

Perceptions and Practices of Herbal Remedy Usage During the COVID-19 Pandemic; A Call for Evidence-Based Healthcare in Pakistan

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Authors Contribution

^{1,2}Proposed the idea of the study developed the protocol for research, ^{3,4}initial draft of manuscript, analyzed data
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ABSTRACT

Objective: To determine the prevalence, perception and practices towards the use of herbal remedies by Pakistani population during the era of covid 19 pandemic.

Methodology: This cross-sectional explorative study was conducted at Department of medicine Sir Syed Medical College Karachi 2021 from August 2021 to December 2021. An online google form well written by primary investigator was distributed generally to various what's up forum throughout Pakistan with no specific inclusion or exclusion criteria. First section of the questionnaire included demographics of participants, second section include about the use of herbal remedy types, perception, beliefs of their use, source of getting them and the remedies used for the prevention of covid virus

Results: This study, was conducted from August to December 2021 spread through google online forms, included 332 respondents, 52.1% of participants utilized herbal remedies for COVID-19 prevention, with 55.5% belonging to the 25-45 age group with 81.3% of them were educated females. A significant association ($p<0.05$) was observed between herbal remedy usage and age group, gender, education, and occupation. Senna Makki (38.8%), ginger (17.7%), and kalonji (10.2%) were commonly used herbs. While 37.7% reported health benefits, 15.1% believed these herbs had no side effects, and 22.3% used them for virus prevention. Attitudes toward herbal remedy usage revealed that 47.4% agreed these herbs could prevent disease, and 36% believed no additional preventive measures were necessary while using them. Family tradition (19.3%), health professionals (14.5%), and internet/media (14.2%) were key sources of information, while Hakeem stores (16.6%) and family members (7.8%) were common herbal remedy providers.

Conclusion: This study highlights an urgent need for evidence-based healthcare interventions in Pakistan regarding the utilization of herbal remedies during the virus pandemic especially when there are risks associated with the improper use and potential influence from media.

Key words: Covid 19 pandemic, Herbal remedies, Perception, Practices.

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Introduction

Herbal remedies are having a rich historical tradition of treating various ailments ^{1,2} and this tradition has gained significant attention during the COVID-19 pandemic over

the globe.³⁻⁸ A 2022 systemic review reveals that 32 countries were found a surge in self-medication during the pandemic, with a notable inclination towards herbal remedies.¹⁰ The World Health Organization (WHO) and the Centers for Disease Control and Prevention (CDC)

have consistently emphasized the importance of evidence-based practices.^{11,12} However, the misuse of herbal remedies, exacerbated by complete lockdowns and widespread social media advertisements, has raised concerns about the safety and efficacy of these interventions¹³⁻²³. Pakistan is a country where both traditional and Western medical systems coexist and the herbs are supplied freely over the counter in super store and pharmacies.²⁴ The curiosity for the search of best medicine to cure covid virus was found here due to the lack of specific antiviral treatment among general public as well as health care practitioners²⁵. They sought ways to boost their immune systems and alleviate symptoms under the influence of traditional holistic care approaches. For that they explore self-medication without expert consultation, relying on Eye-catching advertisements from media, friends, or their own past experiences.²⁶ The indiscriminate use of herbal remedies represents a considerable risk as it may lead to the neglect of standard precautionary measures recommended by health authorities. Individuals may overly rely on herbal interventions without considering other effective preventive measures, potentially compromising their health outcomes. This issue is particularly pertinent in the context of Pakistan, where the use of herbal remedies is prevalent but their efficacy and safety are not always well-documented or understood. The study was aimed to address this gap by exploring the perceptions and practices of herbal remedy users in Pakistan. By examining the patterns of herbal remedy usage, the research seeks to shed light on the factors driving this behavior and the associated attitudes and beliefs. Understanding these dynamics is crucial for several reasons.

Methodology

A cross-sectional study was done during the corona virus pandemic in year 2021 from the month of August 2021 to December 2021. It was estimated using an online sample size calculation open epi version 3.01, after assuming 50% expected use of herbs remedy during COVID-19 pandemic at 5.4% margin of error and 95% confidence interval we were required at least n=330 sample for this study. An online google form well written by primary investigator was distributed generally to various what's up forum throughout Pakistan with no specific inclusion or exclusion criteria. First section of the questionnaire included demographics of participants, second section include about the use of herbal remedy types, perception, beliefs of their use, source of getting them and the remedies used for the prevention of covid virus. In the

questionnaire it was mentioned that this form is anonymous means no identity will be asked and information will only be used for research purpose. This was an online survey during the COVID-19 pandemic in which participants all over the Pakistan were targeted. They were asked to fill the online questionnaire only if they provide consent at the beginning of questionnaire. All data was kept confidential in a pass word protected computer. The data was anonymous like without any identity. Data were stored and analyzed using IBM SPSS version 23.0. Counts with percentages were given for the baseline characteristics like age group, gender, Education, and Occupation. Association of these factors with the usage of any herbal remedy for COVID-19 virus prevention was tested using Pearson Chi Square test. Description on knowledge, Perceptions, attitude and practices of these herbs were also reported. Pie diagram and bar charts are also given for prevalence of using herbs, source of knowledge and adoption. P-values less than 0.05 were considered statistically significant.

Results

The baseline characteristics of the studied samples were analyzed, with a total of 332 participants. The use of herbal remedies for COVID-19 prevention was investigated, with 173 individuals (52.1%) reporting its use and 159 (47.9%) reporting no use. Significant associations were found between herbal remedy use and age group, gender, education, and occupation ($p < 0.01$). Table.1 Additionally, knowledge and perceptions regarding the use of herbal remedies during the pandemic were assessed and shown in figure 1.

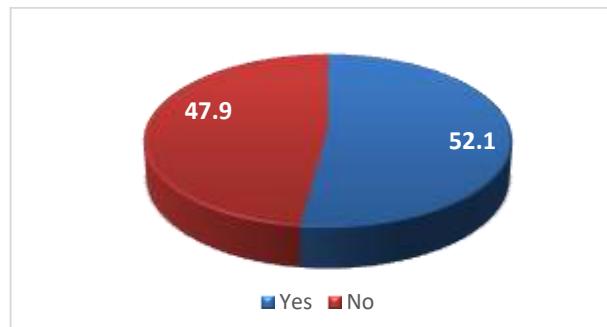


Figure 1. Showing out of 332 samples, 52.1% using Herbs remedy to during COVID-19 pandemic.

Senna Makki was the most commonly used herb (38.8%), primarily chosen for its perceived health benefits (60%). Attitudes toward herbal remedy usage varied, with a majority agreeing that they may prevent disease (75.7%)

Table I: Baseline Characteristics of Studied Samples.

Baseline Characteristics	Total (n=332)		Use of Herbal Remedy for COVID-19 Virus Prevention?			p-value	
	n	%	n	%	n		
Age Group	<=24 years	106	31.9	39	22.5	67	42.1
	25 - 45 years	168	50.6	96	55.5	72	45.3
	>45 years	58	17.5	38	22.0	20	12.6
Gender	Male	62	18.7	28	16.2	34	21.4
	Female	270	81.3	145	83.8	125	78.6
Education	Secondary	27	8.1	-	-	-	-
	Intermediate	74	22.3	8	4.6	19	11.9
	Graduate	160	48.2	38	22.0	36	22.6
	Post-Graduate/Masters	55	16.6	78	45.1	82	51.6
	Other	16	4.8	37	21.4	18	11.3
Occupation	Executive professional	36	10.8	12	6.9	4	2.5
	Self employed	42	12.7	19	11.0	17	10.7
	un-employed	9	2.7	31	17.9	11	6.9
	Office worker	12	3.6	2	1.2	7	4.4
	House wife	129	38.9	3	1.7	9	5.7
	Student	69	20.8	79	45.7	50	31.4
	Other	35	10.5	22	12.7	47	29.6

*p<0.05 was considered significant using Pearson Chi Square test

but disagreeing that they eliminate the need for other preventive measures (51%). Table II and III

Table II: Knowledge and Perceptions on using Herbal Remedies during COVID-19 Pandemic.

Parameters	N	%
Name of herb used	Senna Makki	57 38.8
	Kalonji	27 18.4
	Ginger	26 17.7
	Other	26 17.7
Reason for using herbs	Health benefit (best for prevention)	199 60
	Symptomatic relief	28 8.4
	Well known	27 8.1
	Cheap	13 3.9
	No side effects	50 15.1
	Easily available	28 8.4
	Un availability of proven medication	13 3.9
	Corona Cases Are Increasing	28 8.4

Table III: Attitude toward use of Herbal Remedies during COVID-19 Pandemic.

Items	n	%
Do you think they will prevent you from disease?	Strongly Agree	49 28.3
	Agree	82 47.4
	Neutral	40 23.1
	Disagree	2 1.2
While taking this herbal remedy there is no need to take any other preventive strategy?	Strongly agree	11 6.4
	Agree	32 18.6
	Neutral	41 23.8
	Disagree	62 36.0
	Strongly disagree	26 15.1

Practices related to herbal remedy usage were also explored, indicating a preference for combination remedies (66.5%) and crude/raw forms of herbs (69.4%).

Adverse effects were reported by 16.8% of users, with varying responses to these effects. Reasons for not using herbal remedies included unawareness (24.1%) and concerns about side effects (5.7%), among others. Other complementary remedies included allopathic medicine (17.4%), homeopathy (15.1%), and exercise/yoga (22.8%). Table IV and V.

Table IV: Practices of Herbal Remedies during COVID-19 Pandemic.

Practices	n	%
Use of single or combination remedy	Single	58 33.5
	Combination	115 66.5
Frequency of using herbs	Daily	74 42.8
	Twice a day	25 14.5
Form of Herbs used	Once a week	29 16.8
	Twice a week	31 17.9
	Very seldom	14 8.1
Adverse effect observed	Crude/Raw Form	120 69.4
	Packed Form	36 20.8
	Packed (licensed by Govt)	9 5.2
	Kehwa	11 7.5
Action after having side effects	Other	8 4.6
	Yes	29 16.8
Adverse effect observed	No	144 83.2
	Stopped it	14 17.1
Action after having side effects	Continue its use	21 25.6
	Consulted a doctor	6 7.3
	Tried a Different Remedy	8 9.8
Action after having side effects	Nothing	30 36.6
	Other	3 3.7

Table V: Perceptions and Preference on Herbal and Other Remedy's.

Items	n	%
Reason For not using Herbal Remedy	Unawareness	80 24.1
	Side Effects	19 5.7
	Disbelief	32 9.6
	Not authentic	35 10.5
	Dislike Taste	41 12.3
Other complimentary remedy	Allopathic	45 17.4
	Homeopathy	39 15.1
	Exercise/Yoga	59 22.8
	Over the counter medicine	6 2.3
	Multivitamin	88 34.0
	Other	22 8.5

Discussion

This is the first Pakistani study highlights the use of herbal remedies during the era of covid 19 pandemic shedding light on its prevalence, motivation and practices. 52.1% of respondents engaged in herbal remedy usage, unveiling a significant reliance on traditional approaches during the challenging times.

Comparative insights from a 2023 systemic review including 32 countries including China underscore the global surge in self-medication practices during the pandemic found that of Indians were the highest users 84.5%, followed by Peru (80%), Mexico (61.9%), Bangladesh (56.7%), Iran (48.8%), Malaysia (41.9%), and others.¹⁰ Indian has got highest ranking aligning with our findings, possibly due to shared cultural practices dating back to the Indus Valley civilization.

Age, gender, and education emerged as pivotal factors influencing herbal remedy usage, with 55.5% falling in the 25-45 age group, 83.8% being females, and 45.1% possessing post-graduate qualifications. These findings differ from studies in the systemic review¹⁰ but consistent with Bangladesh¹⁹, where married females with higher education exhibited more significant self-medication tendencies. The variability in results may stem from diverse socio-demographic profiles and cultural influences.

The motivations behind herbal remedy usage in Pakistan with 37.7% seeking health benefits, 22.3% focusing on virus prevention, and 47.4% believing in the preventive efficacy of herbal remedies. This aligns with international studies revealing similar motivations, particularly in Iran (48.8%)¹⁷ and Malaysia (57%).²²

The specific herbs used in Pakistan, such as senna makki (38.8%), ginger (17.7%), and kalonji (10.2%), resonate with global trends observed in Indonesia¹⁰, Saudi Arabia¹⁰,

Bangladesh¹⁹, and Morocco.¹⁰ The widespread use of natural products with potential antiviral properties reflects the convergence of cultural traditions and scientific exploration.

Black seed (*nigella sativa*), embraced by 10.2% of respondents, mirrors a Saudi study's findings, emphasizing its immunity-enhancing and tissue-protective effects.^{28,29} This aligns with the historical significance of black seed in prophetic medicine, echoing the words of Prophet Muhammad.^{28,29}

Sources of information play a pivotal role, with family tradition (19.3%) and health professionals (19%) guiding decision-making. This contrasts with Bangladesh²², where social media and peers were dominant sources. The dichotomy highlights the diverse influences shaping perceptions and practices, emphasizing the need for targeted health communication strategies.

Adverse effects, reported by 16.8% of respondents highlights the importance of vigilant monitoring and education. However, the response to side effects, with 36.6% taking no action, signals a potential gap in awareness and emphasizes the need for proactive healthcare interventions.

Interestingly, alternative therapies like exercise/yoga (22.8%), homeopathy (15.1%), and multivitamins (34%) emerge as concurrent strategies. The prevalence of multivitamin usage resonates with global trends particularly in Hong kong¹⁸, reflecting a shared belief in bolstering immune defenses.

Conclusion

The study's findings carry implications for public health interventions, emphasizing the pivotal role of evidence-based information dissemination. As herbal remedies gain prominence globally, collaborative efforts between traditional practices and established healthcare systems become imperative. Moreover, the study prompts a critical evaluation of the role of social media in shaping health behaviors, advocating for responsible information dissemination in the digital age. While this study illuminates critical facets of herbal remedy usage during the pandemic in Pakistan, it underscores the need for continuous research to navigate the evolving landscape of healthcare practices.

Limitation: The study faces several limitations. Firstly, the reliance on self-reported data for herb usage introduces the potential for recall bias and inaccuracies. Secondly the survey's restriction to social media users may introduce sampling bias,

limiting the generalizability of the findings. Additionally, the lack of information on whether these herbs were commonly used before the pandemic or as everyday kitchen ingredients adds ambiguity to the context of herbal remedy use. Lastly, the absence of specific questions for each herb hinders a detailed analysis of individual herb usage patterns so there is a need for more robust data collection methods and broader sampling strategies in future research.

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