PSYCHOLOGICAL ASPECTS AND EATING HABITS IN KHUZESTAN, IRAN, DURING THE COVID-19 PANDEMIC

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Abstract

Introduction: The coronavirus (COVID-19) outbreak has had a profound impact on the lifestyle of the people. Changes in lifestyle and eating habits, in particular, may pose a significant threat to public health. This study aims to evaluate the impact of the COVID-19 pandemic on psychological aspects and eating habits in Khuzestan, Iran.

Methodology: The present study was a descriptive-cross sectional study conducted using an online questionnaire between Dey 1399 and Khordad 1400. A total of 347 questionnaires were obtained and statistically analyzed.

Findings: The average age of the participants was 33.94 ± 10.20 years. A large percentage of respondents had experienced anxiety (72%), depressed mood (62.70%), stress and fatigue (46.40%), and insomnia (40.30%) during the COVID-19 period. Twenty-nine percent of subjects stated that they needed to consume food to have less anxiety and feel better. The results demonstrate that age (p-value=0.010) and living alone without family or with a housemate other than family (p-value=0.006) were significantly associated with the emotional state during the coronavirus pandemic. In addition, the impaired emotional state was more evident with increasing BMI (p-value=0.020).

Conclusion: The study suggests that the COVID-19 pandemic has affected people's emotional status and eating habits.

Keywords: COVID-19; lifestyle; eating habits; psychological factors.

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Introduction

The novel SARS-COV-2 virus belongs to the coronavirus family and is a natural and biological hazard. This newly emerged hazard started in Wuhan, China, and by now has spread all around the globe [1]. At the start of the global pandemic, some countries like Iran and Italy were hit hard by the virus. According to World Health Organization (WHO) statistics, as of November 2022, the total number of COVID-19 infections was 635743298, with a death toll of over 6594797 worldwide [2].

From the beginning of the pandemic, particularly after the declaration of a global emergency by WHO, the virus spread became a priority of governments and health officials in countries worldwide. Given the coronavirus's high virulence and transmission capacity, the WHO declared a state of emergency on February 4, 2020, recommending that countries reduce the person-to-person transmission of COVID-19 by limiting the contact of individuals, including the infected people and patients, and contain its global spread. Nonetheless, this approach has been ineffective, and the surge in the number of infected people suggested the presence of a large number of asymptomatic carriers of COVID-19 in the population. Under these circumstances, the best preventive recommendation proved to be staying at home [4]. Quarantine and stay-at-home orders for a large population of society have a devastating effect on the lifestyle of the people [4]. It is evident that during the crisis conditions, the individual and social life structures will be in turmoil. Lifestyle is a way of living with specific behavioral patterns and is governed by the personal characteristics and social interactions of the individual, and the environmental and socioeconomic conditions [6]. A healthy lifestyle involves both physical and mental aspects. From a mental aspect, it consists of social communication, confronting

stress, and spirituality [7]. With the emergence and spread of the COVID-19 virus, the lifestyle of everybody has changed in a way no one could have predicted [4]. Imposed changes in lifestyle and particularly eating habits might threaten health. In addition to boredom, continuous exposure to COVID-19 news can be stressful. Stress can trigger overeating and cravings, especially for processed and fast foods in people. The findings of the study by Renzo et al. suggest that negative emotions like anxiety and depression can cause increased emotional hunger [8]. In addition, home quarantine disturbs the individual's life routine. Social isolation is associated with outcomes including inactivity, weight gain, obesity, concomitant diseases, boredom, and mental disorders such as depression and anxiety [9]. In their study, Liu et al. reported that SARS patients experienced fatigue, lack of comfort and convenience, lack of family support, and emotional disruption after a period in quarantine [10].

The behavioral patterns need to be tailored to social changes and environmental conditions. The economic, social, and cultural evolutions in societies affect the family institution and people's lives. Moreover, a healthy lifestyle is on an evolutionary continuum, and healthy behavior influences the evolution sequence and appropriate action in every stage of life [11]. Thus, lifestyle modifications according to the occurring evolutions seem necessary. The lifestyle evaluation can help identify incorrect changes and correct them [12].

Among healthcare workers responsible for protecting public health, nurses have a closer relationship with society. They undertake many significant roles, including clinical care, consultation, correct implementation of the treatment, patient training, and instruction of preventive measures. Thus, they have direct and indirect responsibility to the

patients [13]. As the largest group of health team workers, nurses have a potential and ideal role in health promotion [14]. Health promotion is an essential component of nursing performance which highlights the patient empowerment for self-care to improve their health.

Given their professional role in delivering health care, nurses can inform and support patients regarding healthy behaviors [15]. Studies have shown that nurses can determine the sanitation and health needs in society and play a key role in health promotion in all communities [16].

Given these considerations and the nurses' empowerment in this area, identifying the lifestyle changes in society can help find strategies for better lifestyle correction based on the stage people are in now. The present study aims to evaluate the psychological aspects and changes in eating habits during the COVID-19 crisis. The results of this study can provide insight to health officials and policymakers to develop effective confronting strategies and plan necessary educational and cultural programs at the appropriate time.

Methodology

This study used a descriptive cross-sectional design that included a study population of all individuals aged 12 to 86 years in Khuzestan. Following previous studies, a sample size of 400 individuals was determined using MedCalc statistical software with a power of 90% and an error of 10%. The inclusion criteria for the study were age above 15 years, literacy to read and write, and access to social media popular in Iran. Incomplete questionnaires were excluded from the study. The sample was selected using a convenient sampling method from Dey 1399 to Khordad 1400. The study received the approval of the ethics committee at Ahvaz University of Medical Sciences. After verifying the reliability and validity, the link to the online questionnaire was posted on common social media platforms in Iran, including Telegram, Eitaa, Soroush, and WhatsApp. Individuals in these social media groups were asked to complete the questionnaire and send it to their friends and acquaintances.

The questionnaire in the 2020 study by Renzo et al. was used in this study. This measurement tool consisted of four questions on demographic information (age, gender, place of residence, current occupation), two on anthropometric data, including height and weight, and 17 questions related to lifestyle changes and psychological aspects with yes/no answers. This questionnaire is a standardized instrument and has passed all reliability and validity analyses during its creation. Since there was no valid Persian version of this questionnaire, the developer was contacted via email and asked for permission to use the questionnaire. The Persian version was then prepared by translation and back-translation between Persian and English. First, two experienced English translators familiar with health issues translated the questionnaire into Persian. After scrutiny and cultural adaptation, two independent language experts back-translated the Persian version into English with minor modifications. The back-translated version was sent to and approved by the developer. The questionnaire was final when the original and back-translated versions matched closely. Ten experts from the Nursing Faculty checked the questionnaire's content validity and apparent validity. The main instrument was finalized after the necessary changes (Cvr=0.79 and cvi=0.81). Internal consistency reliability was assessed using Cronbach's alpha, and outcome consistency using the test-retest method. For this purpose, 30 eligible participants completed the questionnaire twice, 14 days apart. The reliability of the questionnaire was 0.82 using the Kuder-Richardson test. The received questionnaires were coded

and analyzed using SPSS statistical software, version 22.

Findings

This web-based descriptive cross-sectional study was conducted using an electronic questionnaire from Dey 1399 to Khordad 1400 (6 months). After data validation, 347 respondents aged 12 to 86 years were included. Chi-square, multivariate regression, logistic regression, and descriptive statistical tests were used for data analysis.

Demographic characteristics

The mean age of participants was 33.94 ± 10.20 years and ranged from 12 to 71 years. Of the 347 subjects studied, 275 (79.3%) were female, and 72 (20.7%) were male. All (100%) participants in the study resided in Khuzestan province. The majority had university degrees at the bachelor's (46.1%), master's (13.5%), and Ph.D. (9%) levels. 22.5% had a high school diploma, and 17% had less than a high school diploma. 48.4% of respondents lived with their spouse and children, 35.4% with their parents, and 11.2% with their spouse. 40.3% were suspended from work, and 30.4% were unemployed. The mean weight and height of the participants were 69.61 ± 14.72 kg and 163.35 ± 9.42 cm, respectively. 68.6% of the subjects were overweight (Table 1).

Table 1: Demographic characteristics

		N
Age	12-30	107 (30.9%)
	31-50	223 (64.5%)
	51-86	16 (4.6%)
Gender	Male	72 (20.7%)
	Female	275 (79.3%)
Place of residence	Khuzestan	347 (100%)
Education level	Less than a high school diploma	59 (17%)
	High school diploma	78 (22.5%)
	Bachelor	160 (46.1%)
	Master	47 (13.5%)
	Doctorate	3 (9%)
With whom do you live at home	Alone	7 (2%)
	Housemate	1 (3%)
	Friends	2 (6%)
	Spouse	39 (11.2%)
	Parents	123 (35.4%)
	Children	7 (2%)
	Spouse and children	168 (48.4%)
Occupation	Unemployed	105 (30.4%)
	Retired	15 (4.3%)

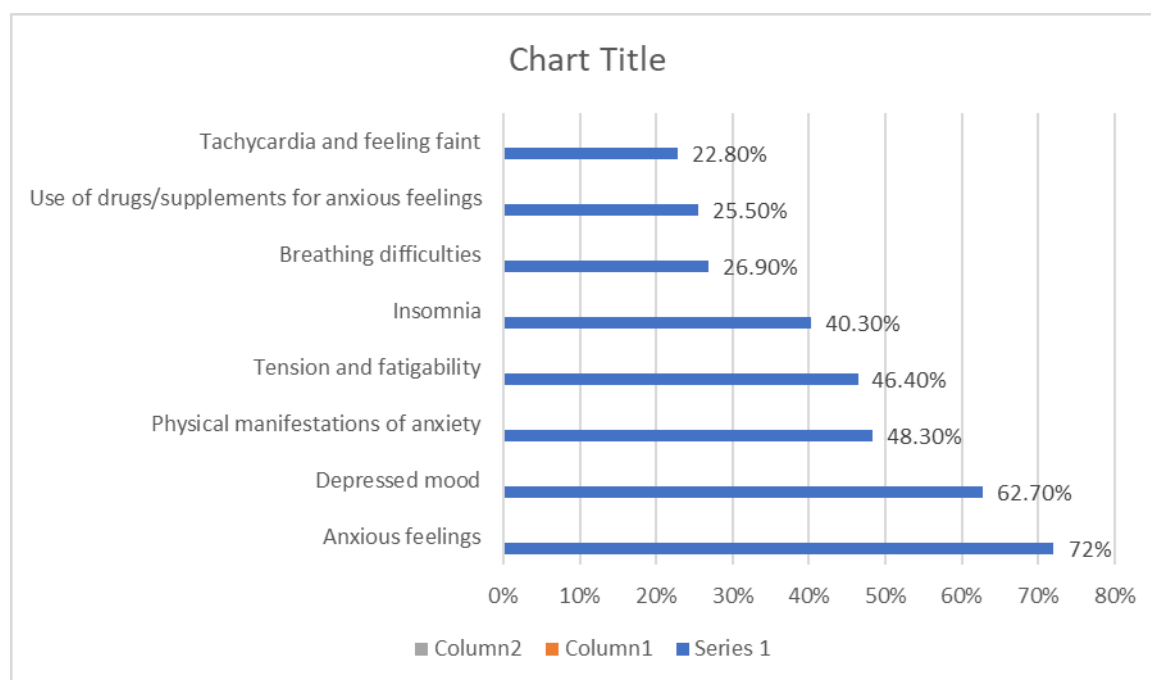| | Student | 37 (10.7%) |
	I work at home using smart technologies	37 (10.7%)
	I go to work as usual	12 (3.5%)
	Currently, I have suspended my work.	139 (40.3%)
BMI	Lean	12 (3.5%)
	Normal	82 (23.6%)
	Overweight	238 (68.6%)
	Obese	15 (43%)

Frequency is expressed as a number (percentage).

Emotional state during the COVID-19 emergency

A rating scale was used to assess depressed mood, anxious feelings, physical manifestations of anxiety (tachycardia, headache, sweating), stress and fatigue experienced (ready to cry, trem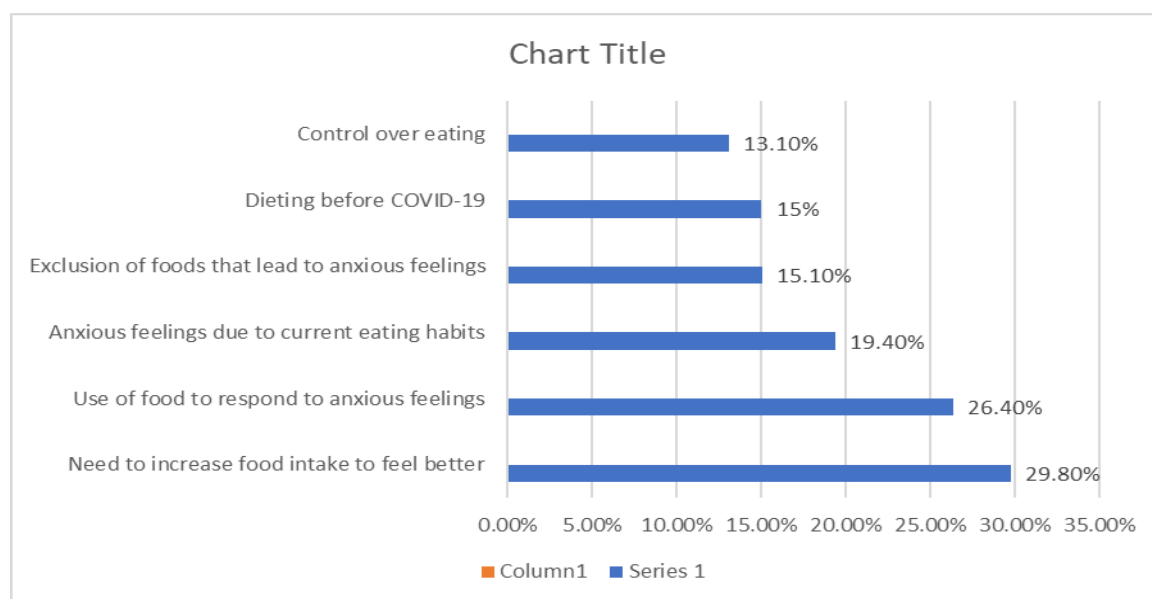ble, restlessness, inability to relax), respiratory problems (sighing, feeling of choking, chest pressure, short breath), depressed mood, tachycardia experience, and perception of fainting (heart palpitations, chest pain), using medications and supplements for anxious mood. This figure includes the percentage of positive responses regarding insomnia (Table 2).

Table 2: Percentage of positive responses to the questions extrapolated from the Hamilton depression rating scale

Emotional eating behavior during the COVID-19 emergency

Table 3: Positive responses to the questions regarding emotional eating behavior. Questions were derived from the Yale Food Addiction Scale

Relationship between demographic characteristics and emotional state and emotional eating behaviors during the coronavirus pandemic

The relationship between demographic variables and emotional state and emotional eating behaviors was analyzed using a univariate chi-square test. The results showed that age, BMI, and having a housemate were significantly associated with the Q3 of the emotional state questionnaire during the coronavirus pandemic. Question 3 of the emotional state questionnaire measured the anxious feelings of participants during the COVID-19 period. However, no significant difference was seen between other emotional state items and emotional eating behavior items in men and women. A logistic regression analysis to examine the simultaneous effect of the variables found no significant relationship between the variables (Table 4).

Table 4: The age, BMI, and housemate are separately associated with Q3 of the emotional state questionnaire (participants' anxiety during the coronavirus period)

Anxiety experiences during the COVID-19 period						
Variable		Yes	No	Total sum	Statistic test	P-value
Gender	Men	47 (65.3)	25 (34.7)	72	2.02	0.156
	women	202 (73.7)	72 (26.3)	274		
Age	10-30	68 (63.6)	39 (36.4)	107	9.09	0.010
	31-50	172 (77.5)	50 (22.5)	222		
	51-86	9 (56.3)	7 (43.8)	16		
BMI	Lean	6 (50.0)	6 (50.0)	12	9.85	0.020
	Normal	51 (62.2)	31 (37.8)	82		
	Overweight	179 (75.5)	58 (24.5)	237		
	Obese	13 (86.7)	2 (13.3)	15		
Cohabitation	1	4 (44.4)	5 (55.6)	9	10.36	0.006
	2	79 (64.2)	44 (35.8)	123		
	3	166 (77.6)	48 (22.4)	214		

Discussion

This study evaluated the mood and dietary outcomes during the social confinement period by COVID-19 in Khuzestan, Iran. There was a female predominance in this sample. Additionally, most respondents cohabited with their families. Lockdown and isolation have undoubtedly affected the morale of participants. 62.70% of subjects developed low mood, which agrees with other studies performed during the COVID-19 lockdown [17-25]. However, anxiety during COVID-19 can be a natural outcome and reaction to feeling danger and is not essentially indicative of a disorder or pathological state.

In addition, subjects experienced increased insomnia, anxious feeling, and physical symptoms of anxiety, stress, and fatigue during this period. Yet, the frequencies of these symptoms were lower than those reported by Di Renzo et al. [26]. This observed difference is attributable to the higher rate of living with family in our participants. People who have a sense of belonging to a group and can trust their support are less likely to feel isolated and consequently experience lower stress and anxiety levels. Studies have shown that the lives of parents, children, and families have undergone drastic changes during this period, both positive and negative. Families had to try hard to find ways to cope with the new challenges. Nevertheless, these conditions have possibly helped bring family members closer [27].

Half of the respondents reported insomnia, stress, anxiety, and depressed mood. However, they did not need medicine or supplement to control anxiety, which can be due to the low severity of symptoms, fear of drug addiction, and future withdrawal outcomes. In addition, since confinement by COVID-19 was a common collective experience worldwide, they considered it a normal situation that did not need any drugs or supplements.

In the analysis by gender, there was no significant difference in anxious feelings between males and females. This finding was consistent with the study by Mardani et al., which explored depression and anxiety levels due to the COVID-19 outbreak in the City of Ahvaz [28]. However, it contradicts other past studies [19, 29-30]. The anxious feeling seems more pronounced in women due to their physiological responses to stressful triggers. The lack of gender difference in our study may be justified by the fact that men experienced similar anxiety levels in this period due to exposure to employment insecurity and economic and financial challenges. Dai et al. reported higher mental distress and lower life satisfaction and health score in those who lost their jobs due to the COVID-19 pandemic [31].

Consistent with the study by Huang et al. [32], our findings demonstrated that participants in the age group 3-60 years experienced higher anxiety levels. This age group is actively involved in society and constitutes most of the working force. However, lockdown and social restrictions due to COVID-19 have negatively affected employment status, with more than half of people losing their jobs or being suspended. Employment insecurities and fear of infection may lead to increased emotional and anxiety disorders in this group.

This survey also examined the relationship between mental and emotional state and eating habits during the COVID-19 pandemic. Of all participants, only 15% continued their routine diet as before the coronavirus period, and 29 percent stated that they needed food to feel less anxious and feel better, which corroborates other studies performed during the pandemic [26, 33-34]. Lockdown and homestay appear to have influenced the ability to follow and maintain a dietary regime. Negative feelings such as anxiety, stress, and depression can be a chief reason for the rise in hunger sensations. Other factors

can include homestay and its resulting boredom and inaction, physical inactivity, and having more time to consume food. In addition, the risks of overeating, such as weight gain and obesity, can contribute to increased anxiety and depression.

The results of this study indicate that age (p-value=0.010), BMI (p-value=0.020), and living alone or with a roommate (p-value=0.006) were significantly associated with anxious feelings during the coronavirus period. As previously mentioned, lockdown and suspension from work can elicit anxiety in young and middle-aged people. Long hours of staying at home and subsequently consuming more food, the closure of gyms, and inactivity aggravated weight gain in people with higher BMI, which was another factor for increased anxiety. Moreover, a sense of lacking family support and protection can provoke anxiety disorders in those living alone and far from family [18, 20].

Conclusion

Based on the findings of these studies, the coronavirus disease 2019 has caused dramatic changes in people's lifestyles, and these changes are expected to continue for an extended time. Further research seems necessary to identify these problems. Given the significant association between age, BMI, and lifestyle with emotional state and eating habits, developing and implementing training programs are needed to better support the people in society.

Acknowledgments

Limitations

A primary limitation of the present research was that this study was performed at a specific period of time. The continuation and progression of COVID-19 infection have changed normal life routines, daily activities, and social communication. Under these circumstances, psychological impacts might become either more profound or less profound due to getting used to this way of living. Thus, repeated and periodic evaluation may be warranted. Another limitation was that this cross-sectional design was carried out based on the volunteers' self-report, a problem inherent to these studies.

Conflict of interest

The authors declare they have no conflict of interest in the present study.

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