

# Coronavirus is a Biological Warfare Weapon

## Robert Skopec\*

Department of Pharmaceutical Biotechnology, Researcher-analyst, Dubnik, Slovakia

# ABSTRACT

Dr. Francis Boyle, who drafted the Biological Weapons Act has given a detailed statement admitting that the 2019 Wuhan Coronavirus is an offensive Biological Warfare Weapon and that the World Health Organization (WHO) already knows about it. Francis Boyle is a professor of international law at the University of Illinois College of Law. He drafted the U.S. domestic implementing legislation for the Biological Weapons Convention, known as the Biological Weapons Anti-Terrorism Act of 1989, that was approved unanimously by both Houses of the U.S. Congress and signed into law by President George H.W. Bush.

Keywords: Coronavirus; Biological warfare weapon; the World Health Organization; The biological weapons convention; The Wuhan BSL-4 lab.

# BACKGROUND

Dr. Boyle discusses the coronavirus outbreak in Wuhan, China and the Biosafety Level 4 laboratory (BSL-4) from which he believes the infectious disease escaped. He believes the virus is potentially lethal and an offensive biological warfare weapon or dual-use biowarfare weapons agent genetically modified with gain of function properties, which is why the Chinese government originally tried to cover it up and is now taking drastic measures to contain it. [1,2]. The Wuhan BSL-4 lab is also a specially designated World Health Organization (WHO) research lab and Dr. Boyle contends that the WHO knows full well what is occurring.

### LITERATURE REVIEW

Dr. Boyle also touches upon GreatGameIndia's exclusive report Coronavirus Bioweapon – where we reported in detail how Chinese Biowarfare agents working at the Canadian lab in Winnipeg were involved in the smuggling of Coronavirus to Wuhan's lab from where it is believed to have been leaked [3,4].

Dr. Boyle's position is in stark contrast to the mainstream media's narrative of the virus being originated from the seafood market, which is increasingly being questioned by many experts [5,6].

Recently, American Senator Tom Cotton of Arkansas also dismantled the mainstream media's claim on Thursday that pinned the coronavirus outbreak on a market selling dead and live animals [7-12].

In a video accompanying his post, Cotton explained that the Wuhan wet market (which Cotton incorrectly referred to as a seafood market) has been shown by experts to not be the source of the deadly contagion.

Cotton referenced a Lancet study which showed that many of the first cases of the novel coronavirus, including patient zero, had no connection to the wet market – devastatingly undermining mainstream media's claim.

"As one epidemiologist said: 'That virus went into the seafood market before it came out of the seafood market.' We still don't know where it originated," Cotton said.

"I would note that Wuhan also has China's only bio-safety level four super laboratory that works with the world's most deadly pathogens to include, yes, coronavirus."

Such concerns have also been raised by J.R. Nyquist, the well known author of the books "Origins of the Fourth World War" and "The Fool and His Enemy," as well as co-author of "The New Tactics of Global War". In his insightful article he published secret speechs given to high-level Communist Party cadres by Chinese Defense Minister Gen. Chi Haotian explaining a long-range plan for ensuring a Chinese national renaissance – the catalyst for which would be China's secret plan to weaponiz viruses.

Nyquist gave three different data points for making his case in analyzing Coronavirus. He writes:

The third data point worth considering: the journal Great Game India

Correspondence to: Robert Skopec, Department of Pharmacutical Biotechnology, Researcher-analyst, Dubnik, Slovakia, Email: zxcbnvm7@gmail.com Received: February 03, 2021, Accepted: February 18, 2021, Published: February 25, 2021

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has published a piece titled "Coronavirus Bioweapon – How China Stole Coronavirus From Canada And Weaponized It."

The authors were clever enough to put Khan's Virology Journal article together with news of a security breach by Chinese nationals at the Canadian (P4) National Microbiology Lab in Winnipeg, where the novel coronavirus was allegedly stored with other lethal organisms. Last May, the Royal Canadian Mounted Police were called in to investigate; by late July the Chinese were kicked out of the facility. The chief Chinese scientist (Dr. Xiangguo Qiu) was allegedly making trips between Winnipeg and Wuhan.

Here we have a plausible theory of the NCoV organism's travels: first discovered in Saudi Arabia, then studied in Canada from whence it was stolen by a Chinese scientist and brought to Wuhan. Like the statement of Taiwan's intelligence chief in 2008, the GreatGameIndia story has come under intensive attack. Whatever the truth, the fact of proximity and the unlikelihood of mutation must figure into our calculations.

It's highly probable that the 2019-nCoV organism is a weaponized version of the NCoV discovered by Saudi doctors in 2012.

Meanwhile, the mainstream media's narrative still maintains that the origin of the 2019 Coronavirus is the Wuhan Seafood Market. After GreatGameIndia published the story on Coronavirus Bioweapon – not only were our databse tinkered with and our reports blocked by Facebook on the flimsy reason that they could not find GreatGameIndia Facebook page, but the report itself was viciously attacked by Foreign Policy magazine, PolitiFact (known widely as Facebook's propaganda arm) and BuzzFeedNews.

It is not GreatGameIndia alone which is being viciously attacked. Zero Hedge, a popular alternate media blog was suspended by Twitter for publishing a story related to a study by Indian scientists finding 2019 Wuhan Coronavirus to be not naturally evolved, raising the possibility of it being created in a lab. Shockingly, the study itself came under intense online criticism by Social Media experts resulting in the scientists withdrawing the paper.

In retaliation India has launched a full-scale investigation against China's Wuhan Institute of Virology. The Indian government has ordered an inquiry into a study conducted in the Northeastern state of Nagaland (close to China) by researchers from the U.S., China and India on bats and humans carrying antibodies to deadly viruses like Ebola.

The study came under the scanner as two of the 12 researchers belonged to the Wuhan Institute of Virology's Department of Emerging Infectious Diseases, and it was funded by the United States Department of Defense's Defense Threat Reduction Agency (DTRA).

The study, conducted by scientists of the Tata Institute of Fundamental Research, the National Centre for Biological Sciences (NCBS), the Wuhan Institute of Virology, the Uniformed Services University of the Health Sciences in the U.S. and the Duke-National University in Singapore, is now being investigated for how the scientists were allowed to access live samples of bats and bat hunters (humans) without due permissions.

The results of the study were published in October last year in the PLOS Neglected Tropical Diseases journal, originally established by the Bill and Melinda Gates Foundation.

As the author J.R. Nyquist puts it:

We must have an investigation of the outbreak in Wuhan. The Chinese must grant the world total transparency. The truth must come out. If Chinese officials are innocent, they have nothing to hide. If they are guilty, they will refuse to cooperate.

The real concern here is whether the rest of the world has the courage to demand a real and thorough investigation. We need to be fearless in this demand and not allow "economic interests" to play a coy and dishonest game of denial. We need an honest inquiry. We need it now.

The corrupt establishment will do anything to suppress critical sites like the Burning Platform, etc., from revealing the truth. The corporate media does this by demonetizing sites like mine by blackballing the site from advertising revenue.

Trump threatens to halt WHO funding, review U.S. membership

U.S. President Donald Trump threatened on Monday to permanently halt funding for the World Health Organization (WHO) if it did not commit to improvements within 30 days, and to reconsider his country's membership of the agency [13,14].

Trump suspended U.S. contributions to the WHO last month, accusing it of promoting Chinese "disinformation" about the novel coronavirus outbreak, although WHO officials denied the accusation and China said it was transparent and open.

"If the WHO does not commit to major substantive improvements within the next 30 days, I will make my temporary freeze of United States funding to the WHO permanent and reconsider our membership," Trump told its chief, Tedros Adhanom Ghebreyesus, in a letter posted https://bit.ly/3bNB3R7 on Twitter.

Earlier, Trump said the Geneva-based WHO had "done a very sad job" in its handling of the coronavirus, which emerged in China late last year, and he would make a decision on funding soon.

Trump said in the letter the only way forward for the WHO was for it to demonstrate independence from China, adding that his administration had started discussing reform with Tedros.

Trump also made various accusations against China in the letter including that it tried to block evidence the virus could be transmitted between people, pressed the WHO not to declare it an emergency, refused to share data and samples and denied access to its scientists and facilities.

China hit back on Tuesday with its foreign ministry spokesman, Zhao Lijian, saying the letter was slanderous.

"The U.S. leadership's open letter is filled with phrases of suggestions, maybes, and potentialities, and is trying to mislead the public through this specious method, to achieve the goal of smearing and slandering China's efforts in epidemic prevention and to shift responsibility in its own incompetence in handling the epidemic," Zhao told a regular briefing.

Zhao said the U.S. decision to stop contributing to the WHO was a violation of its international obligations. (15,16).

# **REVIEW AS SOON AS POSSIBLE**

A WHO spokeswoman in Geneva said on Tuesday the agency had no immediate comment on Trump's letter but expected to have "more clarity" and a reaction to it later in the day.

On Monday, the WHO said an independent review of the global coronavirus response would begin as soon as possible and it had

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received backing and a hefty pledge of funds from China.

The WHO, a U.N. specialized agency, is leading a global initiative to develop safe and effective vaccines, tests and drugs to prevent, diagnose and treat COVID-19, the disease caused by the virus.

More than 4.75 million people have been infected globally and 314,414 have died, according to a Reuters tally.

The United States contributed more than \$400 million to the WHO in 2019, or about 15% of its budget.

This year, the United States has already paid the WHO about \$58 million, senior Trump administration officials said last month, half of what it is required to pay for 2020 - known as an assessed contribution.

The United States traditionally provides several hundred million dollars annually in voluntary funding tied to specific WHO programmes like polio eradication, vaccine-preventable disease, HIV and hepatitis, tuberculosis, and maternal and child and health (15,16).

It was not clear how much voluntary funding the United States has provided for WHO programmes in 2020.

(Reporting by Rama Venkat in Bengaluru and Huizhong Wu in Beijing; Editing by Clarence Fernandez, Robert Birsel).

# VLADIMIR PUTIN IS IN DEEP TROUBLE

Russian President Vladimir Putin is suddenly seen to be weaker than he has been in years, and economic pain from COVID-19 is one big reason, but not the only one.

"Putin's approval rating began to decline even before the coronavirus crisis, with oil prices collapsing and the economy deteriorating and I don't see what can stop this perfect storm this year," says Denis Volkov, deputy director of the Levada Center, which does independent polling. (Meet Russia's Dr. Oz, the COVID Skeptic Who Has Putin's Ear)

"We see the public mood is changing the way we saw it during the crisis of 2008. (About 25 percent of our respondents say their salaries have been cut.)," Volkov told The Daily Beast. But Putin, like U.S. President Donald Trump, has die-hard fans, and "there is still a big group of people who say there is no alternative [to him]."

Putin's biggest challenge is poverty, that old Russian disease. During his best years, when oil prices were astronomical and revenues were very high indeed, the Russian president was able to provide people with money—and with pride. He was building the armed forces, sending them abroad, overtly or covertly, to Ukraine, Syria, and Africa, and developing very expensive new weapons systems. Putin seemed able to provide, as economists say, both guns and butter.

But this year the nation's rapidly shrinking economy has pushed millions below the poverty line, and Putin—whose approval rating was 80 percent in 2014, has seen his numbers, already in decline, drop precipitously. The current number of 59 percent would be positive in the West, but here in Russia, Putin has been used to nearly complete control over television news coverage, and he's been losing that grip.

The Kremlin's major newspaper, Rossiyskaya Gazeta, claims that 70 percent of people still get their news from Kremlin controlled TV, but 58 percent follow news on the internet as well–or instead of–on state media.

So far, dozens of independent news websites have managed to keep functioning, covering news from all angles. But they are under threat, Kirill Kharatyan, editor of Vedomosti, one of Russia's few independent newspapers, told The Daily Beast. As the Putin government's popularity declines, he said, concern grows "there will be more pressure on independent newspapers".

Where the economy is concerned, the government is quick to point out it has reserves for the state budget, and will meet public sector payrolls. But propping up the economy as a whole is another matter. Last year, even before the pandemic, the Federal State Statistics Service reported 20.9 million Russians, more than 14 percent of the population, living on less than \$200 a month.

# HUNGER PANGS

Smolensk lies about halfway between Moscow and Minsk, in Belarus. It is the poorest region in Russia's central federal district, and it is in trouble these days.

Simply put, unemployed people cannot afford food. From the first weeks of the pandemic shutdowns, Nadezhda Petrusiva and her charity, Mercy, have been overwhelmed with pleas for help from single mothers with several hungry children, people with disabilities, and people who are simply terrified by the pandemic.

They call her center asking for food as early as 5 a.m. The center's volunteers or, as they prefer to call themselves, "people of goodwill," begin their mornings packing and delivering basic foods—parcels with cereal, flour, bread—for those in trouble. Grandmothers arrive with small pails to pick up their hot meals; homeless people eat at the center's table.

More than 16 percent of the population in Smolensk lives in poverty, trying to survive on less than \$5.50 a day. The coronavirus crisis made their situation even more desperate. The Kremlin's head of the Accounting Chamber, Aleksey Kudrin, predicts that the number of unemployed in Russia as a whole will triple in the coming months.

"Never in my eight years of work in charity have I seen so many hungry and desperate people as during these months of coronavirus pandemic," says Mercy's Petrusiva.

Putin declared the economic shutdown in late March, after visiting Moscow's new coronavirus hospital. That was the last time the nation saw the leader in action, dressed in full anti-plague gear, inspecting the so-called "red zone" full of patients with pneumonia. Since then Putin's key men, including the hospital chief doctor Denis Protsenko, Russian Prime Minister Mikhail Mishustin, and the presidential spokesman Dmitry Peskov have been diagnosed with coronavirus one after another.

# **BODY COUNTS**

Russia's official death toll has not been nearly as bad as in the United States, Italy, or the United Kingdom, for reasons that are still unclear. District clinics monitor every positive patient at home, possibly providing early care that reduces deaths, but experts say that not all statistics are fully transparent.

In April, Moscow's COVID-19 death toll was 695 people, while the total number of deaths recorded that month was 1,800 higher than usual. "There are people who die from cancer, cardio-vascular disease, but the autopsy shows that they also had COVID-19; their names are not included in the statistics and that's where, of course,

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politics appear here, when governors report to the president, to the federal authorities on the COVID-19 death toll," Aleksey Venediktov, editor-in-chief of Echo of Moscow radio station, told listeners on Saturday. "There will be more dying," he said. "We are in the middle of the process."

Last Monday Russia saw a huge spike in infections—it is now second only to the United States in total numbers. And Russian authorities seem to have stumbled in protecting medical workers. Nobody, not even the most skillful propagandists, would be able to hide that fact. Due to sloppiness and disorganization, 190 Russian doctors and medics have died from COVID-19, according to a list called "We Remember" compiled by fellow physicians.

Last month, Putin promised \$300 bonuses for medics working with coronavirus patients and \$600 bonuses for doctors treating patients in so-called "red zones;" but when doctors received their salaries for April, the bonuses were missing. Russian medical workers, repeatedly called "heroes of our times" by state television, are calling for Putin to pay them the promised bonuses. So far 106,762 people have signed their petition.

### **OPPOSITION OPPORTUNITY**

Putin's opponents on both left and right are using this shaky pandemic moment to try to rock Putin's world. "The power is in agony, their authority is running through their fingers," says a young communist parliament member, Nikolai Bondarenko.

Liberal opposition leader Aleksey Navalny is pressuring the Kremlin online to help poor Russians to stock their empty refrigerators with concrete financial aid in his "Five steps for Russia" program.

Might the Kremlin put more pressure on the independent press and the opposition to shut down critics and help Putin's approval rating? Probably not.

"Authorities cannot afford to tighten more bolts now, people already are gritting their teeth," the founder of Transparency International's Russian office, Yelena Panfilova, told The Daily Beast. "They might whip a few ministers for a show and maybe put a bit more pressure on the media—they need to look nice for the public." That's getting harder and harder for the Putin regime to do.

At least 25 million people in China are under enhanced coronavirus lockdowns after an outbreak of 34 cases in a province next to Russia

• Provinces in northeast China have reimposed several lockdown measures in reaction to 34 new cases of the coronavirus, according to multiple reports.

• Jilin, Liaoning and Heilongjiang have all reimposed varying measures in response to new cases as well as an outbreak from mid-April.

• The Chinese government has sent Sun Chunlan, a highranking party official, as well as medical backup to Jilin, Bloomberg reported.

• The country, which has not reported more than 100 cases per day since mid-April, had planned to ease its borders.

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China has reimposed lockdown measures on northeastern provinces after clusters of new coronavirus cases emerged.

The most recent 34 cases were in the province of Jilin, where its two

main cities of Shulan and Jilin City have both been placed under renewed lockdown, according to Channel News Asia. There are strict controls on transport and public gatherings, and schools have had to re-close, the channel reported. Another three cases have been found in the neighboring province of Liaoning, according to the channel. Jilin borders North Korea and Russia, the latter being one of the worst-affected countries in the world. With the borders are sealed to foreigners, officials suspect that the new outbreak can be traced back to Chinese nationals returning from Russia, according to Bloomberg.

Shulan's government announced the lockdown measures over WeChat on Monday, sealing off residential compounds with suspected or confirmed cases.

Under this lockdown, one resident from a single family may only leave once for two hours every two days for essential supplies.

The sale of anti-fever medicines has also been banned across the province to prevent people from attempting to conceal their symptoms, according to Bloomberg. Delivery services have also mostly halted, the outlet reported.

In neighboring Liaoning, the 8.3 million people in the capital Shenyang are also facing renewed restrictions after three new cases were found on May 11, Channel News Asia said.

The reopening of schools has been delayed and 7,500 residents are under quarantine, according to the channel.

The outbreaks in Jilin and Liaoning come nearly a month after a city in another neighboring province, Heilongjiang, saw a spate of 386 new cases.

On April 26, the province's government imposed lockdown measures in the nearly 1 million-strong city of Mudanjiang, which borders Russia, according to Deutsche Welle. In Harbin, the provincial capital, the measures are lighter but local residents are only allowed to move within their own neighborhoods, reported the newspaper.

New cases of the virus in China have not exceeded 100 per day since mid-April. According to Bloomberg, Jilin province has reported no more than 127 since the coronavirus first began to spread.

The Chinese government is poised to begin its postponed "Two Sessions" political meetings, and was set to relax its borders soon after, according to the Guardian. Vice Premier Sun Chunlan, a high-ranking Communist Party official, arrived in Jilin on May 13, according to Bloomberg. The next day, a 12-strong team of medics was sent from the neighboring Liaoning Province, who previously worked in heavily-affected Hubei Province, according to state media outlet The Global Times.

"Medical treatment for the confirmed patients in the city is going well, with everything under control," Liu Qi, who leads the team, told the outlet.

Mass testing is currently underway in former coronavirus epicenter Wuhan after six new cases were found. But Wang Peiyu, a deputy head of Peking University's School of Public Health, told The Global Times this is not necessary in Jilin.

Chinese streaming firm iQIYI saw its first quarter losses increase to \$406 million (RMB2.88 billion), while revenues and subscriptions improved.

The NASDAQ-listed company reported 119 million paying

subscribers, a year-on year increase of 23%. That implies growth of 12 million subscribers in the January to end of March period in which much of China was in stay-at-home or lockdown mode due to the coronavirus outbreak. With average spending per user also increasing, the subs spurt lifted subscription revenues by 35% in the quarter. Games and content sales revenues also increased. But advertising revenues plunged 27% to \$217 million, and other revenues were also down. Overall group revenues managed a 9% increase to \$1.1 billion (RMB7.6 billion).

Gong Yu, founder and CEO said: "We delivered solid results during the first quarter despite very challenging environment caused by the COVID-19 outbreak." Net losses in the equivalent quarter last year were RMB1.81 billion. Losses in the fourth quarter of 2019 were RMB2.50 billion. In its guidance for the second quarter of 2020, iQIYI said it expects total net revenues to be between RMB7.25 billion (US\$1.02 billion) and RMB7.67 billion (US\$1.08 billion), representing a 2% to 8% increase from the same period in 2019."

Cash on hand at the end of March was down to \$1.4 billion. That compared with \$1.7 billion at the end of December.

The company's content costs increased by 11% to \$836 million in the first quarter. For the near future, the company threw out a crumb of comfort as the effects of the coronavirus outbreak begin to diminish. "With content production back up and running since late March, iQIYI is gradually recovering toward the normal level, and short-term uncertainties on future pipeline caused by the pandemic is fading away, and the content pipeline for the second quarter is very strong." Content highlights in the January-March period included the fifth and final season of "iPARTMENT," viewed by over 170 million users by the time its finale was aired, and girl group talent show "Youth With You Season 2," where K-pop star Lisa from Blackpink was one of the mentors. China protests at support of U.S. and others for Taiwan at WHO.

The Chinese envoy to the World Health Organization (WHO) on Tuesday denounced the support shown by the United States and others to Taiwan during its annual ministerial assembly and said that was undermining the global response to the pandemic.

Taiwan lobbied hard to be included as an observer at the two-day virtual meeting and received strong support from the United States, Japan and others, but says it was not invited due to opposition from China"There are still a few countries determined to plead for Taiwan authorities, seriously violating relevant U.N. and WHO resolutions and undermining global anti-epidemic efforts," Chen Xu, the Chinese ambassador, told the virtual assembly.

"China solemnly protests and firmly opposes this behaviour."

Taiwan is locked out of U.N. organisations such as the WHO due to the objections of China, which considers it a breakaway province with no right to the trappings of a sovereign state.

The WHO says it is bound by U.N. protocol, and that Taiwan can only be included in WHO meetings if the members make a decision to do so.

Several delegates protested at Taiwan's exclusion in their speeches, including senior U.S. diplomat Howard Solomon in closing remarks as well as Haiti and Paraguay.

Shortly after the U.S. speech, Chen dismissed the remarks as "political hype", saying: "This conduct is not acceptable."

Taiwan's president, Tsai Ing-wen, is due to say on Wednesday that

the island will continue to strive to participate actively in global bodies despite the setback at the WHO.

# CONCLUSIONS

India has launched a full-scale investigation against China's Wuhan Institute of Virology. The Indian government has ordered an inquiry into a study conducted in the Northeastern state of Nagaland (close to China) by researchers from the U.S., China and India on bats and humans carrying antibodies to deadly viruses like Ebola.

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The real concern here is whether the rest of the world has the courage to demand a real and thorough investigation. We need to be fearless in this demand and not allow "economic interests" to play a coy and dishonest game of denial. We need an honest inquiry. We need it now.

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# REFERENCES

- Castro ML, Barbosa MM, Barbosa JA, de Almeida FR, de Magalhães Esteves WA, Tan TC, et al. Value of right ventricular strain in predicting functional capacity in patients with mitral stenosis. Int J Cardiol. 2013;168(3):2927-2930.
- Zeb S, Ashraf T, Hashim M, Rizvi SN. Regression of right ventricular systolic pressure after successful percutaneous mitral commissurotomy in patients with isolated severe mitral stenosis. Pak J Med Sci. 2017;33(3):529.
- 3. Kumar V, Jose VJ, Pati PK, Jose J. Assessment of right ventricular strain and strain rate in patients with severe mitral stenosis before and after balloon mitral valvuloplasty. Indian Heart J. 2014;66(2):176-182.
- Younan H. Detection of subclinical right ventricular systolic dysfunction in patients with mitral stenosis by two dimensional strain and strain rate imaging. Egypt Hear J. 2015;67(1):47-53.
- Kammoun I, Marrakchi S, Jebri F, Khedher N, Mrabet A, Kachboura S. Right ventricular systolic function in patients with rheumatic mitral stenosis. Int J Curr Res 2015;7(12):23692-23695.
- Felix AD, Siciliano AP, Belém LH, Azevedo FS, Xavier SS, Lorenzo AR, et al. Echocardiographic Assessment of Right Ventricular Function by Two-Dimensional Strain In Patients with Left-Sided Valvular Heart Disease: Comparison with Three-Dimensional Echocardiography. Int J Cardiovasc Sci.;31(6):630-642.
- 7. Lang RM, Badano LP, Mor-Avi V, Afilalo J, Armstrong A, Ernande L, et al. Recommendations for cardiac chamber quantification by echocardiography in adults: an update from the American Society of Echocardiography and the European Association of Cardiovascular Imaging. Eur Heart J Cardiovasc Imaging. 2015;16(3):233-271.
- 8. Lee JH, Park JH. Strain analysis of the right ventricle using two-dimensional echocardiography. J Cardiovasc Imaging. 2018;26(3):111.
- Tanboga IH, Kurt M, Bilen E, Aksakal E, Kaya A, Isik T, et al. Assessment of right ventricular mechanics in patients with mitral stenosis by two dimensional deformation imaging. Echocardiography. 2012 ;29(8):956-961.

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- Baumgartner H, Hung J, Bermejo J, Chambers JB, Evangelista A, Griffin BP, et al. Echocardiographic assessment of valve stenosis: EAE/ ASE recommendations for clinical practice. J Am Soc Echocardiogr. 2009;22(1):1-23.
- Yildirimturk O, Helvacioglu FF, Tayyareci Y, Yurdakul S, Aytekin S. Assessment of right ventricular endocardial dysfunction in mild to moderate mitral stenosis patients using velocity vector imaging. Echocardiography. 2012;29(1):25-33.
- 12. Harvey RM, Ferrer I, Samet P, Bader RA, Bader ME, Cournand A, et al. Mechanical and myocardial factors in rheumatic heart disease with mitral stenosis. Circulation. 1955;11(4):531–551.
- Mittal SR, Goozar RS. Echocardiographic evaluation of right ventricular systolic functions in pure mitral stenosis. Int J Cardiovasc Imaging. 2001;17(1):13-18.
- 14. Ozdemir AO, Kaya CT, Ozdol C, Candemir B, Turhan S, Dincer I, et al. Two dimensional longitudinal strain and strain rate imaging for assessing the right ventricular function in patients with mitral stenosis. Echocardiography. 2010;27(5):525-533.