Original Article
ISSN (Online): 2350-0530
ISSN (Print): 2394-3629

International Journal of Research - GRANTHAALAYAH
June 2023 11(6), 113–116

USE OF SPICES AS IMMUNITY BOOSTER A PRELIMINARY SURVEY WITHIN THE GENERAL POPULATION

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Received 27 May 2023
Accepted 28 June 2023
Published 11 July 2023

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DOI
10.29121/granthaalayah.v11.i6.2023.5232

Funding: This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

ABSTRACT

Immunity is the body's defence system to fight various pathogenic agents including bacteria, viruses, and other infectious agents. Healthy people with a healthy immune system can fight infections better than those who are immunocompromised. Studies have shown that diet plays a key role in improving the immune response. Also, the consumption of certain herbs and spices has been associated with health benefits. India is among the leading countries to consume significant amounts of spices. The consumption of spices in the form of a concoction increased further during the COVID-19 pandemic. This concoction is traditionally called Kadha. Over time, people have realized the benefits of Kadha not just in fighting infection but in overcoming various health conditions. The current study surveyed around 83 people from India to understand the use of Kadha within the general population in India as a source to boost immunity. It also aimed to understand their perspective on the most suitable spice. This preliminary survey highlights that among the surveyed population, the majority of the participants considered Kadha as an immune booster (75%) that helps in relieving colds and coughs (73%). The majority of participants selected turmeric (68%) and clove (66%) as spices that help to boost immunity and fight infections.

Keywords: Spices, India, Immunity Boosters, Infection

1. INTRODUCTION

The immune system plays a critical role in fighting pathogens including viruses, bacteria, and other infectious agents. This defence mechanism includes the innate and adaptive immune response Wilson & Hunt (2002). Recently, the COVID-19 pandemic highlighted the fact that the immune system may not work as required in all people Brodin & Davis (2016), Cohen (2020). People with effective immune responses were able to deal with the infection without any complications. However, it was observed that immunocompromised patients experienced severe infectious

outcomes including death Cohen (2020). It is said that consuming the right nutrition through diet helps in boosting the immune system and its response Muniz et al. (2012). Also, the gut is a major site of immunological activity and the production of antimicrobial proteins Childs & Miles (2019). Diet plays a large role in determining what kinds of microbes live in the intestines. Beneficial microbes within the gut stimulate immune cell activity and help to fight pathogens Childs & Miles (2019) Conlon & Bird (2014). Also, several herbal supplements have demonstrated a beneficial impact on the immune system. Interestingly, many kitchen spices are said to be potent immunity boosters Childs & Miles (2019) Conlon & Bird (2014).

India is the largest spice producer, consumer, and exporter of spices across the globe IBEF. India Brand Equity Foundation. (2022). In India, the COVID-19 pandemic led people to consume a concoction of spices called Kadha. This practice has allowed people to recognize the beneficial properties of species in fighting infections, treating several ailments, and building immunity. The pandemic helped demonstrate these spices' wide range of medicinal properties. Spices commonly used in making Kadha include cloves, turmeric, cinnamon, black pepper, ginger, and cumin Ayush Reiterates Immunity Boosting Measures for Self-Care During COVID 19 Crises. (2020).

The present survey-based study was conducted to understand the use of Kadha within the general population in India as a source to boost immunity. The study also aimed to evaluate people's understanding of the most suitable spice to help them fight infections and other conditions.

2. METHODOLOGY

A digital survey was conducted targeting the general public of India (October to December 2020). The survey questions were developed using Google Forms. Any person who could understand the questions and could willingly answer them was allowed to participate. People over the age of 18 were allowed to participate. There were no exclusion criteria and people from any part of India could participate in the survey. Anonymity was maintained during data collection and analysis. The study results were analysed using descriptive statistics.

3. RESULTS

Around 82 people participated in the survey. When asked about their understanding of the properties of the Kadha they consume, 75% of people highlighted that it acts as an immune booster. Around 73% of participants felt that it helps in relieving cold and cough, 42% felt it helps in digestion, and 41% stated that it helps them fight against flu. Around 43% of participants stated that Kadha helps in reducing inflammation; 44% felt it acts as an antioxidant (Figure 1).

Figure 1

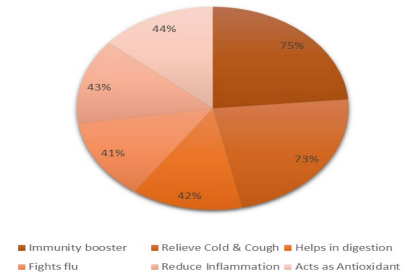

Figure 1 Participant's Perspective on the Role of Kadha

When asked about the most suitable spice to boost immunity and fight against infection, around 76% of participants selected ginger, 68% of participants selected turmeric, and 66% selected cloves and black pepper. Around 54% and 56% voted for cinnamon, and basil and 38% to 42% voted for cumin and cardamom. Around 26% voted for 'fennel seeds' and 8% chose 'others' as the most suitable spice (Figure 2).

Figure 2

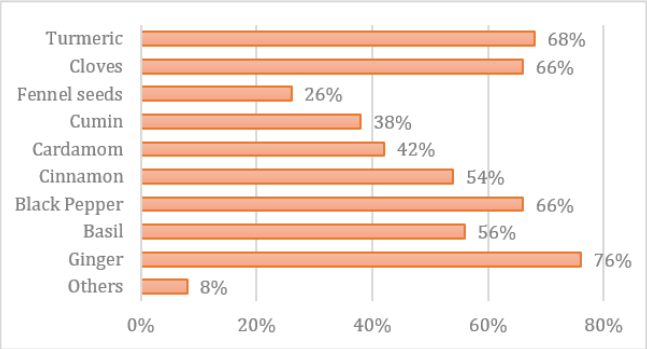

Figure 2 Participant's Opinion on the Routinely Used Spices as Immunity Boosters

4. DISCUSSION

Ever since the COVID-19 pandemic, the consumption of herbs and spices has gained a lot of importance. Although herbs and spices have been used in India since ancient times, there has always been a need to assess awareness of the same in the general population. There aren't many studies assessing the current status of herb or spice consumption as an immunity booster in the form of Kadha within the population of India.

A review article Ghosh et al. (2015) highlighted that curcumin from turmeric has antioxidant, hypoglycemic, anti-inflammatory, and anti-cancer activities. Similarly, in the current survey, 68% of participants reported that turmeric is useful in boosting immunity and fighting against infections.

A docking study Nag & Chowdhury (2020) reported piperine as the main compound in the hexane extract of black pepper seeds (*P. nigram)*. It was found that piperine can inhibit the antiviral enzymes of Dengue and Ebola viruses. Another study Cortés-Rojas et al. (2014) reported that the eugeniin is an antiviral compound isolated from Clove (*S. aromaticum)* and from *Geum japonicum*, was effective against herpes virus strains and it has antibacterial, antioxidant activity and antinociceptive activity. The current survey highlights responses that are in line with the above study. Around 66% of the participants in the survey reported that clove and pepper boost immunity; 44% of participants stated that the Kadha has antioxidant properties and 73% of the participants reported that they were relieved from cough and cold by consuming kadha on a regular basis in COVID-19 pandemic.

Overall, the survey results were comparable with the existing data from other studies and reviews. published data.

5. CONCLUSION

Although the present study is a preliminary survey, it can act as a scaffold for a larger survey to assess the preference for spices among the general population. This

will enable us to assess their understanding of the role of spices in boosting immunity and fighting infection.

CONFLICT OF INTERESTS

None.

ACKNOWLEDGMENTS

Dr. Nilima Gajbhiye conceptualized the study. Ms. Manali Kamble designed the questionnaire, conducted the survey, gathered data, performed data analysis, and wrote the manuscript under the continuous supervision of Dr Nilima Gajbhiye. This research did not receive any specific grant from any funding agencies in the public, commercial or not-for-profit sectors.

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