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Original Article

Myths about COVID-19 among Sindh Population: A Survey based Study.

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ABSTRACT

Background: The COVID-19 pandemic has presented unprecedented challenges globally, with misinformation significantly impacting public health responses. The rapid spread of myths and misconceptions, particularly through social media, has necessitated a deeper understanding of the factors influencing public perception and behavior towards COVID-19 preventive measures, transmission, and treatment options.

Objective: This study aimed to quantify the prevalence of COVID-19 related myths among the Sindh population, explore associations with sociodemographic characteristics, and assess the impact of misinformation on public health practices.

Methods: Employing a cross-sectional survey design, we recruited 400 participants using convenience sampling. The survey comprised two parts: demographic information and a structured questionnaire assessing beliefs about COVID-19. Questions were designed to capture myths related to transmission, prevention, treatment, and vaccination. Responses were analyzed using SPSS software version 25, employing descriptive statistics, t-tests, and ANOVA to identify significant associations between demographic factors and susceptibility to myths. Ethical approval was obtained from the Research Ethics Committee of Liaquat University of Medical & Health Sciences.

Results: The study found that 60% of participants harbored high levels of myths about COVID-19. Misconceptions were significantly associated with age, education, occupation, and marital status. Notably, 85% of respondents reported social media as their primary information source. Misconceptions included the efficacy of disinfecting groceries (62%), the risk posed by non-vegetarian food (12%), and misinformation about COVID-19 transmission through mosquitoes (5%). Additionally, there was a widespread belief in ineffective preventive measures and treatments, such as the use of home remedies (55%) and the misconception that vaccines cause COVID-19 (7%).

Conclusion: The high prevalence of COVID-19 myths among the Sindh population highlights the critical role of social media in spreading misinformation. The study underscores the need for targeted interventions to address misinformation and enhance the public's ability to discern reliable information, particularly on digital platforms.

Keywords: COVID-19, myths, misinformation, social media, Sindh population, public health, cross-sectional survey.

INTRODUCTION

Coronavirus disease (COVID-19), triggered by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), was first identified in Wuhan, China, in December 2019. Since its inception, COVID-19 has evolved into a global pandemic, spreading across the world and compelling the scientific community to continuously adapt their understanding of the disease's transmission routes, preventative measures, and treatment protocols. The fluid nature of COVID-19 research, characterized by frequent updates and changes in guidelines, has led to a proliferation of information through various media channels. This constant stream of data, while informative, has also paved the way for the dissemination of inaccuracies and misconceptions about the disease (1, 2). The public's overexposure to a mix of accurate and misleading information about COVID-19, particularly through social media platforms, has fostered the development of myths within communities, impacting public health responses (3-5).

These myths, ranging from misconceptions about the virus's transmission to unfounded prevention and treatment methods, have significant implications. They contribute to practices that may leave individuals more vulnerable to infection, undermining efforts to

Journal of Health and Rehabilitation Research 2791-156X JHRR

control the pandemic. The role of social media in spreading misinformation cannot be overstated; it has become a potent tool for the rapid dissemination of both accurate and inaccurate information related to COVID-19, influencing public perceptions and behaviors (4). Despite efforts to raise awareness and educate the public about COVID-19 through various means—including radio and television advertisements, public health messages, and the distribution of informational materials in public spaces—the persistence of myths among the general population remains a challenge (2-6).

The aim of the study was to ascertain the prevalence of myths related to COVID-19 within the Sindh population, exploring the socio-demographic determinants that may influence the prevalence of these myths. By identifying the most common misconceptions and understanding their spread among different demographic groups, the study sought to address and mitigate the transmission of misinformation, which, in some cases, has proven to be more contagious than the virus itself. This approach not only contributes to a deeper understanding of the nature and spread of COVID-19 myths but also aids in the development of targeted interventions designed to educate the public, thereby reducing the transmission of both the virus and the misconceptions surrounding it. Through this research, the study underscores the critical need for accurate, timely, and accessible information about COVID-19, aiming to diminish the impact of myths on public health efforts and enhance the efficacy of preventative measures against the virus.

MATERIAL AND METHODS

The methodology employed in this study was designed to assess the prevalence and determinants of COVID-19 related myths among the population residing in Sindh, using a quantitative, cross-sectional survey approach. A total of 400 participants were recruited through convenience sampling, ensuring a broad representation of the demographic spectrum within the target region. The study was structured around a questionnaire that served dual purposes: collecting basic demographic information and evaluating participants' beliefs regarding COVID-19 through a series of 19 dichotomous (yes/no) questions. This instrument was developed based on prior survey-based research, aiming to capture a wide array of myths circulating about the disease. Participation in the survey was voluntary, with informed consent obtained from all participants via the questionnaire. Demographic data recorded included age, gender, and level of education, providing a framework for analyzing the influence of these variables on susceptibility to misinformation.

The scoring mechanism devised for the questionnaire assigned one point for each incorrect response, with the exception of Q2, for which the correct answer was 'no.' This approach facilitated a quantitative assessment of participants' misconceptions, allowing for a nuanced analysis of myth prevalence within the study population. The data analysis was performed using SPSS software, version 25, applying descriptive statistics to quantify the frequency and percentage of myths based on demographic characteristics. Comparative analyses were conducted using the t-test for dichotomous variables and analysis of variance (ANOVA) for variables encompassing three or more categories, with a p-value of 0.05 or less deemed indicative of statistical significance.

Inclusion criteria specified that participants must be residents of the Sindh district, aged 18 years or older, and capable of completing the online questionnaire. Health care professionals were excluded from participation to avoid bias stemming from their medical knowledge. The ethical considerations for the study were rigorously addressed, with approval obtained from the Research Ethics Committee of Liaquat University of Medical & Health Sciences (LUMHS), Jamshoro, under the reference number NO.LUMHS/REC/-172, dated 15 October 2021. This study was conducted in adherence to the ethical guidelines outlined in the Declaration of Helsinki, ensuring respect for participant rights, confidentiality, and the ethical treatment of data. The comprehensive approach taken in this study, encompassing both the collection and analysis of data, was aimed at providing an in-depth understanding of COVID-19 myths among the Sindh population. By employing a statistically rigorous methodology and adhering to ethical research practices, the study contributes valuable insights into the factors influencing myth prevalence and offers a foundation for targeted public health interventions.

RESULTS

In the study detailed in Table 2, the assessment of beliefs surrounding COVID-19 unveiled varied convictions among the participants regarding transmission, prevention, treatment, and vaccination. A notable 250 respondents, constituting a majority, endorsed the idea that washing vegetables and groceries with disinfectants is a preventive measure against COVID-19 transmission, contrasting with the 150 dissenting voices. This belief was mirrored in the response to glove usage in public places, where an equal number (250 participants) affirmed its protective efficacy. Regarding diet, 50 individuals mistakenly viewed non-vegetarian food as a transmission risk, while a robust majority of 350 refuted this claim. The misconception surrounding waterborne transmission and vector transmission through houseflies or mosquitoes was relatively low, with 50 and 20 participants, respectively, affirming these routes, a stance overwhelmingly rejected by 350 and 380 participants accordingly. Interestingly, perceptions of breastfeeding during lactation as a risk increased marginally, with 90 affirming versus 310 denying.

Journal of Health and Rehabilitation Research 2791-156X JHRR

Preventative measures drew considerable agreement, with 180 participants incorrectly affirming that drinking warm water could rinse away the virus from one's throat, and a similar number (150) mistakenly trusting in thermal scanners for detecting infected individuals. The belief in reduced oxygen levels due to prolonged mask-wearing also saw a split, with 150 participants endorsing this incorrect notion.

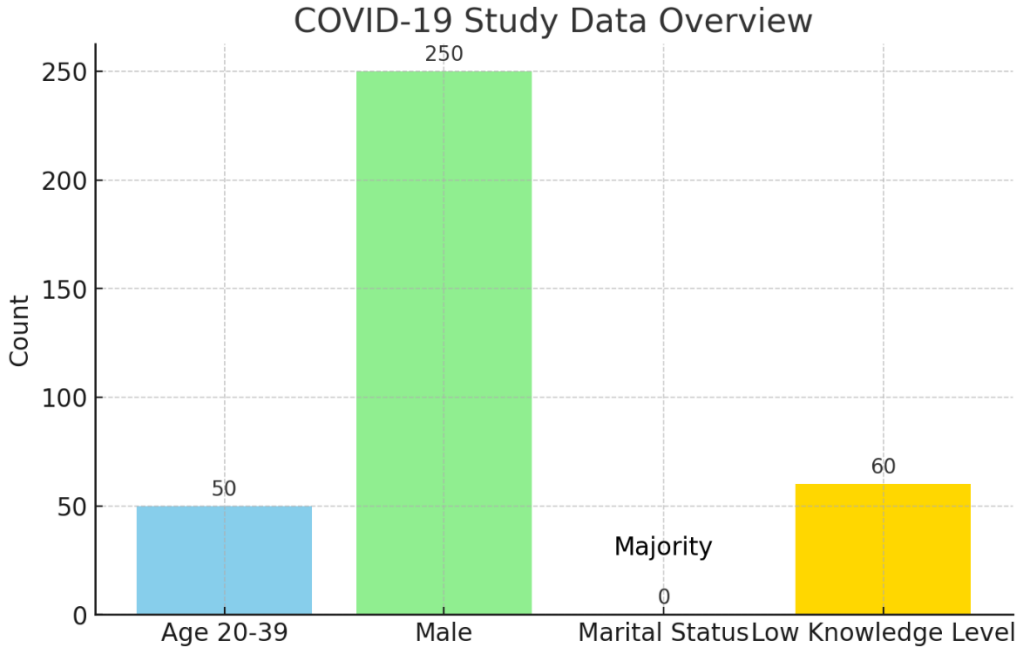

Figure 1 COVID-19 Study Data Overview

When it came to treatment options, a significant number of participants (150) incorrectly believed antibiotics could be effective against COVID-19, and nearly as many (190) held a similar view regarding steam inhalation. Home remedies, including the use of garlic, turmeric, ginger, and pepper, were considered beneficial by 220 participants, indicating a substantial leaning towards unproven treatment methods.

Table 1 Survey results showcasing diverse perceptions on COVID-19's transmission, prevention, treatment, and vaccination among participants.

Statement	Yes (Frequency, Percentage)
Disinfecting groceries prevents transmission	250 (62%)
Non-veg consumption is a risk	50 (12%)
Transmitted through unclean water	50 (12%)
Houseflies/mosquitoes transmit	20 (5%)
Risk increases by breastfeeding	90 (22%)
Drinking warm water rinses virus	180 (45%)
Thermal scanners detect infection	150 (37%)
Masks reduce oxygen levels	150 (37%)
Gloves prevent infection	250 (62%)
No measures needed after recovery	50 (12%)
Antibiotics treat COVID-19	150 (37%)
Steroids guarantee recovery	50 (12%)
Vitamins and minerals treat	180 (45%)
Steam inhalation cures	190 (47%)
Home treatments help (garlic, turmeric, etc.)	220 (55%)
Vaccine causes COVID-19	30 (7%)
Vaccine unsafe due to quick development	20 (5%)
Vaccine causes infertility	20 (5%)
No mask needed after vaccination	20 (5%)
100% immunity after vaccination	40 (10%)

Journal of Health and Rehabilitation Research 2791-156X JHRR

The results regarding vaccination revealed a substantial endorsement of accurate information, with only 30 participants fearing disease acquisition from the vaccine, and a mere 20 expressing concerns over its safety due to rapid development. Misconceptions about vaccines causing infertility or negating the need for masks post-vaccination were limited to 20 respondents each. A slightly higher, yet minimal, number of 40 participants believed in complete immunity post-vaccination, demonstrating a relative trust in vaccination compared to other domains. The numerical values reflect the extent of misconceptions that prevail despite the widespread dissemination of information and highlight the need for continued public education on evidence-based COVID-19 facts.

DISCUSSION

The conducted study aimed to evaluate the prevalence of myths and misconceptions about COVID-19 among the Sindh population, alongside examining the relationship between these myths and various sociodemographic factors. The findings revealed that a significant proportion, approximately 60%, of the participants harbored high levels of myths concerning COVID-19. A detailed analysis further established a statistically significant association between the prevalence of these myths and variables such as age, education, occupation, and marital status. This observation aligns with prior research indicating that demographic factors can influence the susceptibility to misinformation about health-related issues (7). Notably, a vast majority, about 85%, of respondents identified social media as their primary source of information on COVID-19, underscoring the pervasive role of digital platforms in the dissemination of health information. This reliance on social media for information, reported by half of the study participants, underscores the differential access to reliable sources across diverse communities (7).

The study's findings on the misconceptions about transmission methods, particularly the belief held by 50% of participants that disinfecting vegetables and groceries could prevent COVID-19, highlight a common area of misinformation. Such beliefs persist despite the lack of scientific evidence supporting the transmission of COVID-19 through contaminated food items (8). Similarly, the minimal endorsement of the myth that houseflies or mosquitoes could transmit the virus, reported by approximately 2% of the participants, reflects a broader trend of misinformation about transmission vectors, which has been subject to correction by leading health authorities.

The comparative analysis regarding COVID-19 treatments and preventative measures revealed a relatively lower incidence of myths related to vaccination, suggesting a higher level of trust or acceptance in this domain, possibly due to the novelty of the vaccine at the time of the study. This finding is consistent with the stance of the National Institutes of Health, which has not endorsed the use of vitamins or home remedies as effective measures against COVID-19, highlighting the critical need for evidence-based communication regarding treatment and prevention (9-17).

The study's strengths include the positive impact of the health education video provided to participants, which was instrumental in disseminating accurate information about COVID-19. This aspect of the study not only highlights the potential for educational interventions to correct misconceptions but also underscores the value of utilizing digital platforms for public health education. However, the study's reliance on online methodologies introduces a limitation, as it excludes individuals without internet access, potentially skewing the results towards a more digitally literate demographic.

CONCLUSION

In conclusion, the high prevalence of COVID-19 related myths among the Sindh population, particularly those influenced by sociodemographic factors and the predominant use of social media for information, calls for a concerted effort to combat misinformation. The findings advocate for the critical examination of information shared on social media, emphasizing the joint responsibility of individuals and media outlets to verify the credibility of health information before dissemination. Future efforts should focus on enhancing the verification processes for information regarding COVID-19 on social media platforms, aiming to reduce the transmission of myths and support the dissemination of factual, evidence-based information.

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