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HOME REMEDIES, DIETARY AND LIFESTYLE CHANGES DURING COVID-19 PANDEMIC

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ABSTRACT: December 2019 has become one of the most surprising days in the whole world in light of the flare-up of a most infectious sickness brought about by novel Covid or Severe Acute Respiratory Syndrome Corona virus 2 (SARS-CoV-2). This study is conducted to assess the benefits of the use of home remedies to prevent the cause of Covid-19 and evaluate the assessment of dietary changes and physical activity in the prevention of Covid-19. A questionnaire-based online survey is conducted using Google forms consisting of multiple-choice questions about home remedies, lifestyle and dietary changes made by the people during this pandemic. These home remedies included using different types of herbal preparations, steam inhalation, physical exercise and OTC medications for prophylaxis. Questions likewise included about being infected by Coronavirus-19(during first wave or second) and their recovery period, additionally collected their viewpoint for changes made, for example how much they are useful in the prevention of the attack and whenever encountered any undesirable impacts. Total responses were 210, among which 121(57.6%) responses were from females and 89(42.4%) from males. 65 people tested Covid positive (42 during the first wave and 23 during the second wave). 118(56.2%) of people think these changes are very beneficial. (Rated 4 and 5 out of 5 points). From our survey, we concluded that different herbal preparations of their composition, which they thought are helpful, and steam inhalations have been used. Rating regarding the use and effectiveness was also found to be average. Further studies are needed to prove and provide clear evidence about adverse and side effects associated with the use of herbal products.

INTRODUCTION: December 2019 has become one of the most surprising days in the whole world in light of the flare-up of a most infectious sickness brought about by novel Covid or Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2). The spread of the illness is excessively fast to the point that simply in 2 months, the vast majority

of the nations on the planet got influenced by this infection and announced a noticeable number of cases. Recognizing the sickness's speedy extended, WHO has pronounced it as pandemic on 11th March 2020.

The disease has led to huge morbidity and mortality. India being the second most highly populated country globally, the extent of the spread of the disease is salient and is the second highly affected country globally. Since, the outbreak, our health care system is constantly trying to discover a proper treatment for the cure and prevention of the disease. Although there are different vaccines available, none of them is found to be 100%

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effective. The health care sector and the other sector of people, including every individual in the world, is keeping their possible efforts to stop the spread of the disease and get affected by it. As per WHO keeping up with physical separating, wearing a mask, keeping rooms very much ventilated, staying away from swarms, cleaning hands, and hacking into a bowed elbow or tissue are a portion of the new type which pretty much every individual on the planet needs to create during this pandemic alongside doing actual exercise, keeping a sound eating regimen¹.

Also, people adopted different home remedies and took multivitamin supplements as prophylactic measures to protect themselves from being affected. India being a homeland of various herbal and natural products has an abundant plants, herbs and spices such as *Allium sativum* (garlic), *Tunospora cordifolia* (Giloy), *Ocimum barilium* (Tulasi) clove, cinnamon, ginger, black pepper, turmeric, black cumin, amla, aloe vera, neem, and vitamin c supplements like citrus, oranges which are known as immune boosters and have antiviral properties². Different combinations of these products are used, and various formulations are made in the form of powders and drinks and taken as homemade remedies. These items are experimentally demonstrated to have a decent restorative activity against acute respiratory tract infections(pulmonary fibrosis, diffuse alveolar damage, pneumonia and acute respiratory distress syndrome), lung and kidney injury, all of which are found to be manifestations associated with COVID-19 infection³. Along with the use of homemade herbal preparation, people are adopting physical exercises like walking, jogging, yoga, pranayamam (breathing exercise) to be fit and physically active. Prophylactic medications like Zinc, B complex, vitamin C, Calcium, and multivitamins are also taken by most people. Steam inhalation is also one of the activities that are kept in practice. Inhaling the vapours of boiled ginger, lemongrass, mango leaves, guava leaves, turmeric, zandubalm, Zindatilismath is mostly seen. Many dietary changes like adding pulses, dry fruits, raw vegetables, fruit juices, eggs, fish, and meat are also done by most people.

Herbs and Spices: There is presently no proof to help utilize natural enhancements to prevent or cure

COVID-19¹. But these products have antiviral, antioxidant, anti-inflammatory, immunomodulatory properties with therapeutic benefits against viral or chemically induced fibrosis, oxidative stress, inflammatory response and acute respiratory infection, which are characteristic manifestations of COVID-19 and also helps in boosting immunity³. Some of the most used and easily available herbs, plants and spices are turmeric, citrus, amla, ginger, black pepper, aloe vera, clove, cinnamon, neem, giloy, lemongrass, garlic, mint, guava leaves, bay leaves, coriander, curry leaves, cumin.

Turmeric (*Curcuma longa*): It is a rhizome and herbaceous perennial plant of the family Zingiberaceae (ginger family)⁴. Its active compounds are 3 types of curcuminoids: Curcumin, demethoxycurcumin, bisdemethoxycurcumin, and has 34 essential oils, among which turmerone, germacrone, atlantone, zingiberene are found to be very important⁵. It has strong antioxidant properties resembling ubiquinols and other phenols⁶, antifungal, antibacterial, and anti-inflammatory properties, and has wide therapeutic benefits against various respiratory conditions like asthma, bronchial hyperactivity, allergy, liver disorders, anorexia, running nose, cough, sinusitis⁷. The common therapeutic dose is 15g per day of turmeric powder⁶. Side effects like diarrhea, headache, rash, and yellow stools are seen⁴. Thus being an abundant source of different pharmacological activities addition of nutritional supplements like vitamin c and zinc with turmeric has shown remarkable results in boosting natural immunity and protect against coronavirus infection⁸.

Ginger (*Zingiber officinale*): It is a rhizome belonging to the family Zingiberaceae. Its major components are gingerols, shogaols, paradols. It has antioxidant, anti-inflammatory, antinausea, anticarcinogenic properties and is found to be effective against oxidative damage, inflammation, nausea/vomiting, cancer, asthma, dementia, diabetes, ulcerative colitis, cardiovascular disease, platelet aggregation^{9, 10}. 250 to 1g of dried powder of ginger is recommended, but its excessive use may lead to adverse effects like heartburn, diarrhea irritation in the mouth¹¹. Because of its valuable impacts against pneumonic issues, which are the fundamental indications found in patients

contaminated with Covid-19, it is viewed as taken to treat the side effect yet isn't the fix³.

Black pepper (*Piper nigrum*): It is a perennial climbing vine belonging to the family Piperaceae containing major components like piperine, volatile oils, starch, and fiber¹³. It has antihypertensive, antioxidant, antitumor, anticonvulsant, antidiarrheal, antispasmodic, immunomodulatory, antibacterial, antifungal properties¹⁴. Though it has miscellaneous properties and health benefits, there is no evidence that is eating pepper protected people from the new coronavirus¹. But its active compound, piperine, enhances the bioavailability of many drugs and phytochemicals by increasing their absorption³.

Clove (*Syzygium aromaticum*): It is a medium-sized tree belonging to the family and is rich in phenolic compounds like eugenol, eugenol acetate, and gallic acid. It has a good antioxidant, antimicrobial and anti-inflammatory activity¹⁵. It is used as a carminative and cures digestive problems such as flatulence, loose motions, indigestion, nausea, gastric irritability¹⁶. Along with these, it has high immune-boosting power and might not help prevent Coronavirus infection but can help boost immunity and treat associated symptoms¹⁷.

Cinnamon (*Cinnamomum verum*): It is a spice derived from the bark also called Ceylon cinnamon, belonging to the family Lauraceae. It contains vital components oils such as cinnamaldehyde, cinnamic acid and cinnamate, and other oils¹⁸.

It has rich therapeutic properties like antioxidant, anti-inflammatory, antidiabetic, antimicrobial, anticancer and lipid-lowering properties.

In addition, it is useful for neurological disorders like Parkinson's and Alzheimer's disease¹⁹. But too much intake can lead to liver disorders and also affect the coagulation activity of anticoagulant drugs. Nevertheless, as it is rich in antioxidant properties, it helps boost our immune system²⁰.

Cumin (*Cuminum cyminum*): It is a flowering plant of the Apiaceae family, commonly known as Jeera in India. It has high dietary fibers, essential oils, and nonvolatile extracts. It is rich in Thiamin (Vit B2), Niacin (Vit B3), Vit E, Vit C, Calcium, Iron, Magnesium, etc Potassium and Zinc.

It has prominent antioxidant activity and its nonvolatile also has good free radical inhibition activity²¹. It has therapeutic benefits against obesity, diabetes, irritable bowel syndrome, stress, and constipation. Excessive use may result in side effects like nausea, dizziness and stomach pain and people who take medications for diabetes should use cumin with caution as it changes the blood sugar levels²².

Neem (*Azadirachta indica*): It is a fast-growing tall tree found in surplus in tropical and semitropical regions belonging to the family Meliaceae. Contains active components like azadirachtin, Nimbin, nimbanene, ascorbic acid, amino acids, nimbiolide, nimbandiol. It has antioxidant and free radical scavenging properties and health benefits such as anticancer, antidiabetic, neuroprotective, immunomodulatory effect, antibacterial, antimalarial, hepatoprotective, and wound healing effects²³. Neem leaves extract powder, or crude neem leaves, might inhibit the COVID 19 virus by preventing it from replicating and boosting immunity. Anyway, further tests should have been done to consider them in contrast to COVID 19 for clinical use²⁴.

Mint (*Mentha piperita*): It is one of the oldest culinary herbs also known as mentha. There are many kinds of mint plants falling under the same genus *Mentha*; among them peppermint and spearmint are most commonly used²⁵. They are rich in Vit A, C, B-complex, Iron, potassium, manganese, methanol, and essential oils. It helps treat asthma, digestion, headache, stress, depression, nausea, common cold, obesity, and oral care²⁶.

Tulasi (*Ocimum tenuiflorum*): It is an aromatic perennial plant commonly known as holy basil belonging to the family Lamiaceae. It consists of oils and several organic chemical compounds such as alcohols, aldehydes, ethers, esters, hydrocarbons, and phenols²⁷.

It has pharmacological actions such as adaptogenic, metabolic, immunomodulatory, anticancer, anti-inflammatory, antioxidant, hepatoprotective, antimicrobial, antidiabetic effects²⁸. Docking studies revealed that phytochemicals of tulsi can inhibit the main protease of SARS-COV-2².

Lemon (*Citrus limon*): It is a small tree of the family Rutaceae. It is rich in Vitamin C and contains smaller amounts of B vitamins, particularly thiamin, riboflavin, and niacin²⁸. Vit C, the major component of lemon, has immunomodulatory activity.

It acts by accumulating in the neutrophils and intensifies phagocytosis. It has therapeutic benefits in pulmonary fibrosis, sepsis, and pneumonia which are the most observed symptoms in COVID 19 patients².



FIG. 1: TYPES OF HERBS AND THEIR ADVANTAGES

Liquid Preparations: Different kinds of liquid preparations like lime water, honey water, turmeric powder with milk, green tea, herbal tea, kadha, fruit and vegetable juices, and hot water are being taken by most people, especially Indians.

Kadha: It is one of the herbal drinks made of different herbs which include tulsi, turmeric, black pepper, clove, ginger, cardamom, lemon, which are taken in measured quantities and mixed with water and consumed. Honey or jaggery is also added to give it a sweet taste. As it is a mixture of different

herbal preparations with many phytochemicals having an abundant therapeutic property, consumption of Kadha can decrease the inflammatory response, boost up the immunity and thus reduce the risk of COVID 19 infection²⁹. **HOT WATER:** There is no scientific evidence that says drinking hot water can kill the virus or cure the disease³⁰. But it can soothe the sore throat, keep hydrated, improve circulation, remove toxins from the body and relieve congestion by loosening mucous³¹.

Steam Inhalation: It is one of the old practices followed by many people to relieve nasal congestion in several respiratory diseases. There are different types of inhaled substances, such as turmeric, zandubalm, Zindatilismath, steam capsules, and lemon juice, or just the vapours of hot water. There are many clinical benefits of steam inhalation like it helps treat respiratory congestion by facilitating removal of mucous or other secretions from the upper respiratory tract, decreases the chances of headache, releases the endorphin and reduces stress, increases the blood circulation, and helps relax muscles, reduces the cholesterol levels in the blood, inflammation in the upper airway, helps relieve nasal symptoms such as nasal blockage, itching, facial pain, sneezing, running nose, facilitates breathing and also reduces cough. Thus, it can help in the speedy recovery of Covid-19 by relieving respiratory symptoms³². However, WHO or some other clinical social orders didn't give any proposals about the utilization of steam inhalation in Covid-19 patients because of the absence of logical proof, also, the reports of scalp burn cases were expanded during the pandemic particularly in children³³.

Dietary Changes: Being healthy during this dreadful pandemic should be the supreme concern to get the least chances of being affected. Therefore, following a healthy diet by adding vitamin and mineral-rich food into the diet is important. This food includes whole grains like maize, rice, wheat, legumes and pulses such as lentils, beans, fresh and raw vegetables, and fruits, animal food like eggs, meat, fish and dairy products. Cutting off the excess salt and sugar, minimizing the fat and cholesterol-rich food is beneficial.[1] Intake of dietary supplements rich in Vitamin C, D, zinc, selenium, is recommended to individuals who are deficient and at risk of respiratory infection³⁴.

Prophylactic Medications: OTC medications like vitamin C, B complex, Iron supplements, Zinc, Calcium, Multivitamin are being taken by people as prophylaxis. But unnecessary intake of these medications may lead to unwanted effects.

Physical Exercise: Regular physical exercises like Yoga, pranayamam, walking, jogging; stretches or gym is very beneficial to every group of individuals

during this pandemic to be active and fit. As these are the times when we all are meant to stay at home and do our daily routine, people lack physical movements. Hence taking some time for physical activities can be beneficial to the body.

WHO has Recommended the Amount of Physical Activity for Each Group of the Individual: Infants under 1 year of age: should do 30 minutes of physical activity by lying in the prone position and by doing a floor-based play.

Children Under 5 Years of Age: Should do a minimum of 60 minutes or a maximum of 180 minutes of any physical activity. Children and youths aged 5-17 years should complete an hour of any actual exercise and proactive tasks that reinforce the muscle and bone no less than 3 days per week. Adults over 18 years of age: ought to complete 150 min of any actual exercise. For extra advantages ought to do proactive tasks that might reinforce the muscles no less than 2 times each week¹.

MATERIAL AND METHODS: The main aim of the survey is to evaluate the use of home remedies, dietary and lifestyle changes during the Covid-19 and the objectives are to assess the benefits of the use of home remedies to prevent the cause of Covid-19, to evaluate the assessment of dietary changes and physical activity in the prevention of Covid-19 and to assess the extent to which these changes are beneficial.

Study Design: A cross-sectional online survey.

Study Duration: March 2021 to August 2021.

Study Sample: 210.

RESULTS: An online questionnaire-based survey was conducted, consisting of home remedies, physical exercise, steam inhalation, dietary related multiple-choice questions. Questions also included about being affected by Covid-19 (during first wave or second) and their recovery period, also included their opinion on changes made, *i.e.*, to what extent they are helpful in the prevention of the attack and if they experienced any unwanted effects. Total responses were 210, 121 (57.6%) responses were from females and 89 (42.4%) from males. 65 people tested Covid positive (42 during the first wave and 23 during the second wave).

118(56.2%) of people think these changes are very beneficial *i.e.*, rated 4 and 5 out of 5 points. Among 210 responses, maximum responses were from the age group of 21 to 30years (48%) and 41 to 50 years (19%).

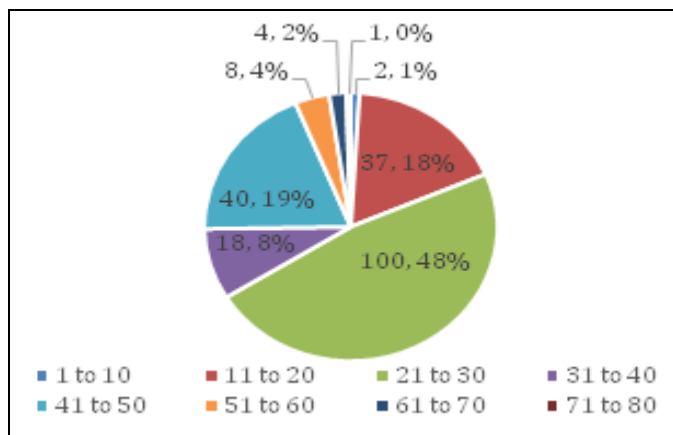


FIG. 2: PIE DIAGRAM OF AGE DIVISION

Among 210 responses, maximum responses were from the age group of 21 to 30years (48%) and 41 to 50 years (19%).

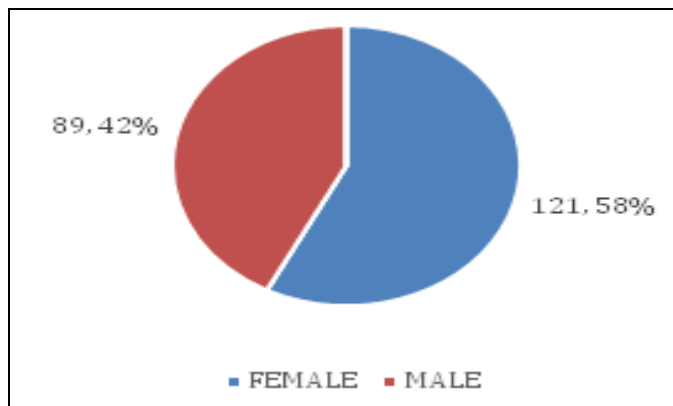


FIG. 3: PIE DIAGRAM OF RESPONSES BASED ON GENDER

Female responses are more than the male responses that are 121(58%) and 89(42%), respectively.

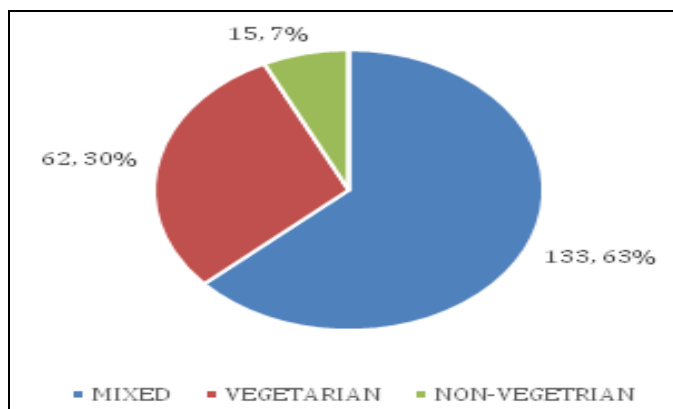


FIG. 4: PIE DIAGRAM OF DIETARY HABITS

In the diet-wise categorization of responses, the maximum number of responders takes a mixed diet *i.e.*, 63 (133).

TABLE 1: TABLE SHOWING DIETARY CHANGES

S. no.	Type of dietary supplement	No of Responses	Percentage
1	Green leafy vegetables	149	71%
2	Dry fruits	154	73.3%
3	Eggs	142	67.6%
4	Meat	101	48.1%
5	Fruits	160	76.2%
6	Sprouts, groundnuts, pulses (protein-rich food)	68	32.4%
7	Raw vegetables	44	21%

The above table shows the dietary changes made by all the responders during COVID-19, among which the majority of them added fruits (76.2%), dry fruits (73.3%), green leafy vegetables (71%), and eggs (67.6%). Other specific responses included ragi java (Finger millet), pulses oats, and milk.

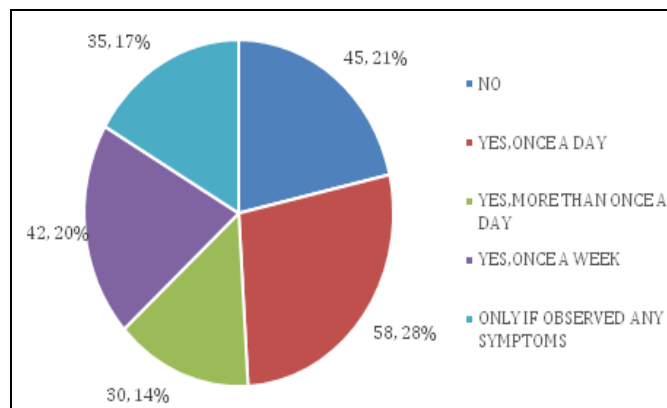


FIG. 5: PIE DIAGRAM SHOWING USE OF STEAM INHALATION

The above bar diagram shows the percentage of the responders performing steam inhalation and found that only 20% (45) do not and 28% (58) perform it once a day. Among the different types of inhaled substances, it was found that 78(38.8%) of the responders are inhaling the vapors of Zandullam or Zindatilismath and also some other specific inhaling substances including neem leaves, eucalyptus.

The above bar diagram shows the percentage of responses to the unwanted effects if experienced. Only 5 (2%) members have experienced unwanted effects, including burning sensation and lung damage due to excess inhalation.

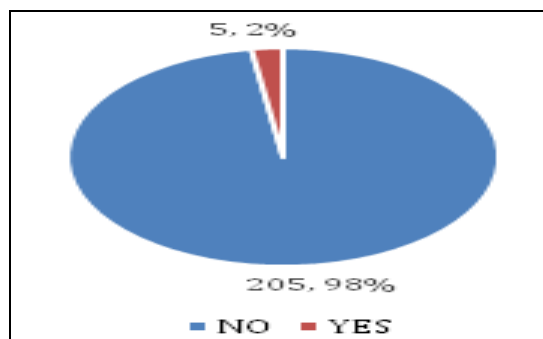
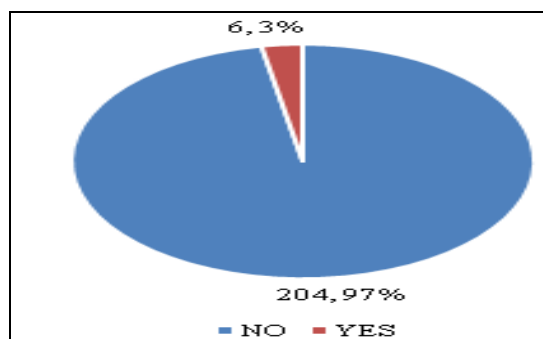
TABLE 2: TABLE SHOWING PERCENTAGES OF TYPE OF STEAM INHALATIONS USED

S. no.	Types of inhaling the substance	No of Responses	Percentage
1	Only hot water	50	24.9%
2	Hot water with turmeric powder	56	27.9%
3	Hot water with Zandubalm or Zindatilismath	78	38.8%
4	Steam capsule with hot water	63	31.8%
5	Lemon juice with hot water	11	5.5%

TABLE 3: TABLE SHOWING USE OF LIQUID PREPARATIONS

S. no.	Liquid preparations	No of Responses	Percentage
1	Decoction	03	1.4%
2	Regular tea	79	37.6%
3	Turmeric powder and milk	55	26.2%
4	Citrus juice	39	18.6%
5	Lemon and honey in water	61	29%
6	Hot water	104	49.5%
7	Black tea	09	4.9%
8	Fruit juices	54	25.7%
9	Amla juice	04	1.9%
10	Herbal tea	61	29%
11	Alovera juice	01	0.5%
12	Green tea	34	16.2%
13	None	11	5.2%

The above table categorizes the percentage of different liquid preparations used by the responders. Most of them included hot water and regular tea intake, which are 104(49.5%) and 79(37.6%), respectively. Also, specific drinks like ORS, tulsi, and clove turmeric tea are being taken by a few responders.

**FIG. 6: BAR DIAGRAM SHOWING PERCENTAGE OF RESPONSES TO UNWANTED EFFECTS****FIG. 7: BAR DIAGRAM SHOWING PERCENTAGE OF RESPONSES TO UNWANTED EFFECTS CAUSED DUE TO LIQUID PREPARATION USE**

The above bar diagram shows the percentage of responses to the unwanted effects experienced after taking drinks and found that only 6(3%) members experienced unwanted effects like acidity, and burning sensation in GI.

TABLE 4: TABLE SHOWING PHYSICAL EXERCISES INCLUDED

S. no.	Type of physical activities	No of Responses	Percentage
1	Walking or jogging	135	64.3%
2	Yoga	33	15.7%
3	Meditation	27	12.9%
4	Pranayamam	29	13.8%
5	Gym	14	6.7%
6	None	40	19%

The above table is about physical exercise, which shows that 135(64.3%) are doing regular walking or jogging and 40(19%) members are doing none. Also, specific responses included stretches, Surya namaskar. The above table shows the percentage use of different prophylactic medications and found that a maximum number of responders did not take any medications *i.e.* 107(51.2%) and 83(39.7%) responders are taking Vitamin C.

TABLE 5: TABLE SHOWING USE OF OTC MEDICATIONS

S. no.	Medications	No of Responses	Percentage
1	Vitamin C	83	39.7%
2	Multivitamin	59	28.2%
3	B. Complex	29	13.9%
4	Zinc	31	14.8%
5	None	107	51.2%

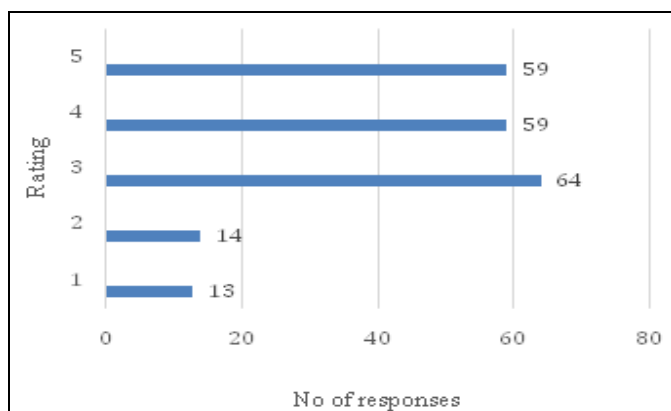


FIG. 8: BAR DIAGRAM SHOWING THE RATING OF EFFECTIVENESS

The above bar diagram shows the rating given by all the responders about the benefits of using home remedies and dietary and lifestyle changes against Covid-19. Among them, a maximum number of 64(30.5%) responders rated 3 out of 5.

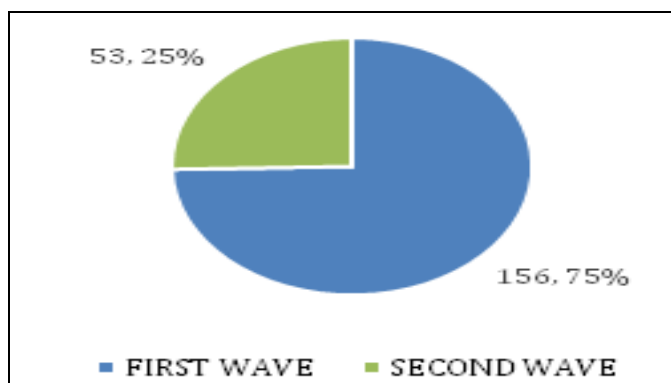


FIG. 9: PIE DIAGRAM SHOWING THE PERCENTAGE OF USE OF HOME REMEDIES DURING 1ST AND 2ND WAVE

The above figure shows the period during which responders started following remedies and found that the majority of them *i.e.*, 156(75%) started using from the first wave.

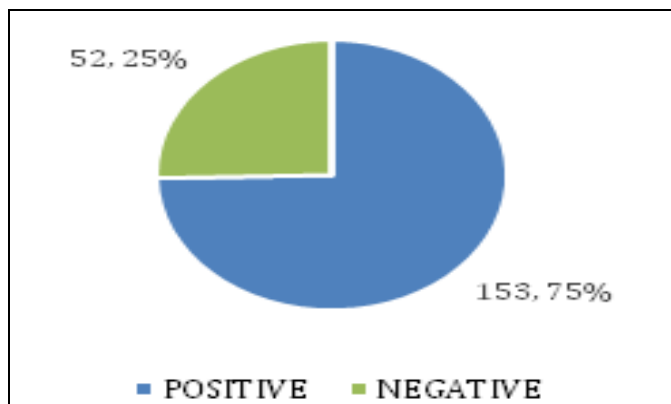


FIG. 10: PIE DIAGRAM SHOWING THE PERCENTAGE OF RESPONDERS WHO TESTED POSITIVE

The above figure shows that 75% of the responders tested positive for Covid-19.

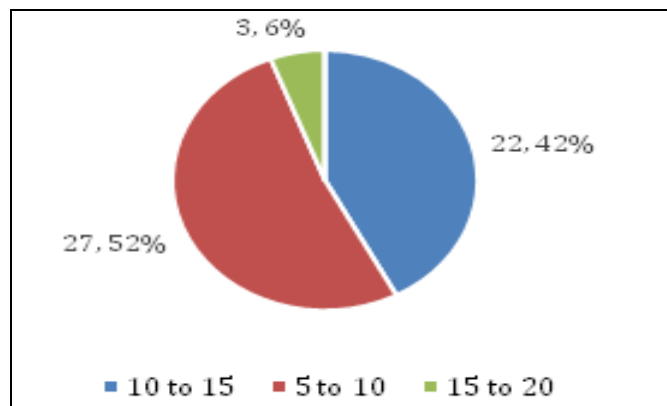


FIG. 11: PIE DIAGRAM SHOWING THE RECOVERY PERIOD

The above figure shows that among the total responders who tested positive for Covid-19, the maximum number recovered in 5-10 days.

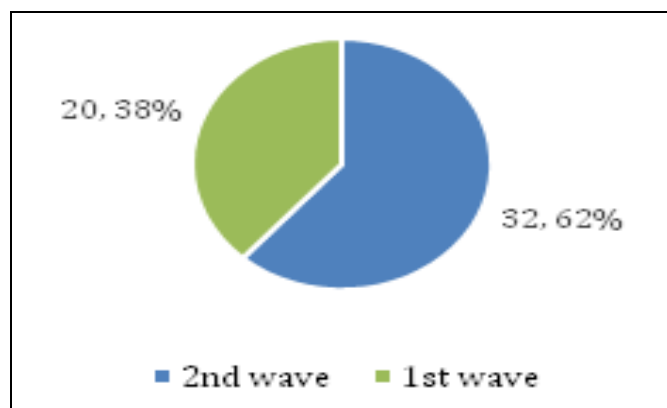


FIG. 12: PIE DIAGRAM SHOWING THE PERCENTAGE OF PEOPLE WHO TESTED POSITIVE DURING 1ST AND 2ND WAVE

The above figure shows that the majority of responders tested positive for Covid-19 during the second wave

DISCUSSION: WHO declared that maintaining a healthy diet is of utmost importance during this Covid-19 to boost immunity¹. It can also help reduce the possible attack of pneumonia and help maintain gut and lung microbiomes³⁵. For ages, Indians have been using natural products as immune boosters and are a major reason for the low mortality rate in the Indian population during this pandemic; using spices and herbs like black pepper, cinnamon, and turmeric basil are having a prominent role against viral infection². Coronavirus primarily attaches to the respiratory system, and the damage begins during 14-20 days

of incubation, during which taking natural or herbal preparations would help prevent further infection and stabilize initial symptoms and also acts as prophylaxis in people who are at risk of developing Covid-19 like elderly and people with comorbidities³. Though these herbal products have been kept in use for several years in India, there is no proper examination of adverse or unwanted effects associated with them. The use of these products should be evidence-based to ensure patient safety^{36, 37}. Ayurveda, Yoga, and Meditation can help bring a positive environment during the isolation period³⁸. Steam inhalation is a cheap and easily available option for the prevention of Covid-19 and associated upper respiratory tract infection³². But there is no sufficient evidence to support the use, and these steam inhalations resulted in increased scalp burn cases, especially in children³³.

CONCLUSION: From our study, we inferred that everybody during this pandemic circumstance is keeping their potential endeavours and attempting to shield themselves from being attacked by infections. Different herbal preparations of their composition, which they thought are helpful, and steam inhalations are being used. Most of the people did not experience any unwanted effects, but few responses included heart burns, acidity, GI irritations. Despite following different home remedies, doing regular exercises and taking prophylactic medications since 1st wave of the pandemic, people tested positive during the second wave, which clearly says that following home remedies alone cannot protect people from being infected. Rating regarding the use and effectiveness was also found to be average. Further investigations are expected to demonstrate and give obvious proof regarding adverse effects and side effects related to the utilization of herbal products.

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REFERENCES:

1. <https://www.who.int/emergencies/diseases/novel-coronavirus-2019> World health organization.
2. Namita Ashish Singh, Pradeep Kumar, Jyothi and Naresh Kumar: Species and herbs: Potential antiviral preservatives and immunity boosters during COVID-19. *Phytotherapy Research* 2021; 1-13.
3. Sai Manohar Thoda, Venkatesh Balan and Venkatesh Sivaramakrishna: Natural products as home-based prophylactic and symptom management agents in the setting of COVID-19. *Phytotherapy Research* 2020; 34: 3148-3167.
4. Susan J Hewlings and Douglas S. Kalman: Curcumin: A Review of Its Effects on Human Health. *Foods* 2017; (10): 92.
5. <https://en.wikipedia.org/wiki/Turmeric>.
6. Bengmark S, Mesa MD and Gil A: Plant-derived health-the effects of turmeric and curcuminoids. *Nutricion Hospitalaria* 2009; 24(3): 273-281.
7. Sahdeo Prasad and Bharat B. Aggarwal: Turmeric, the Golden spice; *Herbal Medicine: Biomolecular and Clinical Aspects Edition 2*. Chapter 13 from *Traditional Medicine to Modern Medicine* 2011.
8. Yamuna Manoharan, Vikram Haridas and Vasanthakumar KC: Structure Alternative Systematic, Sundaram Muthu, Fathima F. Thavoorullah, Praveenkumar Shetty; Curcumin: A Wonder Drug as a Preventive Measure of COVID-19 Management. *Indian Journal of Clinical Biochemistry* 2020; 35(3): 373-375.
9. Nafiseh Shokri Mashhadi, Reza Ghiasvand, Gholmreza Askari, Mitra Hariri, Leila Dravishi and Mohammad Reza Mofid: Ani-Oxidative and anti-inflammatory effects of ginger in health and physical activity: review of current evidence. *International Journal of Preventive Medicine* 2013; 4(1): 36-42.
10. Ann M. Bode and Zigang Dong: The Amazing and Mighty Ginger; *Herbal Medicine: Biomolecular and Clinical Aspects*. Edition 2 Chapter 7.
11. Brett White: Ginger: An overview. *American Family Physician* 2007; 75(11).
12. Aakanksha Gaur: Black pepper: Additional Information, Encyclopedia Britannica, 2020; <https://www.britannica.com/plant/black-pepper-plant>.
13. Belkheir Hammouti, Mouslim Messali, Mohammad Dhamani and Abdeslam Asehraou: Black Pepper, the 'King of Spices': Chemical composition to applications. *Arabian Journal of Chemical and Environment Research* 2019; 06: 12-56.
14. Dirgha Raj Joshi, Abinash Chandra Shresha and Nisha Adhikari: A Review on Diversified use of the king of spices: Piper Nigrum (Black pepper). *International J of Pharma Sciences and Research* 2018; 5: 4089-4101.
15. Diego Francisco Cortes-Rojas, Claudia. Regina Fernandes de Souza and Wanderley Pereira Oliveira: Clove (*Syzygium aromaticum*): a precious spice; *Asian Pacific Journal of Tropical Biomedicine* 2014; 4(2): 90-96.
16. Parle Milind and Khanna Deepa: Clove: A champion spice. *International Journal of Research in Ayurveda and Pharmacy* 2011; 2(1): 47-54.
17. Healthshots.com/healthyeating/superfoods/sorryfolks,kali mirch and lung can't save you from Covid:<https://www.healthshots.com/healthyeating/superfoods/covid-19-prevention-here-is-the-truth-about-cloves-and-black-pepper/>

18. Gloria Lotha and Shiveta Singh: Cinnamon: Additional Information, Encyclopedia Britannica, 2019: <https://www.britannica.com/plant/cinnamon>
19. Pasupuleti Visweswara Rao and Siew Hua Gan: Cinnamon: A Multifaceted Medical Plant. Evidence-Based Complementary and Alternative Medicine 2014; 1-12.
20. Yvette Brazier; What are the health benefits of Cinnamon, Medical News Today, Jan 2020: <https://www.medicalnewstoday.com/articles/266069#benefits>
21. Muhammad Nadeem and Asad Riaz: Cumin (*Cuminum cyminum*) as a potential source of antioxidants, Pakistan Journal of Food Sciences 2012; 22(2): 101-107.
22. Megan Metropulos: 6 health benefits of Cumin, Medical News Today, Dec 2019: <https://www.medicalnewstoday.com/articles/319562>
23. Mohammad A. Alzohairy: Therapeutic Role of *Azadirachta indica* (Neem) and Their Active Constituents in Disease Prevention and Treatment. Evidence-Based Complementary and Alternative Medicine 2016; 1-11.
24. Shanmuga Subramanian S: Some compounds from neem leaves extract exhibit affinity as high as -14.3 kcal/mol against COVID-19 main protease (Mpro): A Molecular Docking Study. Research square.
25. Webmed.com/diet/health-benefits-mint-leaves#:https://www.webmd.com/diet/health-benefits-mint-leaves#1
26. DTNEXT; The abundant health benefits of mint leaves, 2021.
27. www.britannica.com/plant/holy-basil.
28. Negar Jamshidi and Marc M. Cohen: The Clinical Efficacy and Safety of Tulsi in Humans: A Systemic Review of the Literature, Evidence-Based Complementary and Alternative Medicine 2017; 2017, Article ID 9217567.
29. Maurya DK and Sharma D: Evaluation of traditional ayurvedic kadha for prevention and management of the novel coronavirus (SARS-COV-2) using *in-silico* approach. J of Biomol Structure and Dynamic 2020; 1-16,
30. Lifestyle Desk, Fact checks: Hot-water bath or drinking warm water does not cure COVID-19; The Indian Express; May 2021.
31. [Firstpost.com/health/coronavirus-myth-busted-drinking-warm-water-wont-kill-coronavirus-8178461.html](https://www.firstpost.com/health/coronavirus-myth-busted-drinking-warm-water-wont-kill-coronavirus-8178461.html), <https://www.firstpost.com/health/coronavirus-myth-busted-drinking-warm-water-wont-kill-coronavirus-8178461.html>
32. Santosh Kumar Swain and Smarita Lenka: Steam inhalation in the treatment of the COVID-19 patients: A Review. Universal Journal of Pharmaceutical Research 2021; 13(2).
33. Tristan Marvin Z, Michelle Cristine B Miranda, Sally Jane V. Aro and Ma. E Sterlita V: should steam inhalation be used in the treatment and prevention of COVID-19. Asia Pacific center of Evidence-Based Healthcare 2020, Vertion 1.
34. Christianne de Faria Coelho-Ravagnani, Flavia Compos Corgosinho, Fabiane La Flor Ziegler Sanches, Crla Marques Mala Prado, Alessandro Laviano and Joao Felipe Mota, Dietary recommendations during the COVID-19 pandemic. Nutrition Review 2021; 79(4): 382-393.
35. Amin Gasmi, Salvatore Chirumbolo, Massimiliano Peana, Sadaf Noor, Alain Meuzel, Maryam Dadar and Geir Bjerklunad: The Role of Diet and Supplementation of Natural Products in COVID-19 Prevention Biological Trace Elements Research 2021.
36. Jaykaran Charn, Pankaj Bhardwaj, Siddhartha Dutta, Rimplekhet Kaur, Sunil Kumar Bist, Mohan Dan Detta, Tanuj Kanchan, Dharamveer Yadav, Prasenjit Mitra and Praveen Sharma: Use of Complementary and Medicine (CAM) and Home Remedies by COVID-19 Patients: A Telephonic Survey. Ind J Clin Biochem 2020; 36(1): 108-111.
37. Hamd S. Alyami, Mohamed Orabi AA, Fahad M. Aldhabbah, Hamad N. Alturki, Wejdan I. Aburas, Abdulrahman I. Afayez, Abdullah S. Alharbi, Rawan A. Almasuood and Njood A. Alsuhaobani: Knowledge about COVID-19 and benefits about use of herbal products during the COVID-19 pandemic: A cross-sectional study in Saudi Arabia. Saudi Pharmaceutical Journal 2020; 28: 1326-1332.
38. Raksha Kanoje and Akshay Pargaonkar: Home Remedies for the Elderly in the direction of Protection against COVID-19: An Ayurveda perspective. International Journal of Research in Pharmaceutical Sciences 2020; 11(1): 1167-1170.

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