Original article

Prospect of herbal medication as prevention against COVID variants

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A B S T R A C T

Personal immunity frolicked an essential role in combating COVID-19 impacts on human health individually and collectively in community. Literature represented the fact about food or nutritional supplements are certified to protect against diseases; this was the reason behind public trust on certain plants and other commercial products to boost up immunity against coronavirus disease. Present study was conducted to observe the attitude of common public towards natural herbs in treating various diseases and to assess the possible potential of herbal medication in prevention of negative impacts of different variants of COVID-19 on human health at herbal clinic named "Pakistan Matab". Results concluded that most of the patients (About 80%) avoided COVID-19 testing even on experiencing major symptoms and they preferred herbal medication. Patients who died by COVID-19 were also experiencing different diseases like liver and Kideny malfunctioning; old age was another significant factor in this case. About 90% of patients were COVID symptomatic and 10% were carrying other diseases during observational study period at herbal clinic. Study represented that patients who visited clinic, have a faith on herbal medication with about 60% of patients in favor of vaccine and allopathic medication in combination with herbal treatment. Study investigated that vaccine was only for one type of variant and use of herbal medicines could be better option to boost up immunity against various COVID variants.

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1. Introduction

Coronavirus (COVID-19) proliferated across the world in days and declared as pandemic on 12 March 2020 (GISAID, 2020; Mahmood et al., 2020). It was a viral infection induced by coronavirus (Cui et al., 2019; Wong et al., 2020). This virus was identified and divulged at the end of December 2019 in the city of China, Wuhan (Guan et al., 2020; Mahmood et al., 2020). Coronavirus was the member of simple joint cold virus family that merely originate respiratory tract problems (Gorbalenya et al., 2020). Infec-

tions caused by COVID-19 exhibited a wide range of symptoms that could be ended in deaths as it was rolling out rapidly throughout the world along with inflated mortality and morbidly rate (Huang et al., 2020; World Health organization, 2020.).

A person's immune system was found associated with antibodies that fight against infections and diseases and protect the individual's body (Sanche et al., 2020). So, the scientists from all over the world were in hurry to prepare vaccines against this lethal disease (Ur Rehman et al., 2021) and were successful somehow in shortest time duration of one year. Across most of the regions people inquired about ambiguities in vaccine preparation methods and asked for long term impacts on human health (Yangchen et al., 2022). In this chaos some information regarding herbs and natural medicines providing defense against Covid-19 has been spread without any scientific proof on social media (Günalan, 2021; Rizki et al., 2021). Mostly people believed in such information and started using these herbs and natural medical products considering them useful against Covid-19 infection, without any aftermaths (Yayinie et al., 2021). Investigation and studies proved that natural herbs and products help a person to

nourish, improve, recover, and enhance its natural health but cannot prevent causing infections (El-Dahiyat et al., 2020). However, Covid-19 pathophysiological process was still not completely known. It was observed in clinical studies that persons infected with Covid-19 demonstrated high rate of cytokines presence called "cytokine storm". This could enhance severity in symptoms of Covid-19 infected person. So, this was assumed that herbs caused reduction in cytokines in body could reduce severity of Covid-19 in the patients (Demeke et al., 2021). Clinical studies suggested that a healthy immune system was with optimal nutritional functioning system (Calder et al., 2020; World Health Organization 2020). Researchers and local practitioners were still looking for natural products, herbs, and commercial additives to fulfill the deficiency of food and additives that are sanctioned for Covid-19 prevention (El Alami et al., 2020).

There was no doubt that natural herbs, products, and medicines help and invest in human heath, but it could cause negative impacts if, not ingested properly; specially in elder people, pregnant women, and those who are already facing chronic diseases (Mahmood et al., 2012; Alyami et al., 2020). Literature showed that some natural medicines, herbs, and products have the capability to enhance immunity by taking them in combination with traditional drugs (Mahmood et al., 2013; Benarba and Pandiella, 2020; Aldwihi et al., 2021). Generally, the local herbal practitioners of Pakistan were already utilizing natural herbs, medicines, and products as traditional treatment against severe chronic and untreatable diseases.

Therefore, the influence of herbal medicine was projected in the beginning of pandemic in Pakistani population. Particularly in the beginning, as there was no recommended treatment, medicine, or vaccine was available (Kumar et al., 2022). According to the best of author's Awareness and understanding there was not a single article published to evaluate the impact of herbal medicines in combination with local drugs was utilized by Pakistani people during the pandemic with constraints and restrictions. Till date no reference or information was obtained favoring the theory that natural medicines help in prevention from Covid-19 or curing such diseases solely (Aiman et al., 2016; Benarba and Pandiella, 2020; Khadka et al.,2021; Chandramouli et al., 2021; Alam et al., 2021a, b; Alotiby and Al-Harbi, 2021), but some information was available to prohibit Covid-19 disease severity. However, a registered herbal medicine practitioner in Faisalabad district, Punjab province, Pakistan claimed to treat Covid-19 by using some herbal formulas with locally available drugs in specific dose recommendations. This could be helpful to treat and prevent Covid-19 disease in multiple community groups were not eligible for vaccination such as: children under the 20 years old, people having heart diseases/any chronic disease, and pregnant women. Present study was aimed to investigate the impact and role of recommended formulae by local practitioner against Covid-19 disease. Moreover, to observe the public trust on herbal medicines and potential of herbal medicine to prevent Covid-19 variants.

2. Methodology

Following methodology was adopted for this study:

2.1. Study area

Study was conducted in a registered herbal medication clinic named PAKISTAN MATAB in District Faisalabad, Punjab, Pakistan. Study area was selected due to claim of practitioner and patient's response about efficiency of herbal medication in prevention of COVID variants.

2.2. Study design

Present study was designed to observe COVID-19 symptoms and herbal medicine treatment efficiencies in symptomatic patients. An observational analysis was planned to collect accurate data. For this, a questionnaire comprised of five main parts were designed to record observations; including; Socio-demographic information of patients (Fig. 1), Response and awareness of symptomatic patients about COVID-19, Types of symptoms observed by patients, COVID testing trends, and Cure of symptomatic covid-19 by using herbal medicine solely and in combination of different types of medication like allopathic and homeopathic (Figs. 2–5). Expert team members attended the clinic for 4 months at peak COVID duration from 10th July to 10th August 2021 and 10th January to 10th February 2022 to investigate patients' attitude and cure by using herbal and allopathic medicines.

2.3. Sampling strategy

All patients were divided in 4 age groups 15–35, 36–50, 51–65 and 65–85 years and at least two patients from each age group were observed in each week to observe the COVID-19 symptoms while using herbal medicine. However patient selection was also dependent on male/female ratio and severity of covid-19 symptoms. Furthermore, cooperation from patients to provide regular information was another sampling strategy to collect data.

2.4. Sample size

Total 100 patients were observed from starting of symptoms till ending of symptoms. Data about type of medication like herbal, allopathic, homeopathic used by symptomatic patients were also recorded.

2.5. Medication

Herbal medicine was prepared by following a procedure (Not allowed by practitioner to present in this study openly due to patent process) by using different herbs like aloe vera, black pepper, ginger and Ammoniac (noshadar). Current study observed overall effectiveness of herbal medicine in curing Covid-19 patients.

2.6. Covid testing

Lab testing were recommended to each patient bearing general covid-19 symptoms; anyhow, oxygen level was checked at clinic to observe moderate to severe covid impacts.

2.7. thical approval

Ethical approval for using formulae was obtained by practitioner; as he was practicing in a registered clinic. However, present study was based on observational information and evidences provided by patients from symptomatic to asymptomatic condition. So, this study did not require any ethical approval prior to investigation.

2.8. Statistical analysis

After the data were extracted, they were revised, coded, and fed into the statistical software IBM SPSS version 22 to assess the socio-demographic status, patients' response to Covid-19 symptoms, and efficiency of herbal medication in treating and Covid-19 variants.
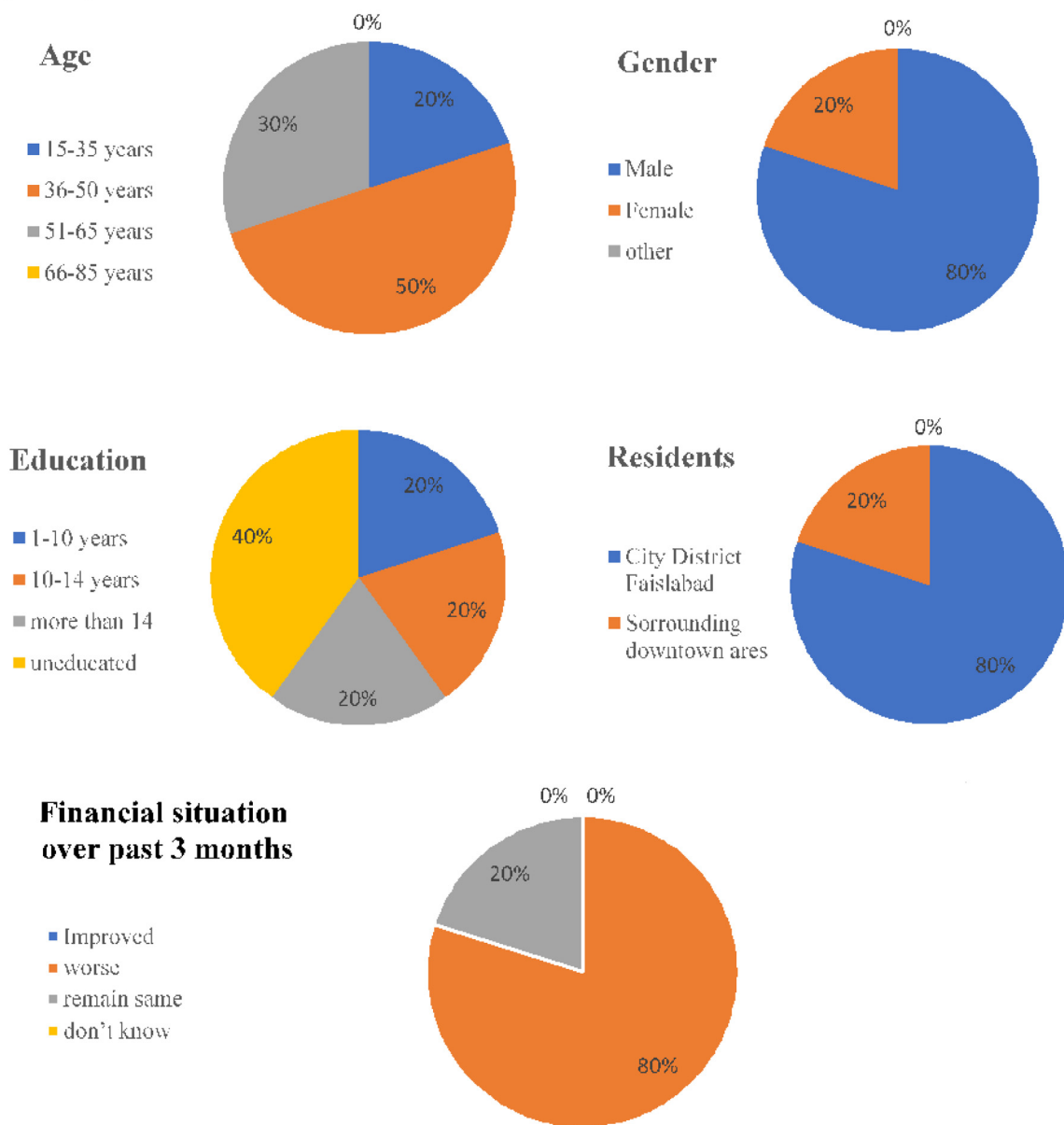
Fig. 1. Sociodemographic status of patients.

3. Results

3.1. Sociodemographic status of patients

Figure 3.1 represented sociodemographic information of patients visited clinic with potential Covid-19 symptoms. According to the information 50 % of the patients were middle aged that was within 36–50 years, 30 % of the patients were above 50 years, However, only 20 % of the patients were young (15–35 years). Data about gender of patients' revealed that males made up 80 % of those who consulted herbal medicine practitioner, while females made up only 20 % of patients. Moreover, 60 % of the patients were educated, among them 20 % were university graduates (with more than 14 years of education), 20 % have completed their 10–14 years of schooling, and 20 % of patients were with 1–10 years of education. Anyhow, 40 % of the patients were illiterate. Data showed that almost 80 % of the patients were the residents of City District Faisalabad while 20 % of the patients came from surrounding downtown areas. The financial situation of 20 % of the patients was remained stable over the previous three months, while the financial status of the 80 % of patients had deteriorated during the pandemic as represented in figure 3.1.

3.2. Patients response towards Covid-19

Current study illustrated the personal experience of the patients regarding coronavirus infection, symptoms and treatment. Figure 3.2 represented that 80 % of patients believed that they were infected with covid-19 and avoid to undergo for proper covid-19 testing; however, 20 % of patients with symptoms believed they observe normal flue and temperature. Present study observed that 30 % of the patients with symptoms preferred to quarantine themselves at home, and 70 % of patients did not believe on only home quarantine. Patients visited clinic in peak days were almost 70 % asymptotic, and the remaining 30 % were symptomatic. 10 % of the patients told about their possible contact with covid-19
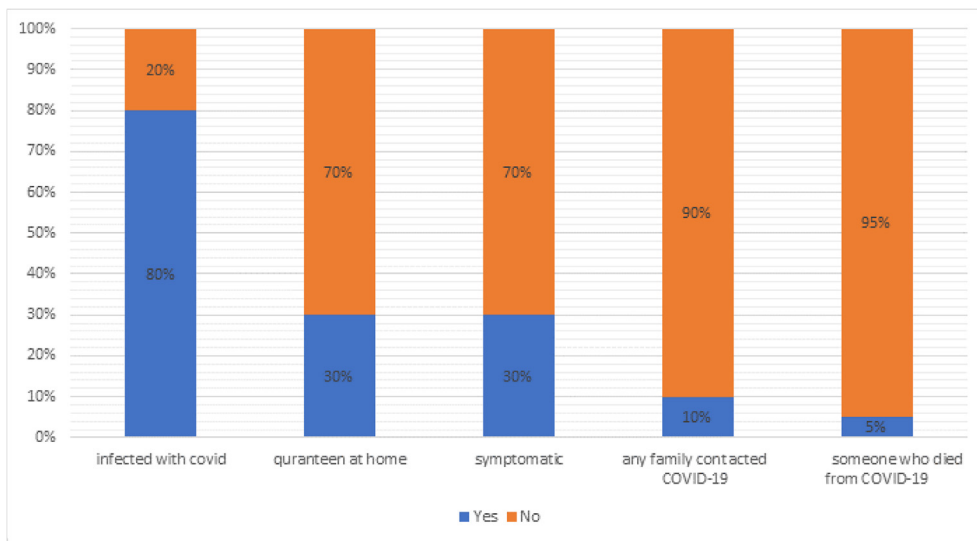
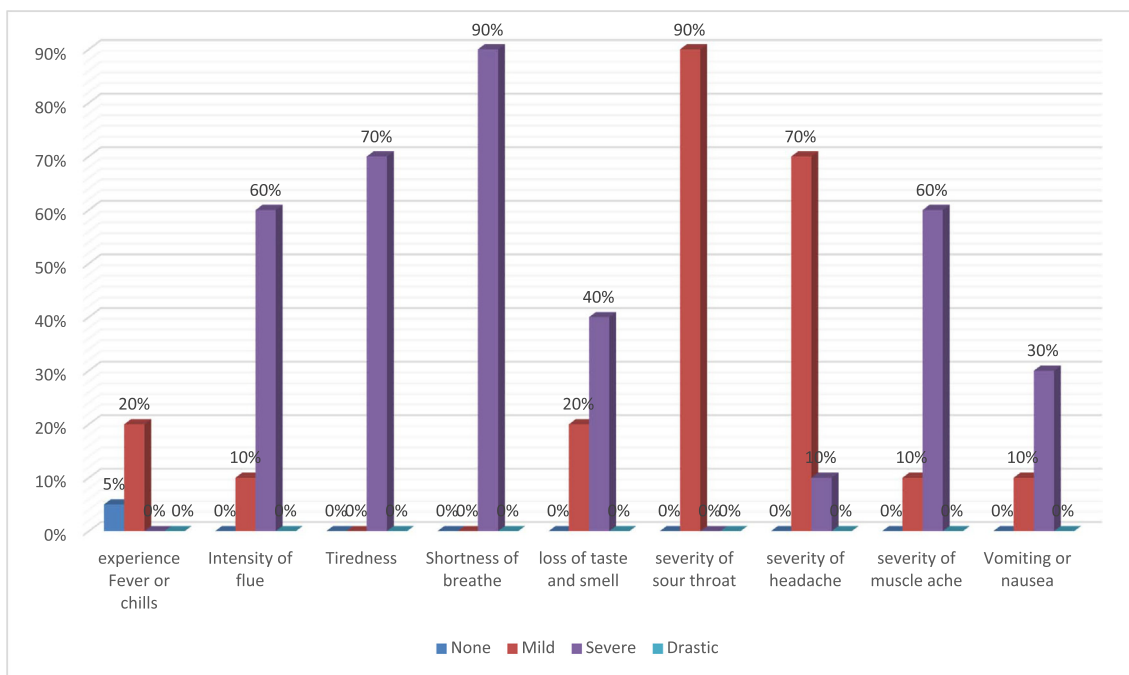**Fig. 2.** COVID patient's response and awareness.

Fig. 3. General COVID Symptoms in patients.

patients however, 90 % of the patient's families had no such experience. Only 5 % of patients died while on utilizing herbal medicine but they were having various other diseases in combination prior to covid-19 like liver and kidney failure. Figure 3.2 showed that 95 % of patients cured after using herbal medicine.

3.3. General Covid-19 symptoms appeared in patients

COVID-19 has a variety of effects on various persons. Most infected patients experienced mild to moderate symptoms and recover. The severity of sour throat was the most common symptom, with 90 % of patients experiencing mild sour throat and 10 % experiencing serious sour throat. Shortness of breath, another

major Covid-19 symptom, was badly experienced by 90 % of patients, according to the figure 3.3. Flu and muscle ache was severe in 60 % patients and tiredness was severe in 70 % of the patients. Loss of taste and smell was also a severe symptom in 40 % of the patients. Other mild to moderate common symptoms included fever or chills (75 % people experience moderately), headache (70 % people experience mild) and vomiting or nausea (60 % people experience moderate symptoms).

3.4. Preferences of Covid-19 test

The global COVID-19 pandemic response has relied heavily on diagnostic testing. Rapidly developed diagnostic tests were among
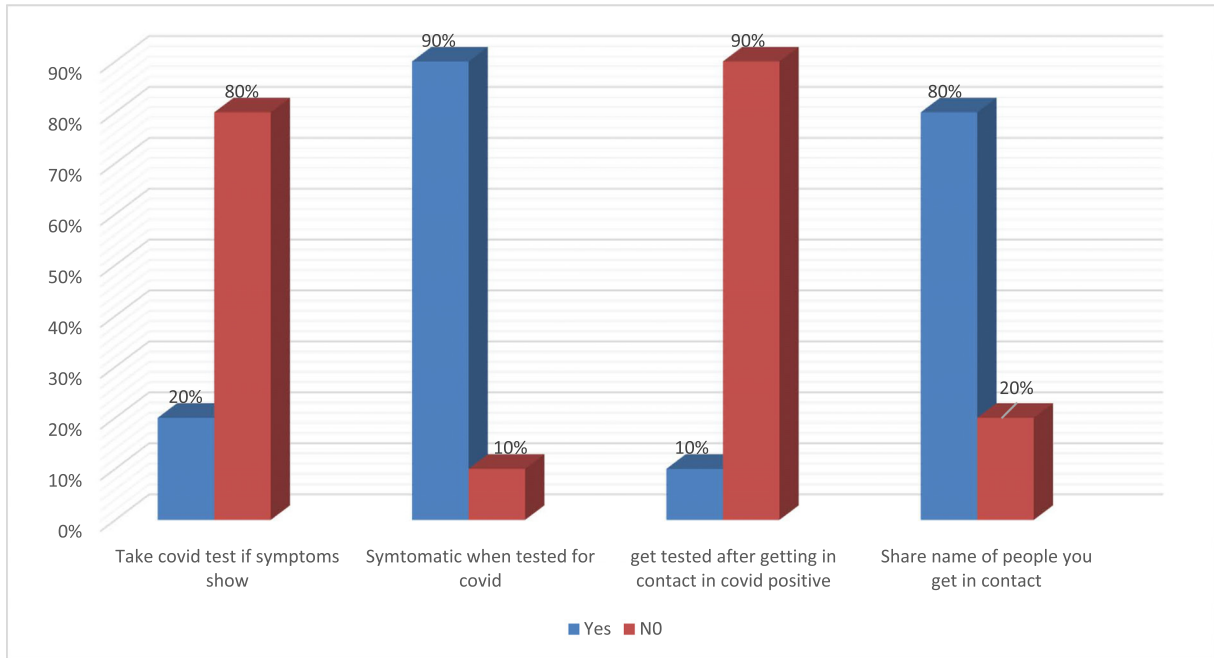
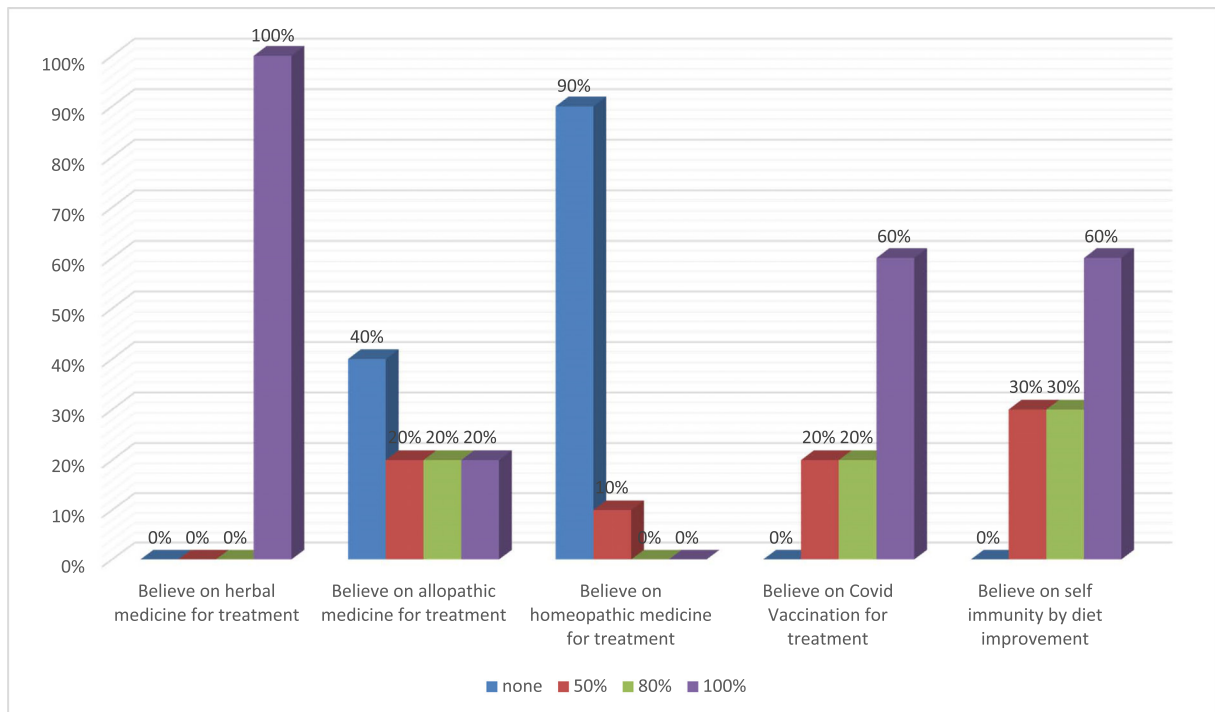**Fig. 4.** General COVID testing trend in patients.

Fig. 5. Various COVID treatment effectiveness in patients.

the few measures available in the early months of the pandemic. According to the figure 3.4 only 20 % of patients agreed to undergo a covid test when symptoms appeared, and 80 % never agreed for confirmation test. However, 90 % of patients visited clinic at peak

days of Covid-19 were symptomatic, and 10 % were for other diseases. Only 10 % of those who came into touch with a covid positive person were tested, while the remaining 90 % were not. Study observed that 80 % of the patients agreed to share the names of people they met, while the remaining 20 % disclosed the names of people they met after getting experiencing covid-19 symptoms.

3.5. Cure and trust on herbal Covid-19 treatment effectiveness

Patients who visited clinic were 100 % sure about herbal medicines as a covid-19 treatment. However, 60 % of the patients also believe in combined treatment of herbal and allopathic medicines. Only 10 % of the patients told about homoeopathic Covid treatment. When our study was conducted, vaccine was introduced at that time but only 60 % of the patients favored vaccination; and 60 % of the patients thought that Covid could be healed by boosting self-immunity with a balanced diet and herbal medicine has strong potential in treating covid variants. Figure 3.5 showed that 100 % patients preferred herbal medication; and those who favored other treatments were additional in combination with herbal medicine.

4. Discussion

The majority of people utilized herbs, natural foods, and nutritional supplements as alternative solutions to boost up their immune system and to reduce their risk of illness across the world. This was first observed in Saudi Arabia to look at the wide usage of herbal products during the COVID-19 outbreak (Mahmood et al., 2014a; Mahmood et al., 2015a; Amna and Laila, 2021). Furthermore, the goal of previous researches was to find out the variables influenced herbal medicine intake during the COVID-19 pandemic, as well as the patterns and frequency of consumption, and to assess their possible adverse effects. Literature represented that the majority of Arabs were still relied on traditional herbs for healing. Also, the usage of herbs and natural food items has grown in popularity globally (Mahmood et al., 2014b; Mahmood et al., 2015b; Alam et al., 2021a,b). Current study also showed same pattern as sociodemographic data represented that patients of different age group, gender, educational background, and financial status preferred herbal medication to treat covid-19 (figure 3.1). Referring to the premise given at the outset of previous studies, the findings clearly demonstrated that during the COVID-19 pandemic, the consumption of herbs and natural products increased significantly at global level (Ang et al., 2020). But another reason was public interest and general facilitation of covid-19 testing (Mehmood et al., 2017a; Yangchen et al., 2022). Figure 3.2 of this study also showed that financial status of almost 70 % of patients were unstable and people were later found reluctant against covid-19 test. Developing countries were also reported that they have meager system of covid testing or was costly for common public (Mehmood et al., 2017b). Current study also investigated that patients with clear covid-19 symptoms hesitated to go through testing system (figure 3.2). Few studies highlighted the nutritional contents of honey to boost immunity across many cultures (Yayinie et al., 2021). However, the frequent usage of natural food items, particularly black seeds, honey, ginger, lemons, turmeric, and garlic was taken as a key finding in previous studies. Honey, black seeds, and garlic were the most widely utilized natural items among Lebanese adults, according to a study by (El Alami et al., 2020) Olives, onions, garlic, ginger and olives were the most often utilized natural goods, according to a recent Moroccan study (El Alami et al., 2020). Moreover, According to Hamulka et al. (2020), during the COVID-19 pandemic, people have been more interested in and consumed immune-related substances and foods

such zinc, garlic, omega-3, ginger, turmeric and vitamins C & D. However, figure 3.3 showed various symptoms observed in patients visited herbal clinic during peak timings were same as were globally assigned to the Covid-19 symptoms (World Health Organization, 2020). Figure 3.4 showed that 80 % of patients failed to undergo covid testing and 90 % of patients who agreed for covid testing were severely affected with the disease. Many developing countries were facing problems in provision of covid-19 testing facilities (Pakistan: COVID-19—Situation, 2020).

Many studies were originated virtually to get information about herbal use to prevent covid-19. Posts on social media, family traditions, and friends' recommendations were the participants' primary sources of information regarding the usage of herbs and organic products. People in the United States and European nations like as the United Kingdom, Germany, Italy, and France, in contrast to Saudi Arabians, used the internet to learn about herbs, food items, and supplements throughout the pandemic (Günalan, 2021). Moreover, the quality and trustworthiness of many of these pieces of knowledge were unknown; hence, their authenticity was in doubt, potentially leading to inappropriate behaviors. As a result, prospective public awareness efforts about how to get correct information from reliable sources could be helpful for individuals to have a better understanding of the credibility of health data sets. The prevalence of herbs and natural ingredients was not associated to any socio-demographic parameters other than age, according to our findings.

According to the previous researches, ginger, chilli pepper, black seeds and garlic have been the most commonly ingested herbal and natural ingredients among the elderly, but honey and Murrah were preferred by the younger ones. This conclusion was backed up by a recent study out of Jordan, which found that herbal medicine use was unrelated to any demographic characteristics apart from age (El-Dahiyat et al., 2020). It might be owing to the substantial differences in the two age groups' everyday lives or their distinct taste choices. Currently, this was the first study of its type in Pakistan to assess the trust and effectiveness of herbal medication on covid-19 patients (figure 3.5). Related variables influencing their usage, and the associated harmful consequences of using them during the Corona Virus pandemic were also considered during the observational study. The most noteworthy finding suggested a large rise in the use of herbs and organic products among Pakistani people during the outbreak of COVID-19 (figure 3.3, 3.4, and 3.5). Ultimately, based on the observational evaluation, the present study emphasized the combined use of herbal medication with allopathic and homeopathic medications. As a result, the current study suggested that more research be conducted to determine the significant consequences of utilizing herbal medications in diabetic patients in comparison to a control group (El-Dahiyat et al., 2020). Importantly, the study suggested that patients with chronic diseases and primary care doctors be educated on how to utilize various herbal medication solely and in combination with common flue drugs.

5. Conclusion

Herbal medication was effective for all public without age, gender, education and financial differences; and mostly age of covid patients were ranged between 36 and 50 years; and 30 % of the patients were above 50 years, However, only 20 % of the patients were young (15–35 years). Another main problem was covid-19 testing, as patients were reluctant for covid testing. Study represented that 80 % of patients believed that they were infected with covid-19 and avoided proper covid-19 testing. This could be due to their unstable financial status; and a major reason for using herbal medication. Another observation was about patients trust on her-

bal medication. It was found that 100 % patients visited the clinic were favoring and trusting herbal medication; and all covid-19 symptoms appeared in patients were ended due to proper use of herbal medication. Previous studies reported that vaccination was effective against one type of variants but herbal medication could be preventive against each variant by boosting up immunity. So study concluded that herbal medication could be used as a collective preventive measure against COVID variants but more clinical studies were recommended to adopt this.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Acknowledgement

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.jksus.2022.102360.

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