



Awareness on the possible role of ayurveda as an immunity booster in the covid19 pandemic

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Article History:

Received on: 01 Jul 2020
Revised on: 05 Aug 2020
Accepted on: 09 Aug 2020

Keywords:

Ayurveda,
Covid 19,
Immunity,
Awareness,
Knowledge

ABSTRACT

Covid 19 is pneumonia associated viral infection that originated from Wuhan city in December 2019. The virus appears to be spherical in appearance with proteins called spikes protruding from the surface. Ayurveda plays a vital role in boosting the immunity of our body against the pandemic outbreak covid19. This study was carried out to analyse the awareness of people on Ayurveda being a possible option for boosting our immunity. An online survey was conducted with a self-structured questionnaire using an online survey platform google forms. The link was shared through social media. A total of 100 responses were received. The reactions recorded and were analysed, and statistical analysis was performed. The responses recorded from the participants showed that the participants possess adequate knowledge about the covid19 infection, and they possess sufficient awareness of the possible role of Ayurveda on boosting immunity against covid19. 83.9% of the respondents are aware of the pandemic outbreak covid19, and among them, 59.5% believe that Ayurveda plays a role in boosting immunity against covid19. Around 50% of the participants believe herbs used in Ayurveda are potential inhibitors against covid19. The study conducted concludes that during this pandemic outbreak most of the participants are aware of the origin, cause, mode of the spread and are also aware of the role of Ayurveda in boosting our immunity level.



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ISSN: 0975-7538

DOI: <https://doi.org/10.26452/ijrps.v11iSPL1.2855>

Production and Hosted by

IJRPS | www.ijrps.com

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INTRODUCTION

The most infectious pneumonia associated viral outbreak SARS-COV-2 originated from Wuhan city in China in December 2019. The novel coronavirus was first described in 1966 by Tyrrell and Bynoe, by cultivating the viruses from patients with common colds (Tyrrell and Bynoe, 1966). The virus is named 2019- Ncov by the WHO, the international committee on taxonomy of viruses terms it to be SARS-COV-2. The pandemic global outbreak covid19 is a new human infecting betacoronavirus likely to be originated from the chrysanthemum bats (del Rio and Malani, 2020). The novel virus SARS-CoV-2 is found to cause a type of pneumonia associated problem termed Severe Acute Respiratory Syn-

drome. The virus appears to be spherical and have proteins called spikes protruding from their surface (National Institutes of Health (NIH), 2020). The pandemic outbreak COVID-19 spreads mainly by droplets produced as a result of coughing or sneezing of a COVID-19 infected person. The spread of novel coronavirus occurs through direct close contact with COVID-19 patients within one meter of the infected person, and the rate of spread is enhanced if they do not cover their face when coughing or sneezing. The novel virus also spreads by the droplets surviving on surfaces and clothes for many days. Therefore, touching any such infected surface or cloth and then touching one's mouth, nose, or eyes can transmit the disease. The Hydroxychloroquine, an old drug used for the treatment of malaria, had demonstrated marked efficacy, and it is accepted globally in treating COVID-19 associated pneumonia (Gao *et al.*, 2020). The Ayurvedic medicine kabasura kudineer also proves to be an effective medicine against covid19.

In recent times various studies regarding covid19 origin, prevention methods, correlation of associated topics with coronavirus were conducted, and one among them is the research carried out to understand the connection between cancer and the covid19 condition (Ahad and Gheena, 2016; Gunasekaran and Abilasha, 2016; Prasanna and Gheena, 2016). The recent studies carried out discovered that people who have cancer are more vulnerable to covid19 infection (Sarbeen and Gheena, 2016; Shree, 2019). However, the recent studies also discovered that the aerosol generated in dental procedures reveals that the dental profession is at a high risk of developing viral infection due to enhanced transmission through these large droplets (Sukumaran and Padavala, 2018; Harrita and Santhanam, 2019; Uma, 2020), but potentially oral biopsy procedure done in dentistry is useful in detecting covid19 among smokers by the procedure GS17913 and ACE which are found to be a receptor for the viral outbreak (Krishnan, 2018; Sheriff and Santhanam, 2018). Also the teledentistry has proved to be a trusted source to improve the oral health of people to fight against the infection covid19 (Hannah, 2018; Abitha and Santhanam, 2019; Palati *et al.*, 2020). It is also found that the presence of the covid19 infection can be identified from the gingival crevicular fluid (Manohar and Abilasha, 2019; Palati *et al.*, 2019).

Ayurveda, the traditional Indian system of medicine practised by saints and monks from the Vedic period till date, it originated 3000 years back and in Sanskrit means knowledge or science of life. Many chapters in Ayurveda such as Charaka Samhita, jana-

padodhvimanan explains about the mechanism to fight against epidemic outbreak such as covid19 and the importance of immunity required to fight against the epidemic outbreak (Bhavaya and Gouda, 2014). Ayurvedic medicines such as Rasayana, usage of herbs, hot water and steam inhalation are the possible methods available to cope up with the respiratory illness by enhancing the immunity of our body (Chandran, 2018).

Immunity is a balanced state in multicellular organisms possessing adequate capabilities to fight against any infection, disease or any other allergies. The immune system of a multicellular organism requires all nutrients in the quantities necessary to function correctly (Cordain *et al.*, 2005). The primary aim of this study is to stimulate awareness on the possible role of Ayurveda in boosting the immunity of our body to fights against pandemic outbreak covid19. This survey comprises the general population to understand the awareness, knowledge of Ayurveda used as an aid in the battle against covid19.

MATERIALS AND METHODS

An online survey was conducted with a self-structured questionnaire with a sample size of 100 participants comprising the general population. The questionnaire consists of questions related to socioeconomic data, questions related to recent findings or updates in the prevention or treatment option against covid19, questions that correlate the connection between Ayurveda and immunity of our body to prevent covid19 and finally questions related to facts. The participants were given a short introduction about the traditional medicinal system of India-Ayurveda, and its role in boosting immunity, the importance of immunity level in fighting against covid19 or pandemic outbreaks. The questionnaire was validated in the usual manner. Measures such as the selection of participants randomly, steps to prevent asking irrelevant questions to the participants, placing restrictions over participant population and age groups are taken to minimise the bias occurring in sampling. The questionnaire was designed using the online survey platform "google forms". Descriptive analysis was carried out using the statistical software "SPSS SOFTWARE VERSION 20". The results of the survey was represented in the form of pie charts.

RESULTS AND DISCUSSION

In the current study, Figure 1 depicts that the number of male and female population ratio in the overall survey population was in the percentage of

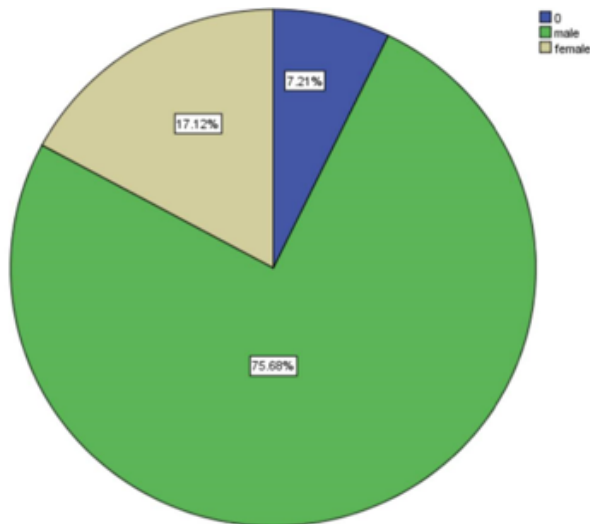


Figure 1: Distribution of study subjects based on gender

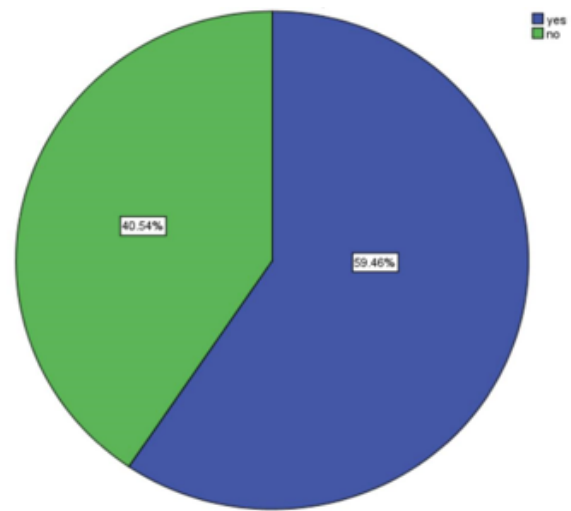


Figure 3: Perception relating to the different Strains of Covid19 among study subjects

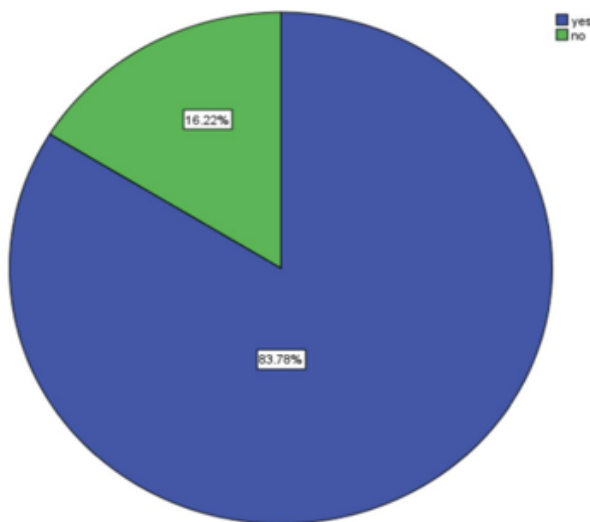


Figure 2: Awareness regarding role of ayurveda in improving immunity among the study subjects

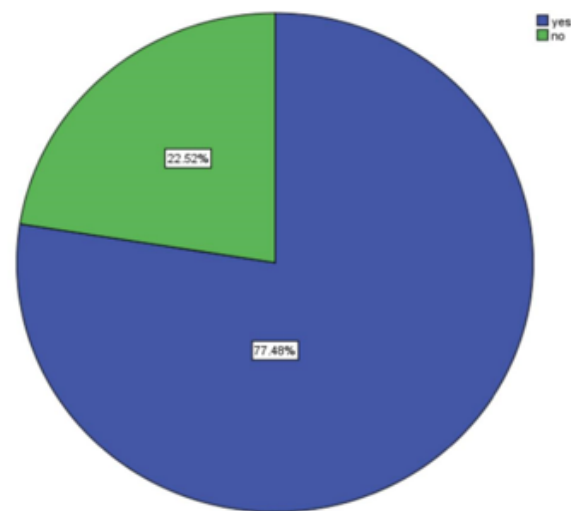


Figure 4: Perception of role of black pepper, cinnamon in boosting immunity among study subjects

78.6% males and 21.4% females. Figure 2 reveals the perception of the respondents about the link between Ayurveda, immunity and covid19, 59.5% of the participants perceive that Ayurveda plays an important role in boosting immunity against the pandemic, and 40.5% disagree. The Figure 3 in the current study depicts about the recent identification related to covid19 to understand whether the population gets updated regularly about the pandemic, 78.2% of the population has proved that they regularly update about the covid19 21.8% unaware of the recent findings. Figure 4 reveals the role of herbs in boosting immunity, and 50% population agree that herbs play a role in boosting immunity, and around 50% of the population disagree. Figure 5 depicts the people's percep-

tion towards the recent Ayurvedic medicine kabasura kudineer against covid19, 50% people agree that Ayurvedic medicine to be an effective step in preventing covid19 and about 35.1% respondents think that this could be a better step and around 9.9% disagree. Figure 6 denotes the effectiveness of Viswanathan sudharana in reducing symptoms of covid19, 63.6% of the population are aware of Viswanathan sudharana, and about 36.4% of people were unaware. The results recorded for Figure 7 in the study reveals about the role of tulsi in boosting immunity and around 58.6% believe that tulsi plays a major role in boosting immunity and around 27.9% respondents think that it might play a role in boosting immunity. A proportion of around 13.5% of the participants was unaware. Figure 8 of the

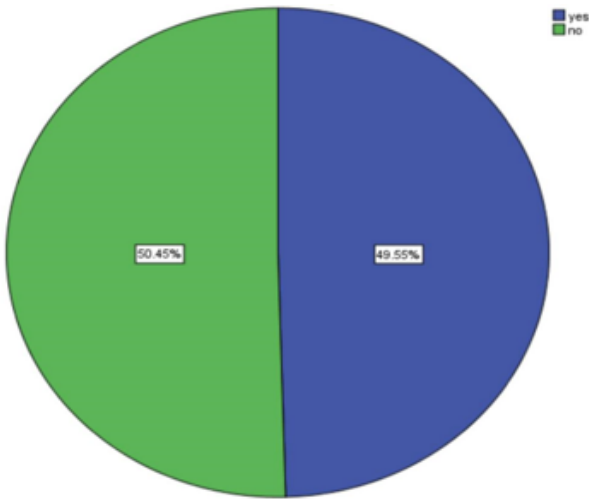


Figure 5: Perception of the effectiveness of Ayurvedic medicine against Covid19

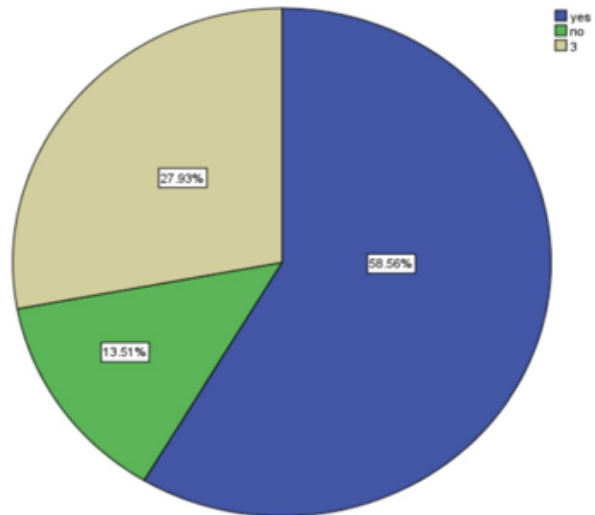


Figure 7: Perception of the role of Tulsi In Boosting Immunity among study participants

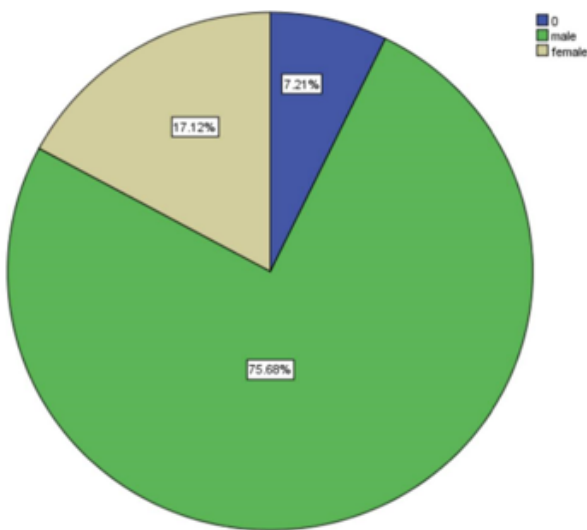


Figure 6: Perception towards role of specific Ayurvedic medicine in treatment against Covid 19

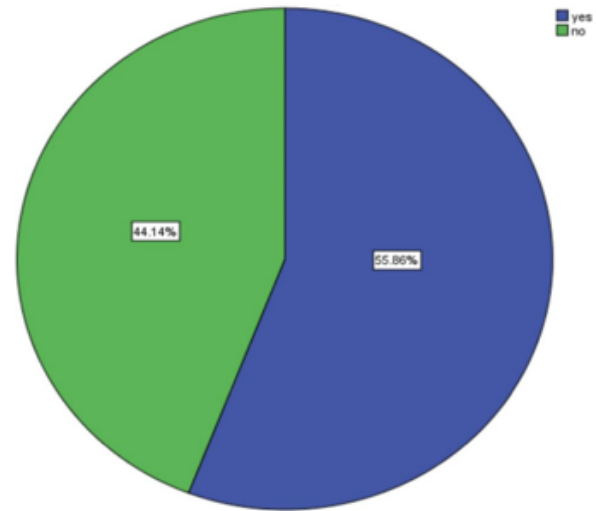


Figure 8: Perception of Importance of Herbs in Preventing Covid19 Infection

study depicts the importance of few herbs in the process of boosting immunity, 55.9% of the participants are aware of these herbs role in boosting immunity and around 44.1% people were unaware. Figure 9 depicts the importance of a few herbs in boosting our immunity, 71.8% aware of the role played in boosting immunity by these herbs and 28.2% of the participants unaware. Figure 10 depicts the chapter janapadodoh vimanam in Ayurveda to fight against covid19, 57.7% are aware of this chapter, and 42.3% of the participants were unaware. Figure 11 depicts the importance of neem ginger in boosting immunity, 71.8% of the participants are aware and around 28.2% unaware. Figure 12 in the study displays the best herbs, which is highly effective in improving immunity 40.9% answered all these might be

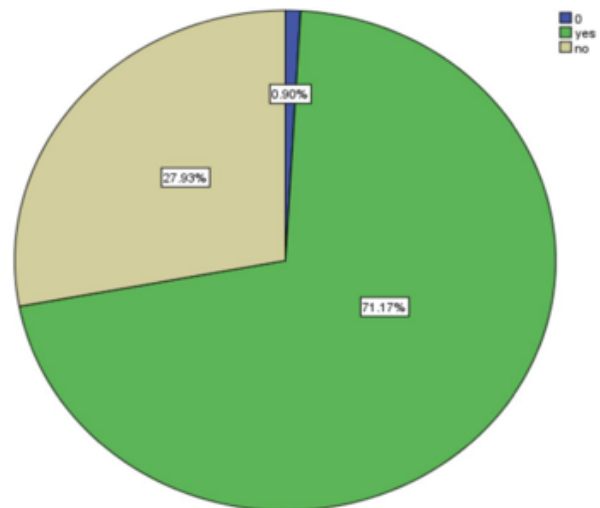


Figure 9: Perception of role of vasa, Miricha in boosting immunity

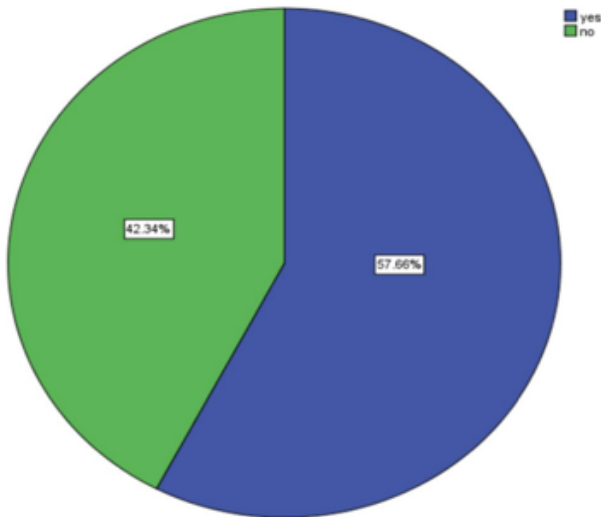


Figure 10: Awareness about Janapadoh Vimanam among respondents

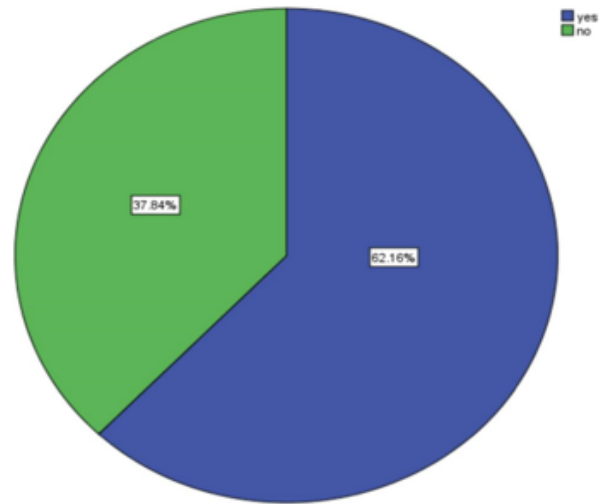


Figure 13: Perception of Connect Between Ayurvedic Herbs and Covid19

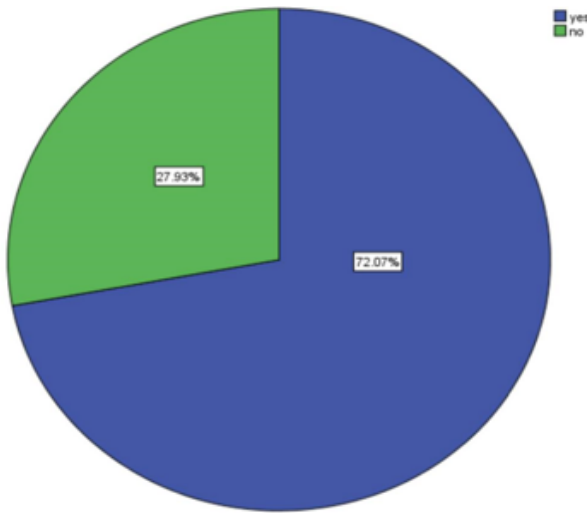


Figure 11: Perception of the role of Neem, Ginger in Boosting Immunity

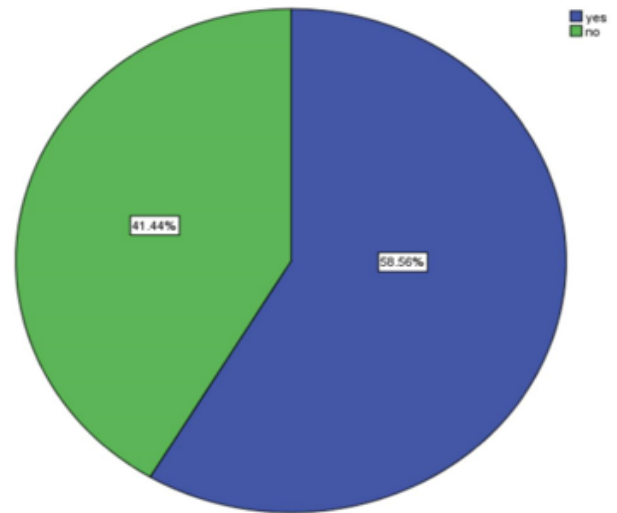


Figure 14: Perception of the Success Rate of Ayurveda in curing Covid19

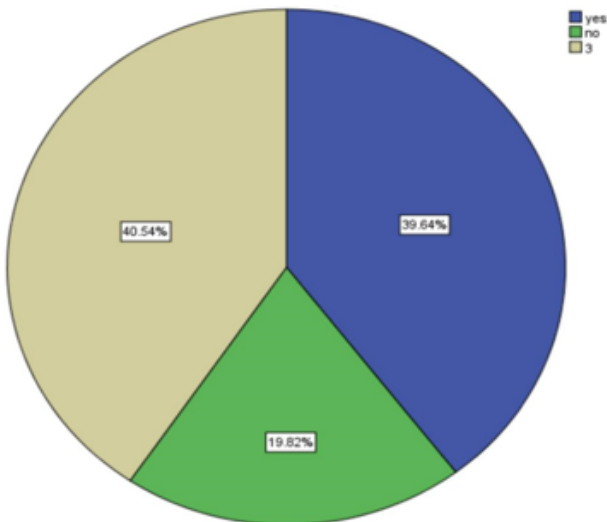


Figure 12: Perception of the effectiveness of Ashwagandha against Covid19

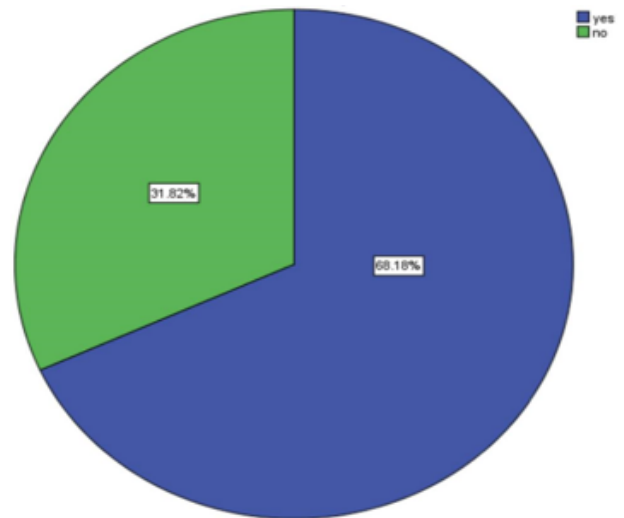


Figure 15: Perception of the steps taken by Government to Prevent Covid19

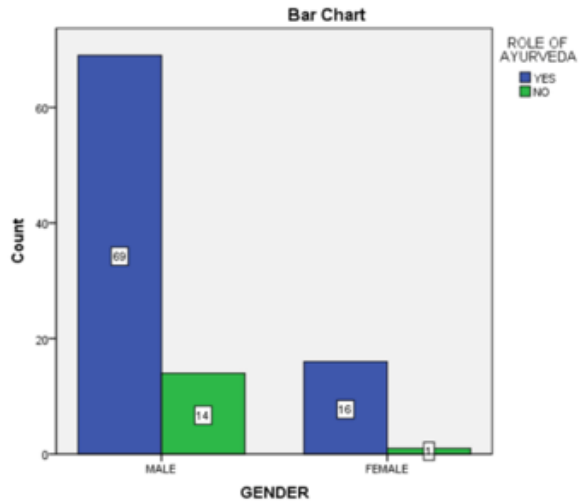


Figure 16: The association by chi square test between gender on the awareness about the role of Ayurveda in prevention against covid19 infection

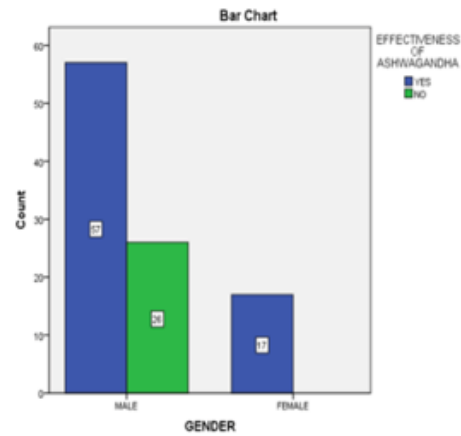


Figure 18: The association by chi square test between gender on the effectiveness of Ashwagandha in prevention against covid19 infection

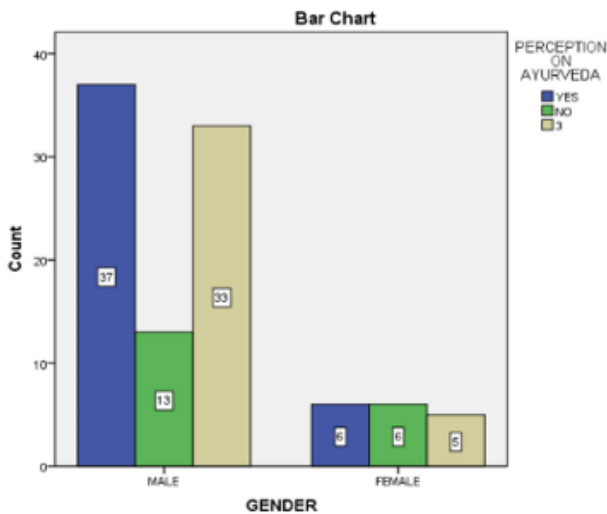


Figure 17: The association by chi square test between gender on the perception of Ayurveda in prevention against covid19 infection among the participants

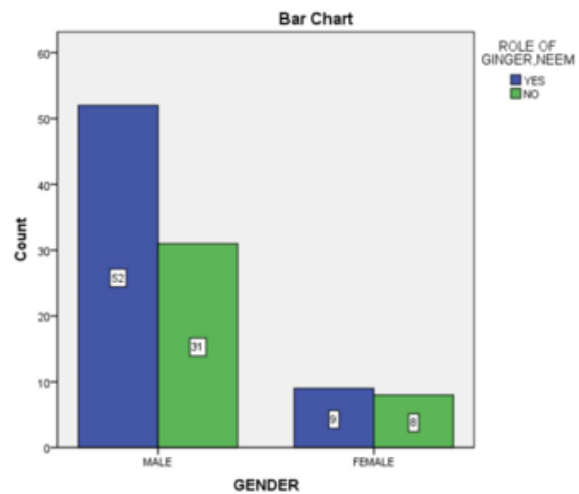


Figure 19: The association by chi square test between gender on the role of Neem, Ginger in prevention against covid19 infection

the best herbs, 40% answered these are best herbs and 19.1% unaware. Figure 13 shows the link between Ayurvedic herbs and COVID-19, 61.6% of the participants are aware, 38.4% of the respondents are unaware. Figure 14 shows the belief people possess on Ayurveda curing COVID-19, 58.9% of the participants strongly believe that Ayurveda is effective in curing COVID-19, and about 41.2% of the people disagree. Figure 15 shows the initiative taken by the government, such as kabasura kudineer for preventing COVID-19, 68.5% are aware, and about 31.5% of the survey participants were unaware. The bar graphs through Figure 16, Figure 17, Figure 18, Fig-

ure 19, Figure 20 depicts the association between gender on the perception of the role of Ayurveda in the prevention of COVID-19, the role of ashwagandha, role of neem and ginger and the perception of the success rate of Ayurveda in treating COVID-19 respectively. The association between gender on the role of ashwagandha in treatment of COVID-19 was statistically significant (p value < 0.05). The rest of the associations were statistically insignificant (p value > 0.05).

In Figure 16, X axis represents the gender and Y axis represents the frequency of responses regarding the role of ayurveda. p value = 0.248, p value > 0.05 hence statistically significant. In Figure 17,

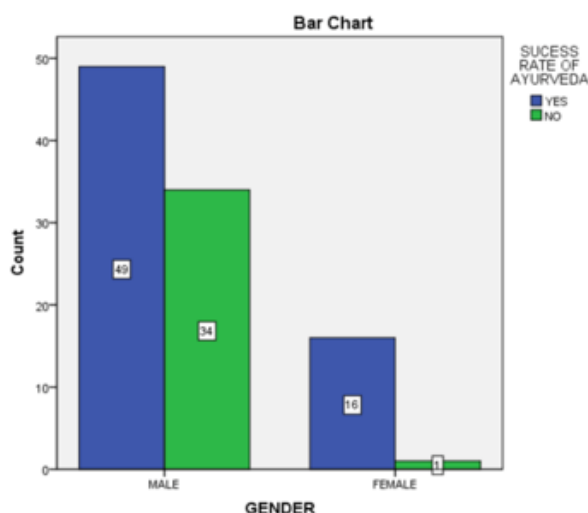


Figure 20: The association by chi square test between gender on the perception of success rate of Ayurveda in prevention against covid 19 infection

X axis represents the gender of the participants and Y axis represents the frequency of responses. p value=0.170, p value>0.05 hence statistically insignificant. In Figure 18, X axis represents the gender and Y axis represents the frequency of responses. p value=0.007, p value<0.05 hence statistically significant. In Figure 19, X axis represents the gender and Y axis represents the frequency of responses. p value=0.455, p value>0.05 hence statistically insignificant. In Figure 20, X axis represents the gender and Y axis represents the frequency of response. p value=0.006, p value<0.05 hence statistically significant.

The study shows that it is inevitable that knowledge and awareness regarding the various aspects of a pandemic outbreak are very important among the masses to curb it. Ayurveda is the traditional medicinal system in India, has great importance in management and prevention of disease and health. In this present study, the link between Ayurveda, immunity and covid19 was analysed. Therefore, (Figure 2) depicts that 59.5% of the population think Ayurveda has a role to play with the prevention of covid19 by boosting the immunity of our body, the findings of our study was similar to the previous research which proves that amla, an important Ayurvedic material predominant in Ayurvedic medicine tends to improve the immunity of our body (Jawla, 2009).

In the previous study, an online survey was conducted to analyse whether the herbs such as cinnamon plays a role in boosting immunity and found that around 76 participants answered that adding 2mg each in 200ml increase the immunity level of

our body to prevent covid19 (Panda, 2020). The findings of the previous study were similar to our results in the present study; 50% of the participants think herbs such as black pepper, cinnamon act as an immunity booster against covid19.

The previous study performed proves that tulsi an Ayurvedic holistic herb plays a role in the management of covid19 (Goothy *et al.*, 2020). The findings of the study carried out previously matches with the results of our research that 58.6% believe tulsi plays a significant role in boosting immunity against covid19.

In the previous study performed to analyse the inhibition properties of plants and proved that plants possess inhibition property to a certain extent based on the affinity of turmeric, neem, ashwagandha and ginger to be potential inhibitors for covid19 (Srivastava *et al.*, 2020). The findings of the previous study match with the results of the present study.

CONCLUSION

The study concludes that during this pandemic outbreak most of the participants are aware of the origin, cause, mode of the spread, treatment options and the initiatives taken by the government to prevent this pandemic and one among the actions taken by the government is the application of herbs used in Ayurveda such as neem, turmeric, cinnamon for the prevention of covid19 by boosting the immunity level of the body. So, therefore, it concludes that Ayurveda plays a significant role in the process of boosting immunity against covid19.

Funding Support

The authors declare that they have no funding support for this study.

Conflict of Interest

The authors declare that they have no conflict of interest.

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