MedicalNewsToday”, in 2016, researchers conducted one survey to prove the positive impacts of Yoga on blood pressure, as mentioned by Markus MacGill in [27]. They randomly divided the near about 137 people into three different groups:

**Group1:** 43 people were included in this group. There was arrangement of two Yoga classes of 90 minutes duration, each week for 12 weeks.

**Group2:** 48 people were included in this group. This group followed a health education as well as walking program. It included classes for healthful living. Guidance regarding nutrition was given to the participants. Participants started walking up to 180 minutes per week.

**Group3:** 46 people were included in this group. They attended both the Yoga classes like Group1 as well as schedule of healthful living like Group2.

After survey of 12 weeks, the result of blood pressure was more significant in the group which was given practice of only Yoga as compared to the remaining groups which were given the health education and walking program. Though the results in blood pressure were not too much impressive, but still small reductions may be beneficial to health, as mentioned by Markus MacGill in [27].

## **PRELIMINARY DATA COLLECTION**

Research publications can be accessed using free access as well as paid access. Institutes or Individuals can register to access the paid publications. University library portals can also be used to access these research publications. Popular publication databases are Scopus, Web of Science, Mendeley, ScienceDirect, DBLP, Google Scholar, and Research Gate etc. Scopus and Web of Science are the main databases of peer-reviewed literature research. These databases are used in this paper. Significant keywords are identified and described in section 4.1.

## 4.1 Significant keywords

The main keywords used in this study were segregated into two compartments viz., master and primary type. For this research, table 1 enumerates keywords list used as a search tactic.

*Table 1: Planned Search tactic for Keywords*

<b>Master-Keyword</b>	<b>"Corona Virus and Blood Pressure"</b>
Primary-Keyword (AND)	"Corona Virus" and "blood pressure" or "clap" or "acoustic" or "Stress" or "Yoga" or "Sound Therapy"

Different tools like Gephi, iMapBuilder, NodeXL are used as a data visualization tools. These tools are generally used by Data Analysts or Scientists.

## 4.2 Primary Investigation Outcomes

Initial investigation is carried out through different combinations of keywords which are part of research topic. Using keywords: ("Corona Virus" and "blood pressure" or "clap" or "acoustic"), result shows 32 publications.

*Table2: The Publication types "Impact of Sound Therapy on Blood Pressure and Corona Virus"*

<b>DOCUMENT TYPE</b>	<b>Count</b>
Article	20
Review	5
Editorial	2
Short Survey	2
Book Chapter	1
Conference Paper	1
Conference Review	1

Source: <http://www.scopus.com> (accessed on 21<sup>st</sup> March 2020)

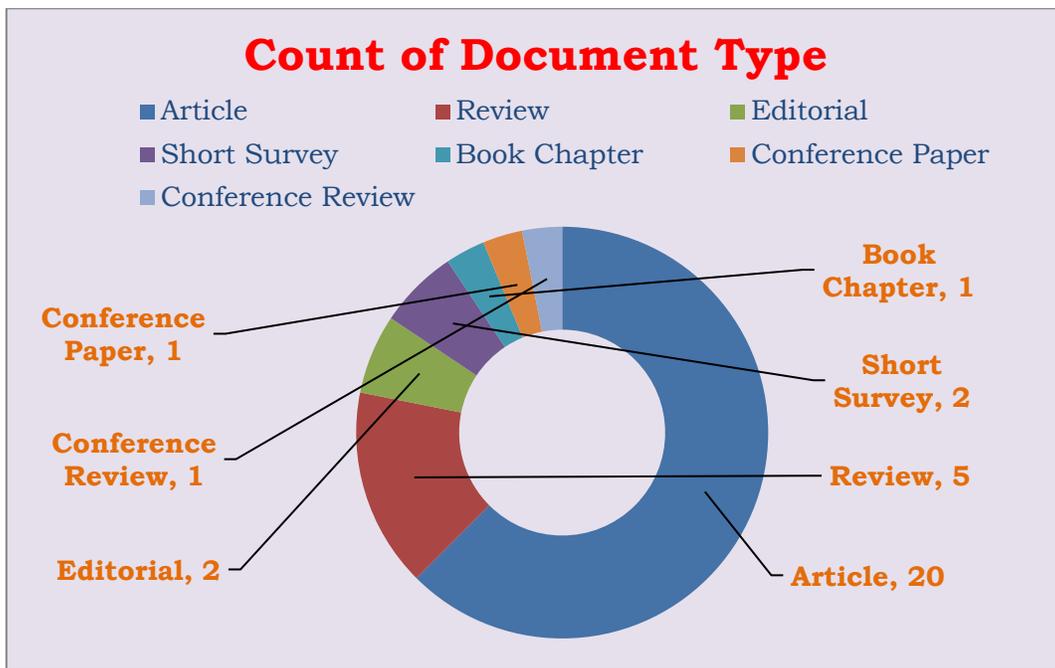


Fig 4.1: Doughnut Chart showing the Publication types “Impact of Sound Therapy on Blood Pressure and Corona Virus”

Source: <http://www.scopus.com> (accessed on 21<sup>st</sup> March 2020)

### 4.3 Groundwork data highlights

The data related to Impact of Sound Therapy on Blood Pressure and Corona Virus is gathered as journal papers, conference papers, articles, reports, etc. for the span from 1975 to 2020. Yearly publication counts are shown in table 3. Same is shown in Figure 4.2 using Gephi Visualization tool.

Table 3: Trends for Yearly publishing in “Impact of Sound Therapy on Blood Pressure and Corona Virus”

Year	Publication count	Year	Publication count
2020	1	2010	1
2019	2	2009	1
2018	2	2008	1
2017	1	2007	4
2016	3	2006	2
2015	3	2004	1
2013	2	2002	2
2012	3	1995	1
2011	1	1975	1

Source: <http://www.scopus.com> (accessed on 21<sup>st</sup> March 2020)

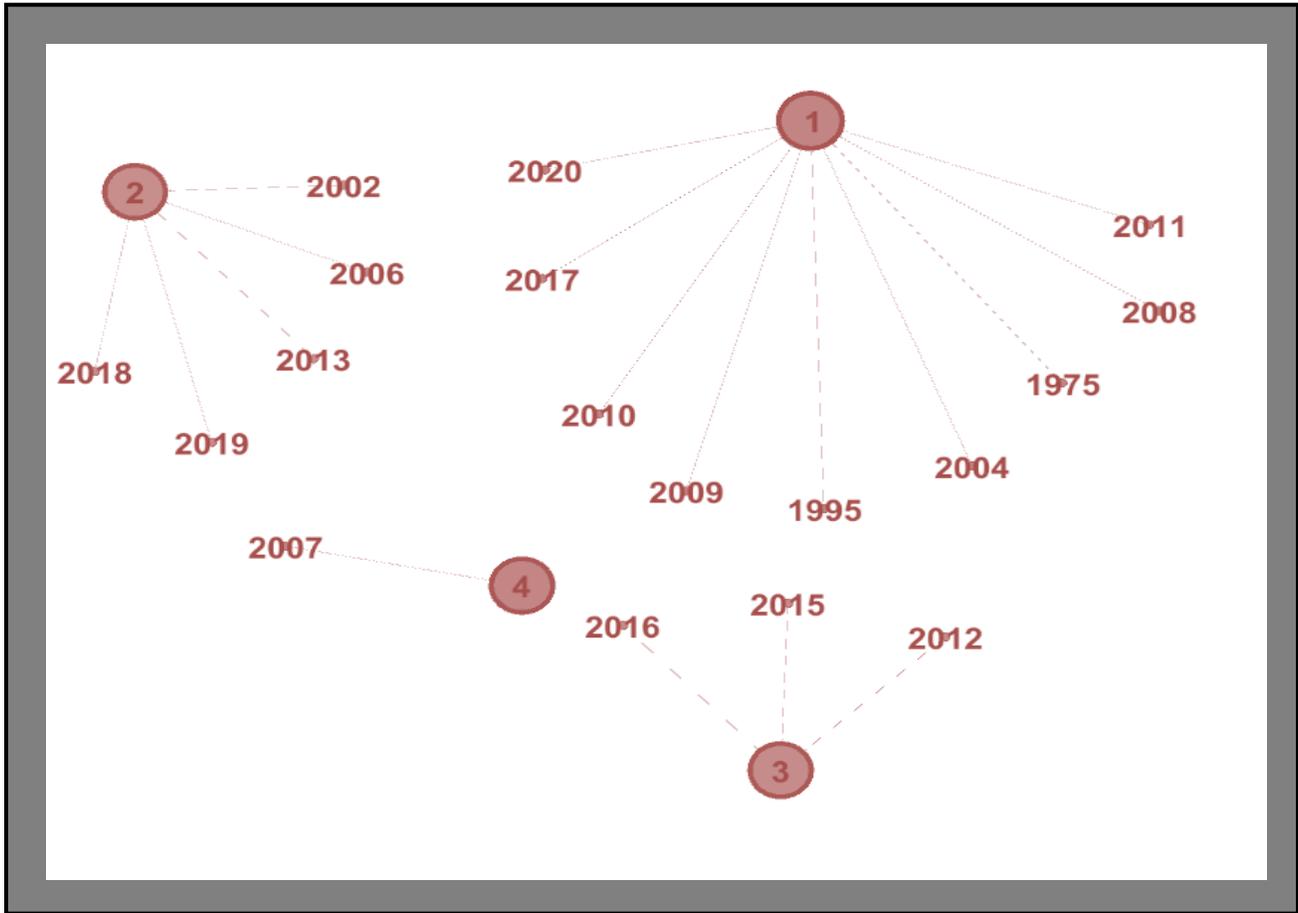


Fig.4.2. Gephi Graph showing Yearly publications in “Impact of Sound Therapy on Blood Pressure and Corona Virus”

Source: <http://www.scopus.com> (accessed on 21<sup>st</sup> March 2020)

Each publication has different number of citations. Table 4 shows citations per year for the papers published in “Impact of Sound Therapy on Blood Pressure and Corona Virus”

Table 4: Yearly citations for articles published in “Impact of Sound Therapy on Blood Pressure and Corona Virus”

Year	Citations
<2016	593
2016	74
2017	78
2018	71
2019	82
2020	19

Source: <http://www.webofknowledge.com> (accessed on 21<sup>st</sup> March 2020)

Following Figure 4.3 shows a publication year and the number of citations received by publications.

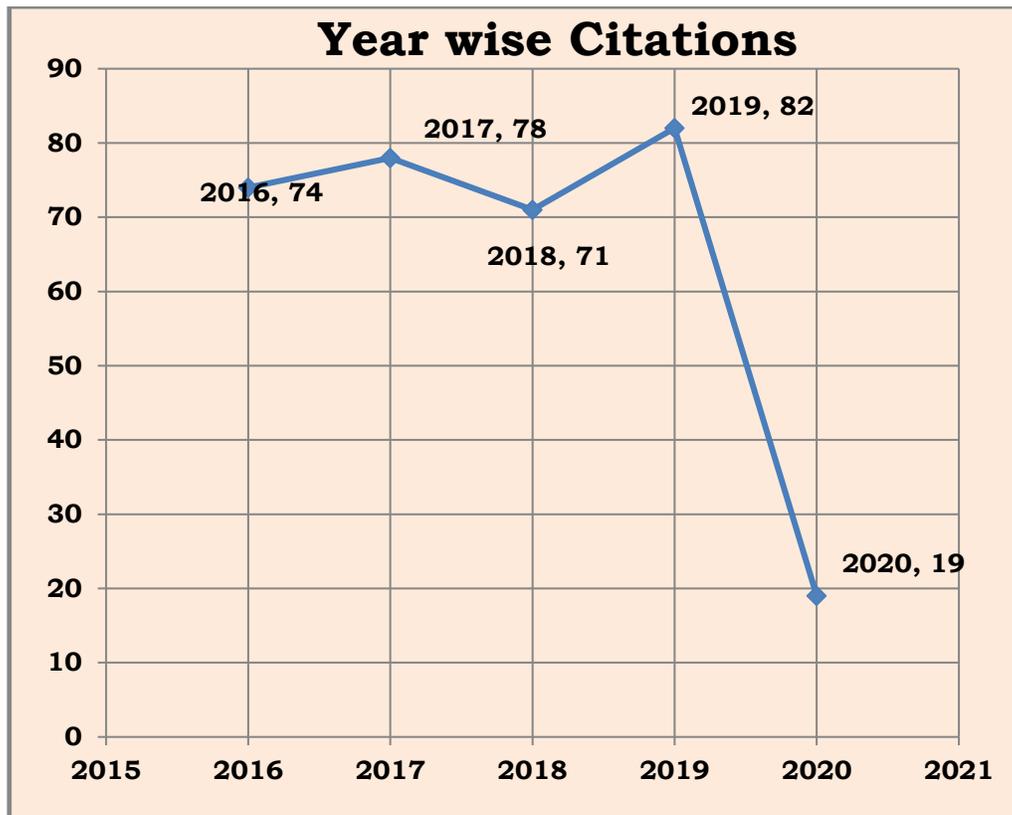


Fig.4.3. Scatter Chart showing Yearly Citations for the publications in “Impact of Sound Therapy on Blood Pressure and Corona Virus”

Source: <http://www.webofknowledge.com> (accessed on 21<sup>st</sup> March 2020)

#### 4.4 Data Investigation

Due to constant discussion about Corona Virus in the form of newspaper, TV news channels, social media etc. and issues happening all around the world, many people may experience increased blood pressure, stress, anxiety etc. It may reduce in turn the immunity levels of an individual and become susceptible for Virus attack of different kinds. [8]

The thorough Bibliometric study was conducted in section 5 to know the distinctiveness of literature, prominent research work in “Impact of Sound Therapy on Blood Pressure and Corona Virus” through geographical attentiveness of the research, sponsored funding statistics, author contributions, journals where papers have been published and their statistics, along with an analysis of citation and collaborative studies.

## 5. BIBLIOMETRIC ANALYSIS

To perform a Bibliometric analysis of “Impact of Sound Therapy on Blood Pressure and Corona Virus”, the following two ways are applied:

- Investigation of research publications in different geographical regions, paper citation etc.
- Information about the author statistics, subject areas, funding, and subject areas.

### 5.1 Geographical regional analysis

iMapbuilder.net is used to Fig.5.1 which shows country wise cases recovered suffering from Corona Virus Infection. Geographical locations of affected countries are shown in the figure.



Fig.5.1. Geographical locations of affected countries Corona from Virus Infection

Source: [http:// www.kaggle.com](http://www.kaggle.com) (accessed on 21<sup>st</sup> March 2020)

Health organizations are successful to fight with Covid-19. But still no perfect medicine is available for this. Following Table 5 shows country wise deaths due to Covid-19.

*Table 5: Country wise deaths due to Covid-19*

<b>Country/ Territory</b>	<b>Number of Deaths</b>	<b>Country/ Territory</b>	<b>Number of Deaths</b>	<b>Country /Territory</b>	<b>Number of Deaths</b>
Albania	2	Ireland	3	Ecuador	5
Algeria	11	Italy	4032	Egypt	8
Argentina	3	Japan	33	France	450
Australia	13	Kazakhstan	3	Germany	67
Bangladesh	1	Korea, South	94	Greece	6
Belgium	37	Malaysia	3	India	5
Brazil	11	Netherlands	107	Indonesia	32
Bulgaria	3	Norway	7	Iran	1433
Burkina Faso	1	Pakistan	3	Iraq	17
Canada	12	Philippines	18	Denmark	9
China	3253	Spain	1043	Dominican Republic	2
Croatia	1	Sweden	16	United Kingdom	178
Cruise Ship	7	Switzerland	54	US	243
Cuba	1	Turkey	4		

Source: [http:// www.kaggle.com](http://www.kaggle.com) (accessed on 21<sup>st</sup> March 2020)

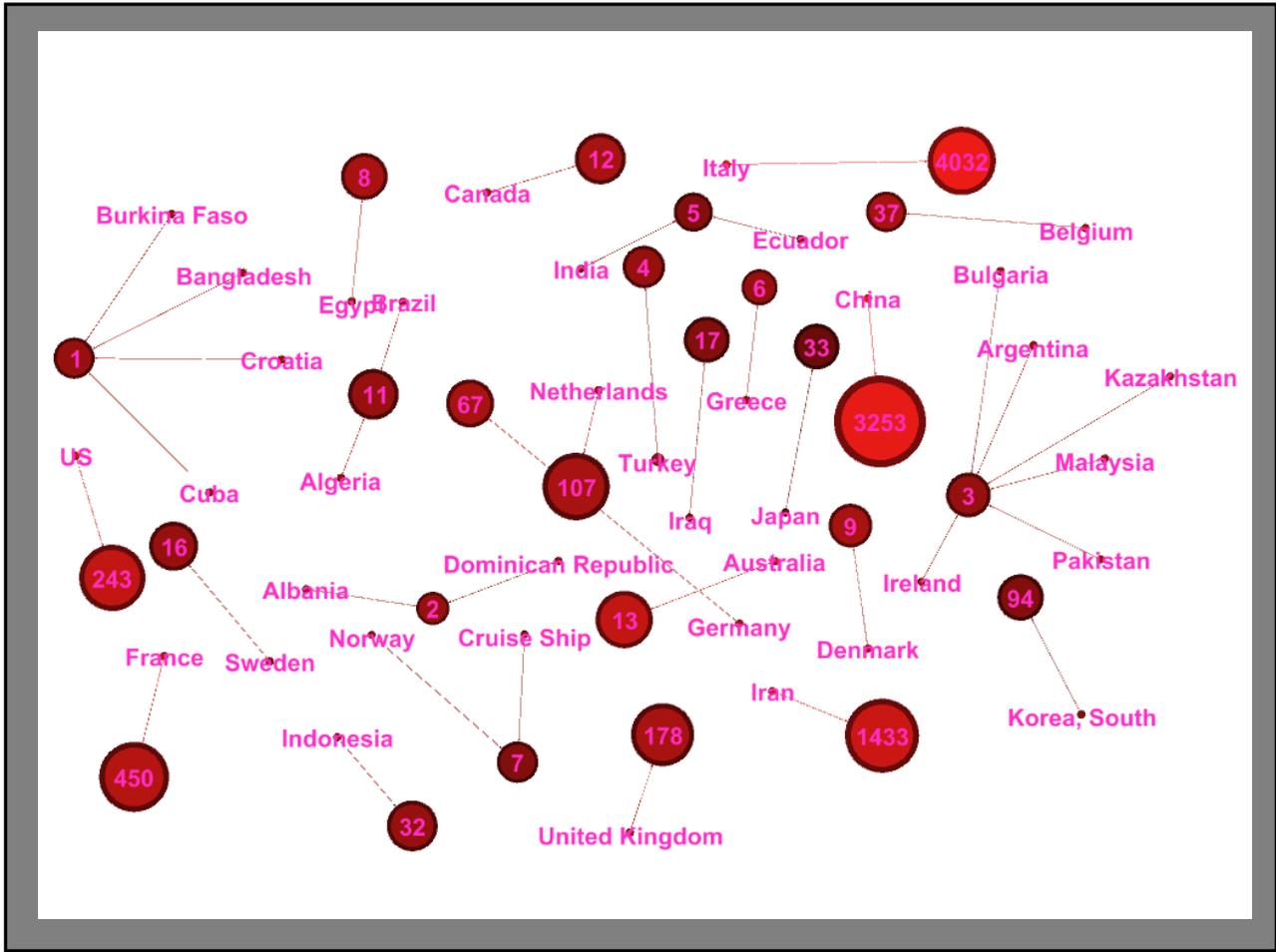


Fig. 5.2: Gephi Graph showing Geographic locations deaths due to Covid-19.  
 Source: [http:// www.kaggle.com](http://www.kaggle.com)(accessed on 21<sup>st</sup> March 2020)

Figure 5.3 shows the countries having publications in the area of literature having keywords like "Corona Virus" and "blood pressure" or "clap" or "acoustic". It is visible that most of the research has been done in United States. This graph is generated using Gephi Visualization tool.

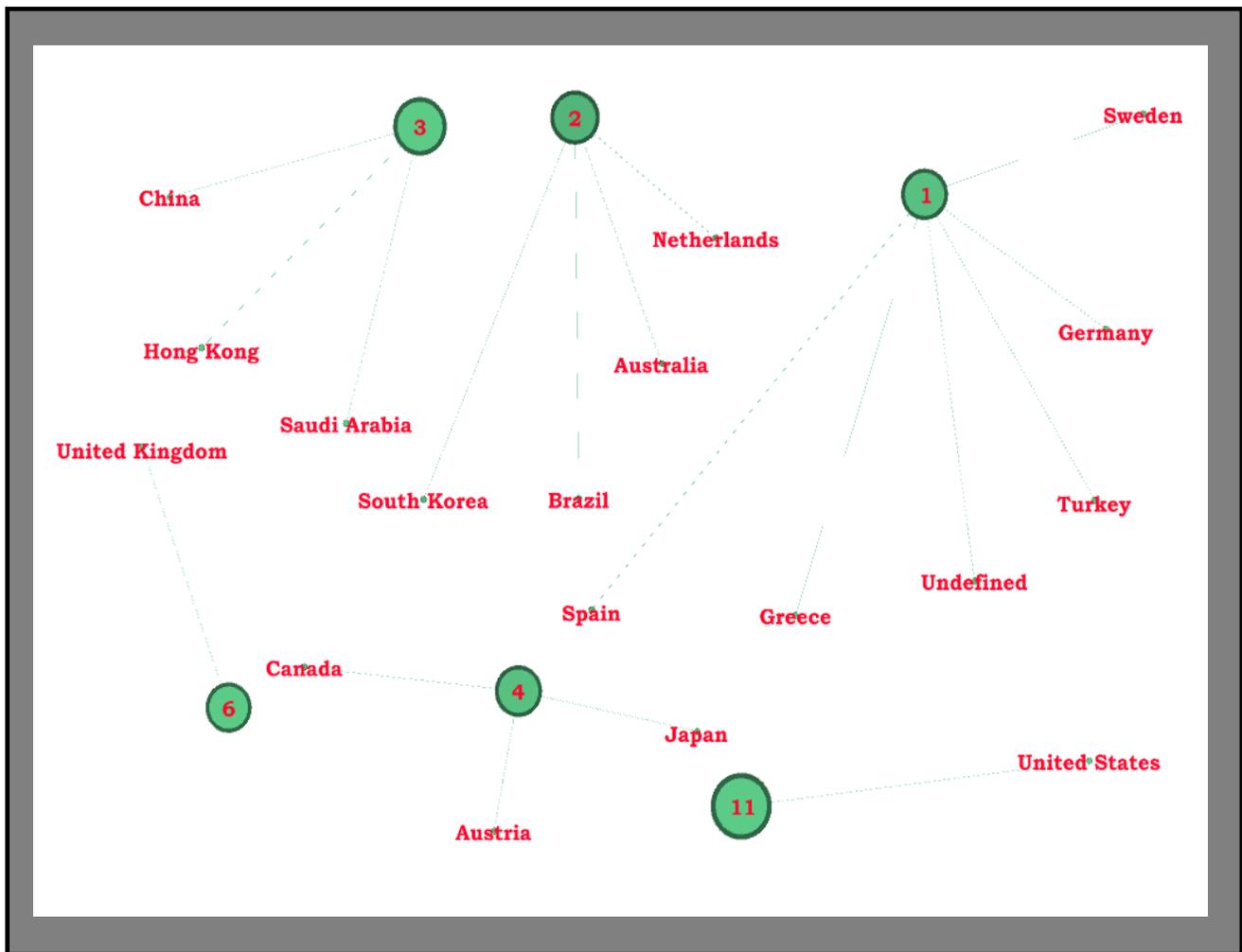


Fig. 5.3: Gephi Graph showing Countries having publications in “Impact of Sound Therapy on Blood Pressure and Corona Virus”

Source: <http://www.scopus.com> (accessed on 21<sup>st</sup> March 2020)

## 5.2 Subject Areas

In Figure 5.4, subject area wise publications in “Impact of Sound Therapy, Yoga on Blood Pressure” are shown. We can state that, most of the research is done in Medicine area. It is followed by area of Pharmacology, Toxicology and Pharmaceutics. It is also visible from these pictorial representations that less amount of research been carried out in the area of Chemistry. This graph is generated using Gephi Visualization tool.

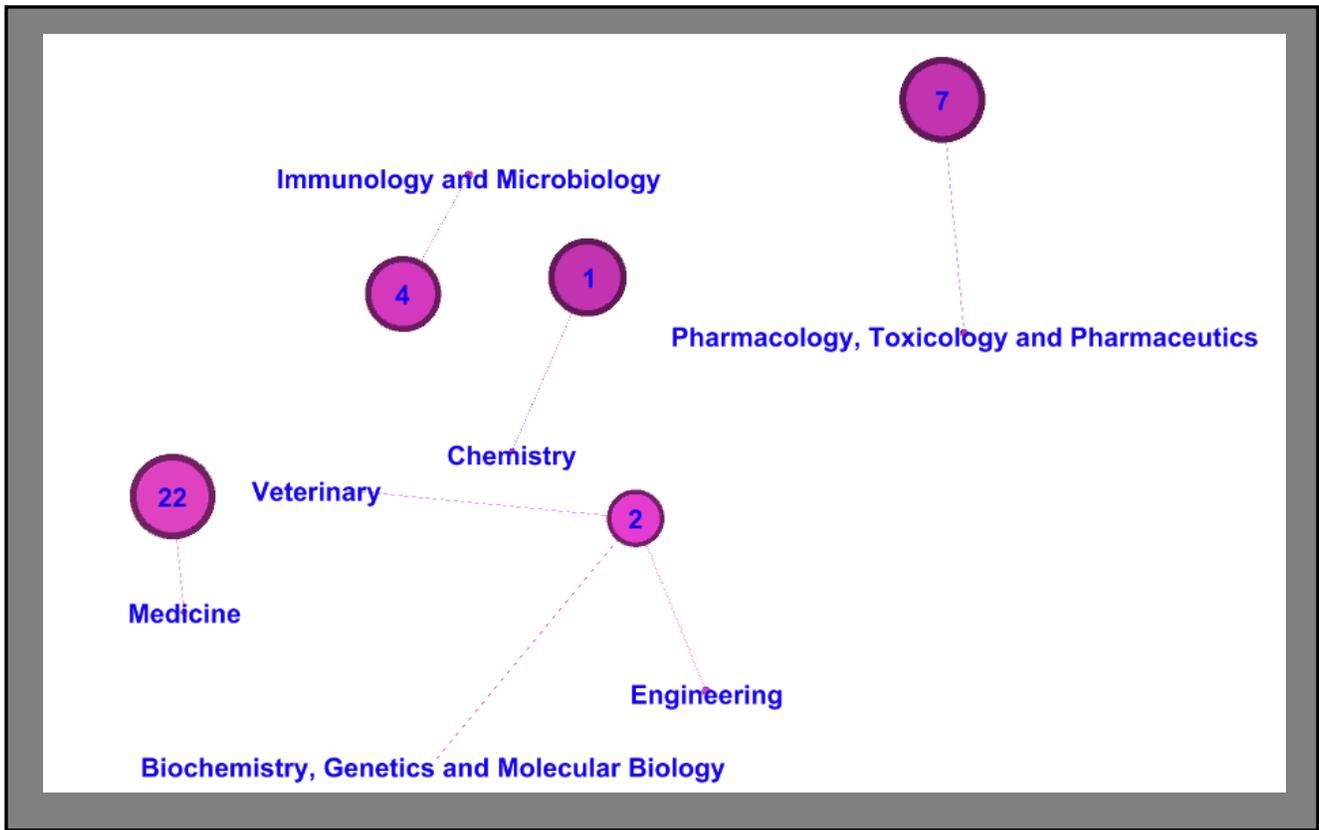


Fig.5.4: Gephi Graph showing Subject area of extracted literature “Impact of Sound Therapy, Yoga on Blood Pressure”

Source: <http://www.scopus.com> (accessed on 21<sup>st</sup> March 2020)

### 5.3Sponsored Funding

Figure 5.5 shows the funding agencies who have contributed more in the research of “Impact of Sound Therapy on Blood Pressure and Corona Virus”.



Fig.5.5: Radar Chart showing Sponsored Funding for the research related to the keywords like sound therapy, blood pressure, Corona Virus etc.

Source: <http://www.Scopus.com> (accessed on 21<sup>st</sup> March 2020)

## 5.4 Author statistics

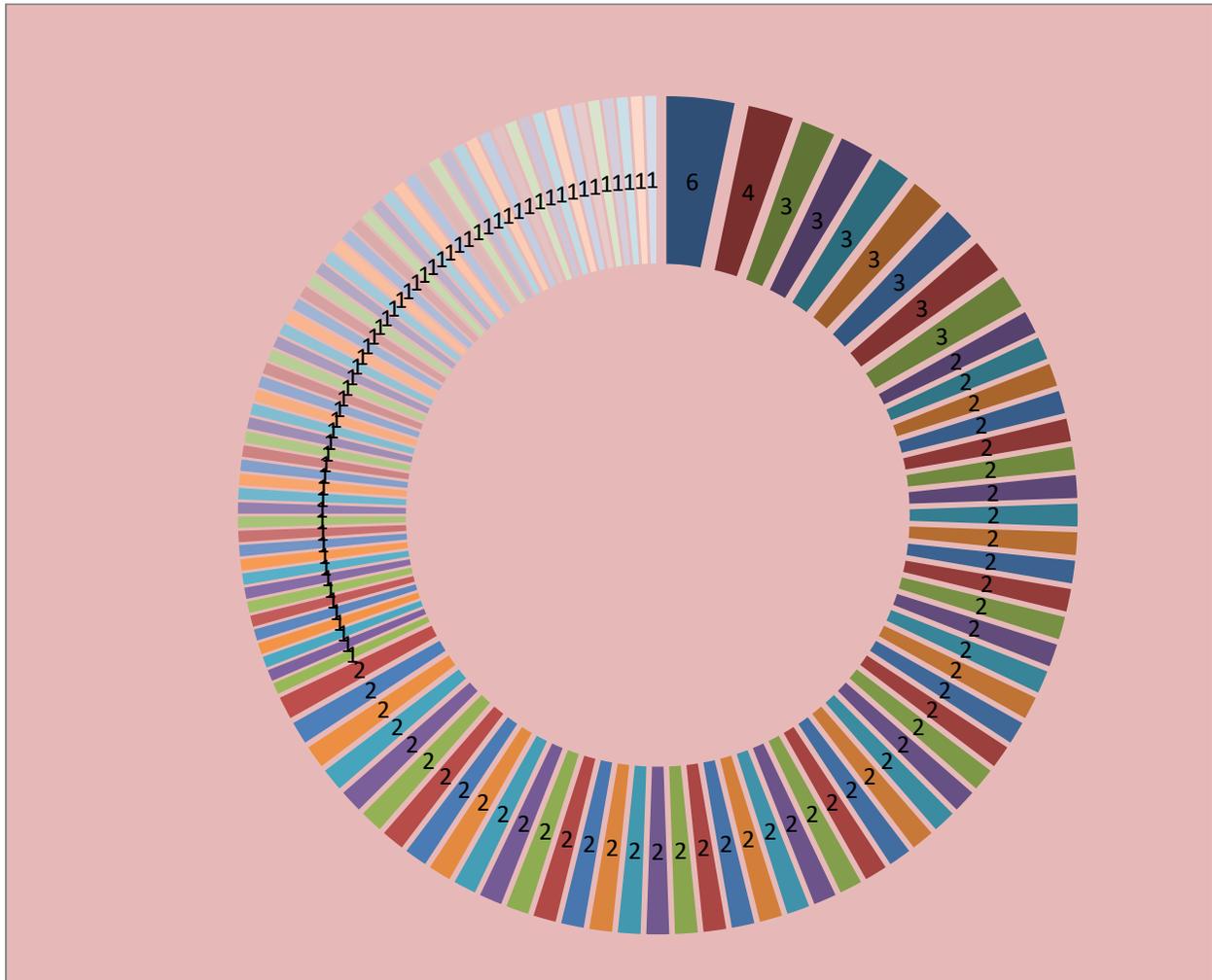
Authors from different countries have worked in the similar research areas / domains as selected in this Bibliometric study. Table 6 shows author wise publications details.

Table 6: Author wise Publications

Author Name	Publications	Author Name	Publications
Babisch, W.	6	ZÃ³calo, Y.	3
Hecht, K.	4	Barron, K.W.	2
Aftanas, L.I.	3	Blumenthal, T.D.	2
Armentano, R.L.	3	Brak, I.V.	2
Bia, D.	3	Bluhm, G.	1
Evans, G.W.	3	BlÃ¡zquez-Medela, A.M.	1
Schulz, A.	3	Bocchi, E.A.	1
Torrado, J.	3	Castro, A.	1
Channon, K.M.	1	Cecon, M.	1

Source: <http://www.Scopus.com> (accessed on 21<sup>st</sup> March 2020)

Authors who have published work in “*Impact of Sound Therapy on Blood Pressure and Corona Virus*” are shown in the Figure 5.6.



*Fig.5.6: Doughnut Chart showing top authors published papers related to the keywords like sound therapy, blood pressure, Corona Virus etc*

Source: <http://www.webofknowledge.com> (accessed on 21<sup>st</sup>March 2020)

## 5.5 Disease outbreak and control statistics

Map shown in Figure 5.7, shows top research institutions working to control the impact of Corona Virus [29]. The map shows the 500 top most global institutions, along with the 200 most prolific Chinese institutions by publication count. If we click on a icon, it will display information about that institution. It shows total authors, publications and citations of publications.



Fig.5.7:Map showing Top research institutes working to control the impact of Corona Virus  
 Source: <http://www.scopus.com> (accessed on 21<sup>st</sup>March 2020)

## 6. CONFINES OF THE PRESENT STUDY

Combinations of different keywords are used to search relevant in the Scopus and Web of Sciences databases. This Bibliometric analysis includes research papers only in English language. Some relevant papers and articles which are not part of Scopus and Web of Science are not included in this analysis.

## 7. CONCLUSION

Prime Minister of India, Narendra Modiji asked to show gratitude towards healthcare professionals and other emergency workers in this hard time by clapping, but it has a great health benefits too, as discussed in this paper. Considering all this analysis and Scientists opinion, expressing gratitude by clapping is not only a time-honored way. It is highly recommended to clap, chant, and make sound with metallic substances or temple bells.

It will generate positive vibes and serve the mentioned purpose of getting rid from Corona Virus infection up to some extent. It cannot cure Covid-19 as a whole, but it can be considered as an

additional beneficial step towards good health. Yoga has also proved positive impact on the control of blood pressure. Though it is not an alternate treatment, it can be considered as an additional beneficial treatment plan.

## **Acknowledgment**

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