Bright and Dark Aspects of COVID-19 in the UAE: A Cross-Sectional study

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Abstract

The global landscape underwent a series of transformations in the wake of the COVID-19 pandemic, resulting in an interplay of positive and negative outcomes. This study, aptly titled "Bright and Dark Aspects of COVID-19 in the UAE" seeks to unravel the profound impact of the pandemic on a global scale. It compares the incidence and depth of knowledge related to respiratory infections before and after the pandemic, alongside how COVID-19 has influenced individuals' self-image and body perception. The study deployed a self-administered questionnaire to 466 adults in the UAE, capturing insights both pre- and post-pandemic involving public awareness surrounding respiratory infections and an unforeseen surge in respiratory infections post-COVID-19. Moreover, participants' self-esteem and body perceptions underwent scrutiny, taking into account the psychological impacts of the pandemic, including prolonged isolation, diminished social interaction, and reduced physical activity. The study revealed a rise in public consciousness regarding respiratory infections, coupled with an unanticipated spike in the occurrence of such infections following the COVID-19 pandemic. It also showed diminished self-esteem and negative body image among participants after COVID-19. This research substantially contributes to a nuanced comprehension of the multifaceted implications of the pandemic, encompassing heightened awareness about respiratory infections, as well as detrimental impacts on self-worth and body image.

Keywords: COVID-19, respiratory infection, incidence, self-image, psychosocial, hygiene, disease prevention.

Introduction

The global repercussions of the COVID-19 pandemic were triggered by the identification of Acute Respiratory Syndrome Coronavirus 2 in Wuhan, China. In March 2020, the World Health Organization (WHO) officially classified it as a pandemic due to its widespread infection rate and high mortality rate worldwide[1]. Several studies unveiled a major gap in the recorded number of deaths, undermining the widely accepted scale of the pandemic[2]. The United Arab Emirates (UAE) achieved a reduced mortality rate as a result of prompt

emergency response systems and the implementation of travel restrictions3. The negative consequences encompassed post-traumatic stress disorder, psychosocial consequences, and body image concerns. Gender-based disparities in mental health issues were observed, with females exhibiting elevated affective symptoms4.

The pandemic has also brought favorable aspects, such as heightened consciousness of public health protocols, enhanced hand hygiene practices, and ecological advantages resulting from reduced emissions. It has significantly changed multiple facets of life, emphasizing the need for extensive research and an understanding of its diverse effects. The UAE demonstrated commendable responsiveness to the COVID-19 pandemic, swiftly implementing effective measures that yielded favorable results. Lockdowns led to notable environmental enhancements, such as decreased pollution and waste. E-commerce flourished, demonstrating technological expertise, while online learning, despite obstacles, offered benefits5,6. The nation actively participated in clinical research and vaccination, demonstrating a strong dedication to scientific advancement7.

Despite numerous positive findings, there remains limited information regarding its specific impact on the depth of knowledge concerning respiratory infections and the ensuing influence on individuals' behaviors in relation to respiratory infections. The UAE's expatriates, grappled with economic uncertainties, intensifying anxiety about job loss, and financial struggles. They also experienced negative transformations in physical appearance and self-perception by developing habits such as increased dietary intake, weight gain, decreased physical activity, increased smoking, and decreased sleep8. Frontline workers faced heightened stress, and patients experienced anxiety and depression during hospitalisation. Students, teachers, and administrators faced challenges adapting to the new learning environment, and despite efforts, the psychological impact persisted, reflecting the enduring stress related to health concerns, unemployment fears, and limitations on international travel9. Various factors precipitated an escalation in anxiety, stress, and negative mental health among individuals. Notably, limited travel, prolonged durations spent at home, and the concomitant anxiety and stress levels engendered a cascade of detrimental habits. It is imperative to elucidate the repercussions of COVID-19 on individuals' body perception and self-image.

Nevertheless, the UAE sustained its global competitiveness and demonstrated its ability to adapt to unforeseen changes. The response serves as a worldwide illustration, highlighting the significance of tackling mental health, educational difficulties, and non-COVID health issues in pandemic responses.

Objectives of the study

1. To compare the incidence and change in knowledge of respiratory infections before and after COVID-19 in the general population of UAE.

2. To compare the changes in self-esteem and body perception before and after COVID-19 in the general population of UAE.

Materials and Methods

A cross sectional survey was conducted on adults within the general population of the UAE. The survey consisted of exactly 466 respondents. Prior to commencing the study, ethical permission was obtained from the University Institutional Review Board (IRB) and the survey was validated by three experts. Upon receiving authorization, data was collected. Prior to completing the questionnaire, all participants were obligated to sign a consent form affirming their understanding of the study's confidentiality agreement and having the option to withdraw at any time. In addition, the study ensured the preservation of participants' personal identity by maintaining anonymity. Participants were required to be at least 18 years old in order to partake in the survey. The self-administered questionnaire was used to collect socio-demographic information to ensure that the sample was broadly representative of the general population of the UAE. The questionnaire additionally gathered data regarding personal hygiene practices, frequency of mask utilisation, occurrence of respiratory infections, details on self-esteem, and perception of body image.

The assessment of self-esteem and body perception involved a series of closed-ended questions that were derived from a modified combination of the Rosenberg scale of self-esteem and the Body Image scale. Descriptive statistics were used to determine the percentage and frequency of respiratory infections that occurred as well as participants' self-esteem and body perception before and after the pandemic of COVID-19. A chi-square test was performed to ascertain the association between age, gender, and education in relation to the knowledge of transmission of respiratory infections. The Statistical Package for Social Sciences (SPSS) application was utilised to analyse the data collected.

Results

The study comprised 466 participants, with 57.7% being females and 42.3% males. The age distribution included 20% in the 18-20 age group, 40% in the 20-25 range, 12.4% aged 26-35, and around 27.5% older than the age of 35. Educationally, 12.9% were high school graduates, 61.4% held a bachelor's degree, and 25.8% had a postgraduate degree. Nationality distribution showed 47.7% from the South-East Asian Region, 40.4% from the East Mediterranean Region, and smaller percentages from other regions. Geographically, 42.1% of participants were located in Sharjah, 29.0% in Ajman, 8.8% in Abu Dhabi, and the rest in other emirates. Regarding occupation, 53.9% were No Collar, 21.0% White Collar, 8.6% Pink Collar, 3.4% Blue Collar, 0.2% Red Collar, and 12.9% were retired.

Figure No. 1: Frequency Distribution of Sociodemographic Variables
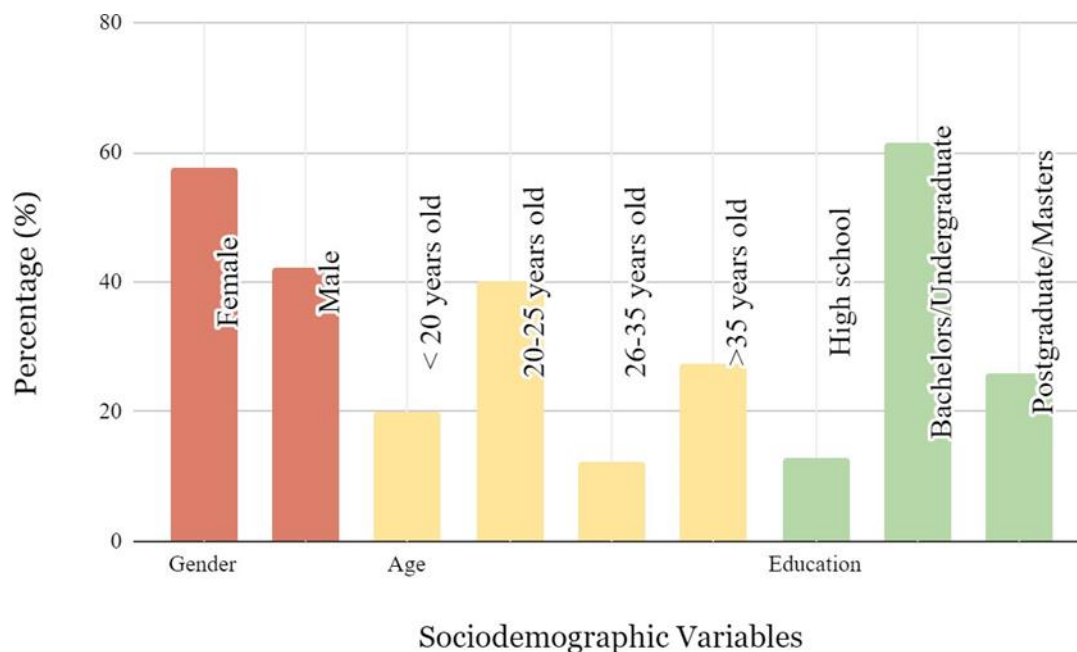
The study assessed the frequency of respiratory symptoms before and after COVID-19. Initially, 20.8% had no fever, decreasing to 15.5% after COVID-19. Cough increased from 55.4% to 62.4%, with a decrease in those coughing four-to-six times or more after COVID-19. Sore throat occurrences rose from 52.8% to 55.4%, and runny nose occurrences remained relatively stable. More participants reported no stuffy nose or only one-to-three instances after COVID-19. Headache frequency slightly increased, with 36.7% having one to three headaches before and 42.3% after COVID-19. Body aches and dyspnea occurrences varied, with a marginal

rise in difficulty breathing after COVID-19. Loss of taste or smell instances increased post-COVID-19.

Table No.1: Frequency of Symptoms Before and After COVID-19

Variable	Group	Before COVID-19		After COVID-19	
		Frequency	%	Frequency	%
Fever	Not at all	97	20.8	72	15.5
	1-3 times	268	57.5	315	67.6
	4-6 times	65	13.9	50	10.7
	More	32	6.9	26	5.6
	I don't know	4	0.9	3	0.6
Cough	Not at all	69	14.8	65	13.9
	1-3 times	258	55.4	291	62.4
	4-6 times	95	20.4	71	15.2
	More	40	8.6	37	7.9
	I don't know	4	0.9	2	0.4
Sore Throat	Not at all	71	15.2	89	19.1
	1-3 times	246	52.8	258	55.4
	4-6 times	111	23.8	85	18.2
	More	35	7.5	31	6.7
	I don't know	3	0.6	3	0.6
Runny Nose	Not at all	61	13.1	84	18.0
	1-3 times	235	50.4	237	50.9
	4-6 times	107	23.0	93	20.0
	More	61	13.1	50	10.7
	I don't know	2	0.4	2	0.4
Headache	Not at all	79	17.0	88	18.9
	1-3 times	171	36.7	197	42.3
	4-6 times	112	24.0	89	19.1
	More	98	21.0	89	19.1
Body Aches	**I don't know** **Not at all**	6 116	1.3 24.9	3 139	0.6 29.8
	1-3 times	192	41.2	198	42.5
	4-6 times	90	19.3	69	14.8
	More	60	12.9	56	12.0
Shortness of Breath	**I don't know** **Not at all**	8 293	1.7 62.9	4 260	.9 55.8
	1-3 times	107	23.0	140	30.0
	4-6 times	35	7.5	33	7.1
	More	26	5.6	30	6.4
	I don't know **Not at all**	5 359	1.1 77.0	3 288	0.6 61.8

Loss of Taste or Smell	1-3 times	71	15.2	132	28.3
	4-6 times	22	4.7	26	5.6
	More	11	2.4	16	3.4
	I don't know	3	0.6	4	0.9

Before COVID-19, 69.3% (323 participants) had knowledge of mitigating respiratory infections, which increased to 96.1% (448 participants) after the pandemic. The number lacking knowledge decreased from 30.7% (143 participants) to 3.9% (18 participants). Handwashing practices rose from 83.5% to 97.0% post-COVID-19, with a decrease in non-compliance from 16.5% to 3.0%.

Awareness of mask usage increased, with 61.4% (286 participants) uninformed before COVID-19, decreasing to 4.1% (19 participants) post-COVID-19. Similarly, knowledge of social distancing rose from 62.7% (292 participants) to 95.7% (20 participants). Over 80% were aware of avoiding sick individuals before and after COVID-19. Knowledge of the importance of vaccination increased from 68.7% (320 participants) to 95.9% (447 participants) after COVID-19.

Table No.2: Awareness of the Following Practices Before and After COVID-19

Variable	Before COVID-19				After COVID-19			
	Yes		No		Yes		No	
	No.	%	No.	%	No.	%	No.	%
Knowledge on risk of respiratory infections	323	69.3	143	30.7	448	96.1	18	3.9
Wash your hands frequently	389	83.5	77	16.5	452	97.0	14	3.0
Wear a mask in public	180	38.6	286	61.4	447	95.9	19	4.1
Practise social distancing	174	37.3	292	62.7	446	95.7	20	4.3
Avoid close contact with sick people	376	80.7	90	19.3	447	95.9	19	4.1
Get vaccinated	320	68.7	146	31.3	447	95.9	19	4.1

The correlation between pre-COVID-19 awareness of transmission of respiratory infections and sociodemographic variables is elucidated in the accompanying table. Notably, the analysis revealed no statistically significant association between age or education and awareness. However, a distinct and statistically significant association was observed with respect to gender. Specifically, the level of awareness was markedly higher among females in comparison to males. Among females, the awareness rate stood at 85%, whereas among males, it hovered around 73%. This discrepancy underscores a noteworthy gender-based disparity in the level of awareness regarding the transmission of respiratory infections before the advent of COVID-19.

Table No. 3: Association between Pre-COVID-19 Awareness of Respiratory Infection Transmission and Sociodemographic Factors

Variable	Group	Awareness of transmission of respiratory infections: Before the COVID-19 pandemic					P
		Yes		No		Total	
		No.	%	No.	%		
Age	<20	79	84.9	14	15.1	93	NS
	20-25	147	78.6	40	21.4	187	
	26-35	45	77.6	13	22.4	58	
	>35	101	78.9	27	21.1	128	
Gender	Female	229	85.1	40	14.9	269	<0.001
	Male	143	72.6	54	27.4	197	
Education	Highschool	53	88.3	7	11.7	60	NS
	Undergraduate	227	79.4	59	20.6	286	
	Postgraduate	92	76.7	28	23.3	120	

Compared to before-COVID-19, an increased concern of acquiring respiratory infections was noted, where the population that was not at all concerned decreased from 25.3% to 6.9%, Those slightly concerned changed

from 32.0% to 24.9%, Moderately concerned from 32.4% to 32.2%, the Very concerned population increased from 6.4% to 22.7% and those facing extreme concern increased from 3.9% to 13.3%.

Table No.4: Concern Regarding Respiratory Infection Pre- and Post-COVID-19

Concern Regarding Respiratory Infection	Before COVID-19		After COVID-19	
	Frequency	Percentage	Frequency	Percentage
Not at all	118	25.3	32	6.9
Slightly concerned	149	32.0	116	24.9
Moderately concerned	151	32.4	150	32.2
Very concerned	30	6.4	106	22.7
Extremely concerned	18	3.9	62	13.3

This study examines self-esteem and body perception before and after COVID-19. Prior to COVID-19, 0.4% "strongly disagreed," consistent after. "Disagreed" increased from 2.6% to 3.4%, "neutral" remained around 18%. "Agreed" decreased slightly from 42.5% to 40.6%, and "strongly agree" stayed stable at 36.3% before and 36.8% after.

Regarding viewing themselves as failures, "strongly disagreed" remained at 22.1%, while "disagreed" shifted from 36.3% to 34.5%. "Neutral" decreased from 22.1% to 21.0%. "Agreed" rose from 12.4% to 15.7%, and "strongly agree" slightly decreased from 7.1% to 6.9%.

Participants' perception of task performance saw "strongly disagreed" increase from 0.6% to 0.9%. "Disagreed" doubled from 2.8% to 5.6%. "Neutral" grew from 18.2% to 20.2%. "Agreed" slightly decreased from 42.9% to 39.9%, and "strongly agree" dipped from 35.4% to 33.5%.

Concerning body influence on well-being, "strongly disagreed" slightly decreased from 1.5% to 1.3%. "Disagreed" shifted from 6.4% to 4.1%. "Neutral" decreased from 28.5% to 20.8%. "Agreed" remained stable at 36.3%, and "strongly agree" increased from 27.3% to 37.1%. In terms of body comparisons, "strongly disagreed" remained at 10.7%. "Disagreed" decreased from 17.2% to 15%. "Neutral" decreased from 30.9% to 23.2%. "Agreed" remained stable at 29.6%, and "strongly agree" increased from 11.6% to 20.4%. For attention to appearance, "strongly disagreed" decreased from 2.4% to 1.7%. "Disagreed" decreased from 7.3% to 4.1%.

"Neutral" decreased from 30.9% to 23.2%. "Agreed" increased from 38.6% to 41.2%, and "strongly agree" rose from 23.4% to 32.8%.

On body size importance, "strong disagreement" remained at 4.9%. "Disagreed" decreased from 9.4% to 8.2%. "Neutral" decreased from 32.2% to 23.4%. "Agreed" increased from 32.8% to 35.6%, and "strongly agree" rose from 20.6% to 27.9%.

Regarding awareness in social settings, "strongly disagreed" remained at 3.4%. "Disagreed" decreased from 12.2% to 10.1%. "Neutral" decreased from 30.0% to 19.7%. "Agreed" increased from 36.5% to 37.6%, and "strongly agree" rose from 17.8% to 29.2%.

The study also demonstrates that 279 participants (59.9%) had a prior COVID-19 diagnosis. Challenges accessing healthcare were reported by 54.9%, while 54.9% experienced job loss or financial difficulties linked to the pandemic. High levels of stress, anxiety, and depression were prevalent in 78.1% of participants. Additionally, 78.1% noted that misinformation or conspiracy theories impacted their trust in official health sources during the COVID-19 pandemic.

Table No.5: Assessment of Self-Esteem and Body Perception Before and After COVID-19

Variable	Group	Before COVID-19		After COVID-19	
		Frequency	%	Frequency	%
I feel that I am a person of worth, at least on an equal plane with others.	Strongly Disagree	2	0.4	2	0.4
	Disagree	12	2.6	16	3.4
	Neutral	85	18.2	87	18.7
	Agree	198	42.5	189	40.6
	Strongly Agree	169	36.3	171	36.8
All in all, I am inclined to feel that I am a failure	Strongly Disagree	103	22.1	102	21.9
	Disagree	169	36.3	161	34.5
	Neutral	103	22.1	98	21.0
	Agree	58	12.4	73	15.7

I am able to do things as well as most other people.	Strongly Agree	33	7.1	32	6.9
	Strongly Disagree	3	.6	4	.9
	Disagree	13	2.8	26	5.6
	Neutral	85	18.2	94	20.2
	Agree	200	42.9	186	39.9
How well my body is functioning influences the way I feel about my body	Strongly Agree	165	35.4	156	33.5
	Strongly Disagree	7	1.5	6	1.3
	Disagree	30	6.4	19	4.1
	Neutral	133	28.5	97	20.8
	Agree	169	36.3	171	36.7
Body size matters to me.	Strongly Agree	127	27.3	173	37.1
	Strongly Disagree	23	4.9	23	4.9
	Disagree	44	9.4	38	8.2
	Neutral	150	32.2	109	23.4
	Agree	153	32.8	166	35.6
Most days I feel bad about my body.	Strongly Agree	96	20.6	130	27.9
	Strongly Disagree	61	13.1	60	12.9
	Disagree	137	29.4	125	26.8
	Neutral	153	32.8	120	25.8
	Agree	78	16.7	93	20.0
	Strongly Agree	37	7.9	68	14.6

Discussion

The COVID-19 pandemic has led to a significant rise in knowledge about respiratory infections, with an increased awareness among individuals regarding the transmission of these infections and the necessary preventive measures to mitigate their spread. However, there is a noticeable rise in the occurrence of respiratory infections following the pandemic. This paradox is attributed to a decline in body image and self-esteem, as individuals express discontentment with their physical appearance and a decline in their sense of worth. Post-COVID-19, participants who reported symptoms such as fever, cough, shortness of breath, difficulty breathing, loss of taste or smell saw an increase. This contrasts with other nations, such as Australia and New Zealand, where the number of cases of respiratory infections has been declining10. A study conducted in three public hospitals in Madrid, Spain, found that nearly one-fifth of the assessed individuals

were completely free of respiratory post-COVID-19 symptoms. Long-term symptoms varied, with cough and chest pain being less common, and dyspnea and fatigue were identified as the most prevalent respiratory post-COVID-19 symptoms among those previously hospitalized11.

Public awareness of respiratory infections significantly increased during the pandemic, with the percentage of individuals gaining new information jumping from 25.7% to 66.5%. This surge is attributed to widespread information dissemination through news outlets, social media, public health campaigns, and educational materials. The implementation of public health measures and campaigns, along with personal experiences during the COVID-19 pandemic, increased awareness about respiratory infections, hygiene, mask-wearing, and social distancing. However post-COVID-19, a higher percentage of people expressed increased concern about contracting respiratory infections, possibly linked to heightened awareness and changing health attitudes.

Factors such as improved access to healthcare services and the availability of telemedicine might have contributed to this trend. Unexpectedly, there was a post-pandemic increase in the frequency of individuals contracting respiratory infections, rising from 76.9% to 81.7%. Possible contributors include incomplete compliance with preventative measures, human error, forgetfulness, and the presence of asymptomatic carriers.

The study observed a decrease in self-esteem and a significant adverse body perception when assessed with a set of agree-disagree statements derived from the Rosenberg scale. The study revealed an increase in the percentage of participants who expressed disagreement with the notion that they possess self-worth. This decline in self-esteem may be attributed to the adverse consequences of COVID-19, which have significantly impacted individuals' mental well-being due to prolonged isolation, reduced social interaction and support, decreased physical activity, and heightened engagement with social media. Similarly, a study examining the prevalence of self-esteem among university students in Saudi Arabia revealed that 75% of students encountered varying degrees of depression, with approximately 41% of students reporting low self-esteem12. The change in teaching methods and uncertain job prospects have negatively impacted students' mental health, leading to increased stress, anxiety, and depressive symptoms.

The COVID-19 pandemic has significantly impacted body perception, leading to a reduction in self-esteem and discomfort for many individuals. A Danish study found that participants with low mental well-being and

depression experienced a significant increase in average weight, which can be attributed to the extended shutdown of educational institutions, sports centers, and gym facilities due to the pandemic13. This lack of physical activity has had a detrimental effect on body perception following the pandemic. Over half of the participants also acknowledged experiencing an enhanced awareness of their physical appearance in social settings, indicating an escalation in self-awareness following the pandemic13. Another study revealed that over 50% of

U.S. adults abstained from engaging in any form of muscle-strengthening exercise in 2019, and this proportion slightly rose in the subsequent year, 2020. A lack of physical activity was linked to higher likelihood of perceiving one's health negatively among adults in both 2019 and 202014.

The quality of life post-COVID-19 was also affected, with approximately 60% of participants receiving a diagnosis of COVID-19. More than 50% of the participants acknowledged encountering challenges in accessing healthcare, as well as financial difficulties and job loss. The COVID-19 pandemic has significantly complicated the provision of facility-based care for individuals with chronic conditions, such as chronic obstructive pulmonary disease, diabetes, and hypertension. Moreover, a significant majority of participants, specifically 77.5%, encountered interruptions in their education. An even higher percentage of individuals, notably 78.1%, reported experiencing higher levels of stress and anxiety, along with distrust towards official health sources. Post-COVID-19, anxiety was the most commonly reported mental health symptom, with prevalence rates ranging from 6.5% to 63%. Depression was the second most common psychological symptom, with prevalence rates ranging up to 31% in follow-up periods exceeding one month after COVID-19. Post-traumatic stress disorder emerged as a frequently observed mental health issue following the pandemic, with prevalence rates reaching 47%.

The study provides a comprehensive understanding of the multifaceted impacts of COVID-19, including increased knowledge and concerns about respiratory infections, adverse effects on self-esteem, body perception, quality of life, and mental health among individuals. It highlights paradoxical trends, such as an increase in respiratory infections despite heightened awareness, suggesting that factors beyond knowledge influence health outcomes. The study also sheds light on the psychological repercussions of the pandemic, such as diminished self-esteem, adverse body perception, heightened anxiety, and stress, extending beyond physical health impacts. This insight contributes significantly to the existing scientific understanding of mental health during pandemics, emphasizing the need for comprehensive support systems to address the

psychosocial repercussions of such crises.

However, the study is subject to some limitations, including sampling bias, cross-sectional design, reliance on self-reported data, absence of pre-pandemic baseline data, focus on short-term effects after the pandemic, limited insight into the effectiveness of specific preventive measures, and lack of specific inquiry into ongoing adherence to precautionary measures. These limitations underscore the need for cautious interpretation of the study's findings and highlight areas for potential refinement in future research endeavors.

Conclusion

This cross-sectional study explores shifts in the occurrences of respiratory infections, knowledge, self-esteem, and body perception before and after the COVID-19 pandemic. The findings suggest a better awareness of how respiratory infections are transmitted and the preventive measures to be taken after the pandemic. Nevertheless, there has been an increase in respiratory infections and a notable decrease in body image and self-esteem following the COVID-19 pandemic. The findings, while recognizing the limitations of the study, suggest the need for further investigation into the impact of the pandemic on knowledge, behaviors, and mental health. In order to improve the external reliability, it is essential to include a diverse sample. Assessing the effectiveness of preventive measures, grasping individual vulnerabilities, and investigating factors that contribute to surges in infections after the pandemic are crucial for developing well-informed public health strategies. Evaluating the influence of government policies on public knowledge, socioeconomic consequences, and the effectiveness of mental health interventions is crucial for improving crisis management and taking proactive measures for future crises.

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