Mental health impact of the COVID-19 Pandemic on Iranian university students

Abstract

The outbreak of Covid-19 killed thousands of people and induced social isolation in many more due to the lockdown to reduce the spread of the virus. This study examines the changes in mental health in Iranian university students during and after the Covid-19 pandemic. The data was collected through a questionnaire which was conducted physically among 300 participants. The questions were developed by reviewing previous similar studies. The data of this study were analyzed using SPSS statistics with the guidance of a statistical expert. After the Covid-19 pandemic, average life satisfaction and hope for the future dropped significantly in men and women. The collected data shows that the self-report scores given to life satisfaction, anger, stress, fear of society, obsessive-compulsive behaviors, and sadness are significantly different before and after the Covid-19 pandemic. The results show meaningful relations between aggression and changes in fear of society, stress levels, anger, obsessive-compulsive behaviors, sadness, and life satisfaction before and after the pandemic. This study investigated that prior mental and physical disorders extent of friend circle, and relationship with housemates had impacts on self-confidence. It is expected from researchers, policymakers, and health organizations to make interventions to balance physical health alongside maintaining and improving the well-being of people mentally and socially in times of quarantine.

Keywords: *COVID-19 pandemic; Mental health; physical health; effects Covid- 19*

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1. Introduction

The Covid-19 pandemic has affected every aspect of day to day life of millions of people worldwide. Iran has been one of the countries with the highest rates of coronavirus cases [1]. This study explores the changes in mental health status during and after the quarantine. The focus is on Iranian young adults aged 18-35; given that increases in mental health issues have been greater than expected in this age group [2-3]. Due to the threat of this virus, the government enforced strict limitations including lockdowns. This had a serious impact on social contact, the ability to work, daily life, and mental health [4]. Various studies showed an increase in mental health issues around the world in the years preceding 2020[5]. Impacts on mental health were also seen in previous outbreaks such as the Ebola epidemic [6]and middle east respiratory syndrome (MERS) [7]. Studies show a rise in mental distress during the Covid-19 outbreak in Iran. Females and younger people are more vulnerable to this risk [8].

However, the damage to mental health might not be the same for all people [9]. Some factors have an effect on people's mental health during the pandemic such as sex, age [10], underlying health conditions [11], economic conditions, social networks, and family life [12]. The impact on mental health is due to some stressors including fear of getting infected, being uncertain about the future of the lockdown [13], isolation from friends and not having enough opportunities to study [14]. These factors may lead to feeling lonely, angry, bored [15], depressed and anxious [8]. The purpose of this paper is to examine the effects of Covid- 19 pandemic on the mental health of young adults (18-35). This will give experts better insight into more efficient interventions in similar situations in the future. We hypothesized that these factors would have a meaningful relationship with mental health changes: following the news, economics and income, living alone, friendship circle, duration of the quarantine, drug abuse, and having relatives being exposed to Covid-19 regularly such as healthcare workers.

2. Materials and Methods:

2.1. Study design, period, and setting:

A structured questionnaire was used in this cross-sectional study and reported in line with the STROCSS criteria. The questionnaire was developed and formed by reviewing previous similar studies besides our researcher's debates, and it was printed and distributed among 300 participants physically. The study participants were selected among university students who were offered to participate in an anonymous survey of mental health issues during the Covid-19 pandemic. The study was performed Between July 3rd and August 3rd, 2022.

2.2. Sampling technique and ethical considerations:

The convenience sampling technique was followed during the recruitment of the study population. All participants were properly informed about the nature and purpose of the given study and their consent was taken properly. The consent form was part of the response questionnaire and it was marked compulsory to fill out the consent before continuing with the remaining response form. We ensured participants that their data would remain confidential and that the highest standards of ethics would be applied.

2.3. Study questionnaire and data collection technique:

The questionnaire consisted of 30 questions. Anonymity was ensured by not asking for any identifying information. Statistical analysis of the questionnaire was done considering age and being a student as a limiting factors, and people aged 18-35 who were students were included in this study. The first part of the questionnaire was dedicated to personal information, and we asked participants about their gender, age, field of study, year of entrance to the university and name of the university, and marital status. The participants were asked to choose if they are currently suffering any of the physical or mental illnesses stated, including nervous problems, cardiovascular problems, respiratory problems, kidney problems, digestive problems, orthopedic problems, sexual problems, organ Transplants, cancer or others, and depression, obsessive-compulsive behaviors, anxiety disorder, ADHD, bulimia nervosa or others. The second part was dedicated to the participants' general conditions during the pandemic. In this part, we asked: 1. their compliance with health protocols during and after the pandemic 2. how much time they spent in complete quarantine 3. their access to health services 4. whether they have family members as health care workers or in high risk of infection 5. how they evaluate their relationship with the people they live with if they don't live alone 6. whether they or people close to them got infected with the Coronavirus and to what extent 7. how scared they are of getting infected 8. to what extent they follow the news of Covid-19. The next part was dedicated to the participants' mental health issues. In this part, we asked: how their economic conditions, activity levels, how weight, aggression, self-confidence, hope for the future, suicidal thoughts, and extent of friendship circle changed due to the Covid-19 pandemic, being offered four or five options spanning from "decreased greatly" to "increased greatly". In the later section, the participants rated their life satisfaction, sadness levels, stress levels, obsessive-compulsive behaviors, fear of social situations, and anger levels on a scale of 1 to 100, for both during and after the pandemic.

2.4. Statistical analysis:

The data of this project was analyzed using the statistical package for the social sciences version 19. All statistical procedures were done under the guidance of a statistical expert. For the demographic data, descriptive statistics were used. The categorical and ordinal variables were expressed as numbers. On account of the refinement of the statistical testing, some of the nominal and categorical variables were merged into two or three categories. Fisher's exact test was used to test the correlation between categorical and ordinal variables and point-biserial correlation was used to test for correlation between normally distributed continuous and dichotomous categorical variables. Wilcoxon's test was used to compare the means of personal ratings reported by participants before and after the pandemic. P values lower than 0.05 were considered significant.

3. Result:

Sample demographics

Participants were students in 49 universities in Iran in different majors and the age of whom ranging from 18 to 35 years. Participants included 194 (69.7%) female and 106 (35.3%) male respondents. 78 (26%) respondents had at least one of these underlying physical disorders: neurological disorders (8.7%), cardiovascular disorders (9.3%), pulmonary disorders (7.3%), urogenital disorders (1%), gastrointestinal disorders (7%), orthopedic disorders (3.7%), sexual disorders (0.3%), and others (4%). Also, 100 respondents had at least one of these underlying mental disorders: depression (14.7%), obsessive-compulsive disorders (12.7%), anxiety (22.3%), ADHD (4.7%), bulimia nervosa (6%), and others (4%).

Table 1: Correlation of change of mental issues before and after the pandemic with sex, presence of physical or mental disorders, physical activity, rate of following the news, how economic conditions changed due to Covid-19, and whether there was a significant difference in the scores given for before and after the pandemic.

	Sex	Physical Disorder	Mental Disorder	Activity Level	Following News	Economic Conditions	Paired t-test
Stress Level	0.017	0.721	0.296	0.051	0.876	0.002	0.001
Anger Level	0.053	0.461	0.058	0.038	0.329	0.31	0.001
Life Satisfaction	0.017	0.095	0.379	0.394	0.055	0.003	0.001
Fear of Society	0.001	0.025	0.308	0.32	0.239	0.694	0.001
Obsessive Compulsive Behaviors	0.02	0.68	0.092	0.154	0.104	0.609	0.001
Sadness Level	0.065	0.165	0.134	0.555	0.808	0.31	0.001

Average life satisfaction had been roughly equal in men and women before the pandemic, but after the Covid-19 pandemic, average life satisfaction had dropped to a greater extent in women. In people with economical regression, life satisfaction had dropped more significantly. In people who had physical activity during the pandemic, on average, 6 percent less of an increase in anger was observed. Elevation of stress levels was higher in women and in people with economical regression,

stress levels had elevated more significantly. The Increase in fear of society during the pandemic was higher in women. The increase in fear of society was also witnessed in people with physical disorders. The increase in obsessive-compulsive behaviors was higher in women. The results obtained from the statistical tests show that the self-report scores given to life satisfaction, anger, stress, fear of society, obsessive-compulsive behaviors, and sadness are significantly different before and after the Covid-19 pandemic (Table 1).
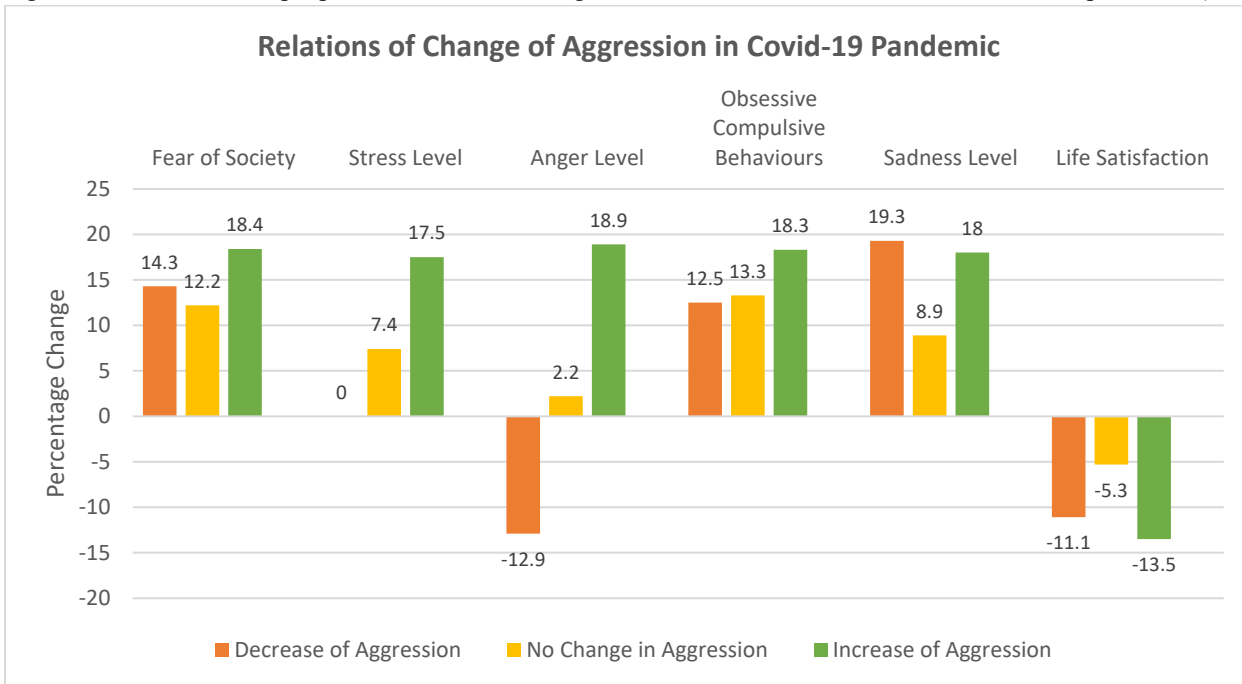

Figure 1: mean change of the score of some mental issues expressed as how aggression changed in people after the pandemic colors include [orange (decreased level of aggression), yellow (the level of aggression remains constant), green (increased level of aggression)].

Aggression had a meaningful correlation with changes in fear of society, stress levels, anger, obsessive-compulsive behaviors, sadness, and life satisfaction. On average, in people with increased aggression and no change in aggression, the fear of society raised; and in people with reduced aggression, a

14.2% increase in the fear of society was witnessed. Regarding stress levels, in people with increased aggression 17.5%, in people with no change in aggression 7.4%, and in people with reduced aggression no change was witnessed. As for anger levels, In people with increased aggression and with no change

in aggression respectively an increase of 18.9% and 2.2% was observed. Anger levels in people with decreased aggression were 12.9% reduced. Regarding obsessive and compulsive behaviors, an increase of 18.3% in people with elevated aggression, 13.3% In people with no chance of aggression, and 12.5% in people with a decrease in aggression were observed.

Sadness levels were respectively 18%, 8.9%, and 19.3% increased in people with the increase, no change, and decrease in aggression. Life satisfaction was reduced by 11.1% in people with decreased aggression, 5.3% in people with no change in aggression, and 13.5% in people with increased aggression (Figure 1).
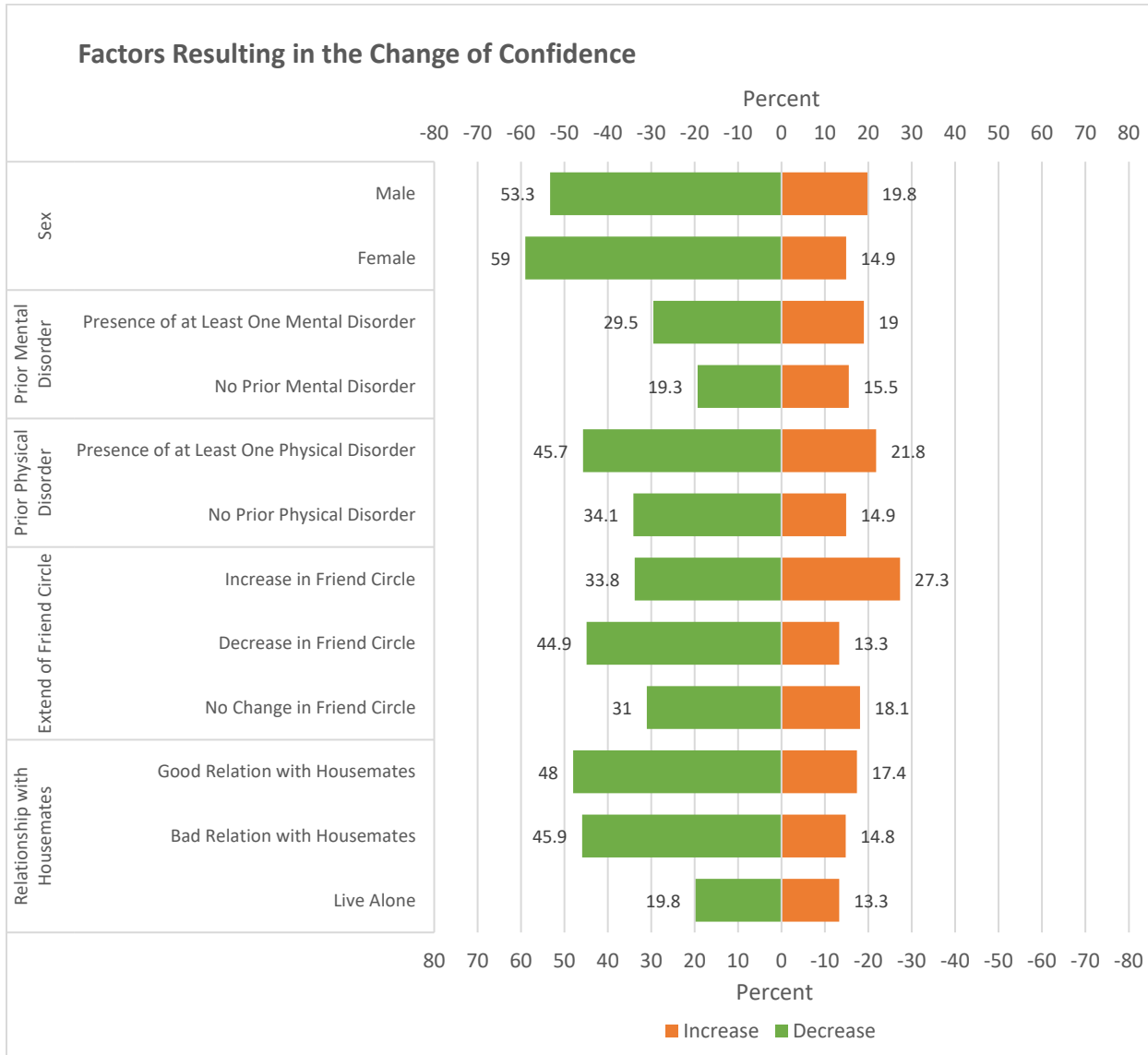
Factors Resulting in the Change of Confidence

Category	Group	Decrease	Increase
Sex	Male	53.3	19.8
	Female	59	14.9
Prior Mental Disorder	Presence of at Least One Mental Disorder	29.5	19
	No Prior Mental Disorder	19.3	15.5
Prior Physical Disorder	Presence of at Least One Physical Disorder	45.7	21.8
	No Prior Physical Disorder	34.1	14.9
Extend of Friend Circle	Increase in Friend Circle	33.8	27.3
	Decrease in Friend Circle	44.9	13.3
	No Change in Friend Circle	31	18.1
Relationship with Housemates	Good Relation with Housemates	48	17.4
	Bad Relation with Housemates	45.9	14.8
	Live Alone	19.8	13.3

Increase ■ Decrease ■

Figure 2: gender, presence of physical or mental disorders, the extent of friend circle, and quality of relations with housemates in people with increased or decreased self-confidence after the pandemic. people with no change in self-confidence have not been considered in this figure. colors include (orange and green in this figure).

The relationship between self-confidence with different variables was investigated. 46% of the participants (n=140) reported no change in self-confidence, which is not shown in the table. 16.7% of the participants (n=50) had an increase in self-confidence and 36.7% of them (n=115) had a decrease in it. In this study, 19.8% of men (n=21) and 14.9% of women (n=29) had an increase in self-confidence; and 19.8% of men (n=21) and 40.9 of women (n=89) had a decrease in self-confidence. In people who had at least one underlying mental

disorder, 19% reported an increase (n=19) and 48% reported a decrease (n=48) in self-confidence; while in people with no underlying mental disorders, 15.5% reported an increase (n=31) and 31% reported decrease (n=62) in self-confidence. In people with at least one underlying physical disorder, 21.8% reported an increase (n=17) and 44.9% reported a decrease (n=35) in self-confidence; while in people with no underlying physical disorders, 14.9% reported an increase (n=33) and 33.8% reported decrease (n=75) in self-confidence.

In people with an expanded friends circle during the pandemic, 27.3% reported an increase (n=12) 34.1% reported a decrease (n=15) in self-confidence; while in people with a shrunken friends circle during the pandemic, 13.3% reported an increase (n=23) and 45.7% reported decrease (n=79) in self-confidence; in addition, in people whose circle of friends had not changed during the pandemic, 18.1% reported an increase (n=15) and 19.3% reported decrease (n=16) in self-confidence. In people who had had a good relationship with their housemates, 17.4% reported an increase (n=39) and 29.5% reported a decrease (n=66) in self-confidence; while in people who had had a bad relationship with their housemates, 14.8% reported an increase (n=9) and 59% reported decrease (n=36) in self-confidence; in addition, in people who had lived alone, 33.3% reported an increase (n=2) and 53.3% reported decrease (n=8) in self-confidence. Self-confidence did not correlate with economic conditions and weight change (Figure 2).
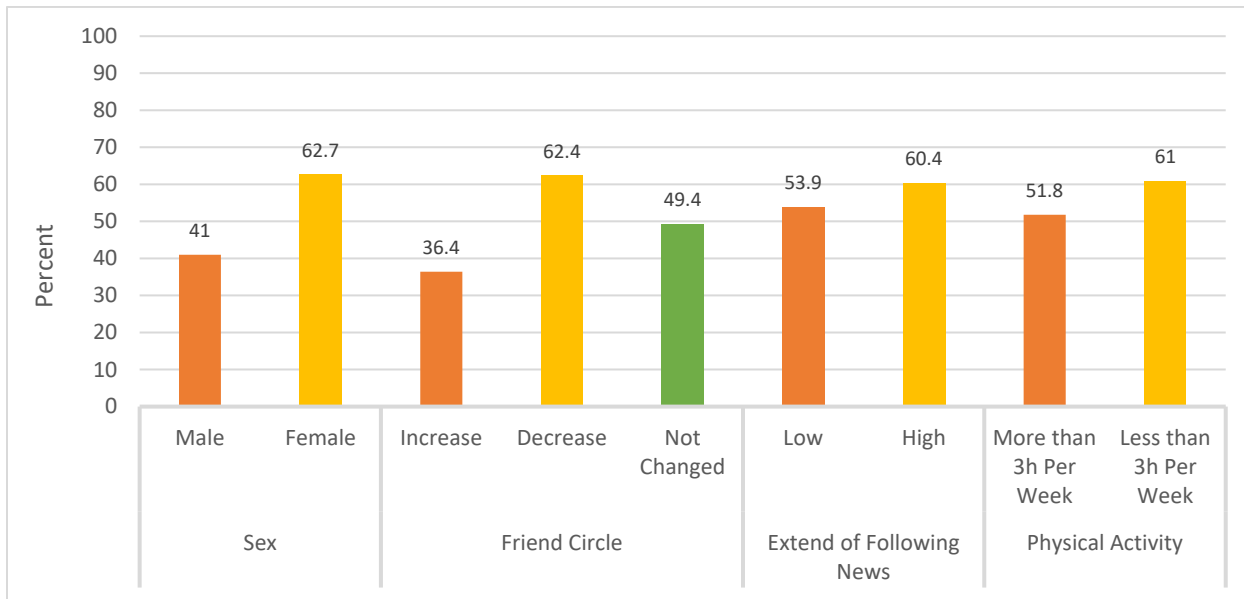

Figure 3: gender, the extent of friend circle, rate of the following news, physical activity, and presence of physical or mental disorders in people with a decrease in hope for the future.

These results were obtained in the investigation on the effect of the decrease in the hope for the future with the variables of gender, circle of friends, following the news, physical activity, and underlying physical and mental disorders. People who reported a decrease in hope for the future were 41% men (n=43) and 62.7% women (n=121). In people who had a decrease in the hope for future, 34.6 (n=16) reported an expansion of their friends' circle, 62.4 (n=108) reported a shrinkage in their friends' circle, and 49.4 (n=40) reported that their friends' circle remained unchanged. In the next variable, 53.9% (n=122) of people who reported a decrease in following the news had a decrease in hope for the future, while in 60.4% (n=32) of people who reported an increase in following the news, a decrease in hope for future was observed. Also, in 51.8% of people who had had physical activity and in 61% of people who had not had physical activity during the Covid-19 pandemic, a decrease in hope for the future was observed. (Figure 3).

Table 2: correlation of aggression, self-confidence, hope for the future and having suicidal thoughts with sex, physical or mental disorders, and extension of friend circle

	Sex	Physical Disorder	Mental Disorder	Friend Circle
Aggression	0.003	0.027	0.002	0.067
Self Confidence	0.001	0.02	0.003	0.001
Hope for Future	0.001	0.64	0.185	0.01
Suicidal Thoughts	0.016	0.412	0.001	0.051

In this Table, we have investigated the relationship between some dependent and some independent variables; which identifies aggression, self-confidence, hope for the future, and suicidal thoughts as dependent variables, and gender,

underlying physical and mental disorders, and friends 'circle as independent variables. Aggression correlated with gender (p=0.003), underlying physical (p=0.027), and mental (p=0.002) disorders but the correlation with the friends 'circle was not considerable (p=0.067). Self-confidence had a correlation with gender (p<0.001), underlying mental disorders (p=0.003), and the circle of friends (p=0.001) but the correlation with underlying physical disorders was not considerable (p=0.02). Hope for the future had correlations with variables such as gender (p=0.001) and circle of friends (p=0.01) but no noteworthy correlation with underlying physical (p=0.64) and mental (p=0.185) disorders was observed. Suicidal thoughts had correlations with variables such as gender (p=0.016) and underlying mental disorders (p<0.001) but no noteworthy correlation with underlying physical disorders (p=0.412) and circle of friends (p=0.051) was observed.

4. Discussion

This research surveys the changes in the psychological and social state of Iranian university students due to quarantine during the Covid-19 pandemic. Based on the results, the quarantine during the Covid-19 pandemic has had massive effects on students' stress levels, anger, aggression, fear of society, obsessive behavior, self-confidence, life satisfaction, and hope for the future. It was also noticed that these variables are dependent on other variables such as gender, underlying physical and mental illnesses, economic conditions, circle of friends, drug abuse, quality of relationship with housemates, the amount of physical activity, and level of following the news. It seems that the quarantine during the Covid-19 pandemic caused an increase in the level of stress, fear of society, and obsessive-compulsive behaviors. However, according to our findings and other available preexisting evidence, women had experienced a greater increase in mental disorders than men [16]. Furthermore, it was observed that participants with underlying physical diseases experience great fear of society for many reasons, such as the death of those around them due to Covid-19 and the fear of complications that may be caused by Covid-19 infection. Although this fear has not been experienced by participants with no underlying mental disorder [17]. The rate of Aggression in students seems to be affected by many variables such as fear of society, stress, obsessive-compulsive behavior, sadness, and life satisfaction. In other studies, it has been revealed that Socioeconomic stressors during the COVID-19 pandemic, as a predisposing factor for PTSS, increase the levels of aggression [18]. In addition, it has been reported that obsessive behaviors can indirectly cause aggression [19]. In this paper, it has been illustrated that self-confidence can be affected by mental or physical illnesses, circle of friends, quality of the relationship

with housemates, and living alone or with family. Another study has shown that a positive correlation between Self-confidence and Mental health indicates that mental health improves within the development of self-confidence [20]. The boost of self-importance and self-care has been found to enhance life satisfaction and self-confidence directly [21]. Possibly the isolation due to the Covid-19 pandemic has caused a raised stress level for most people, which leads to the appearance of unpleasant feelings, and ultimately a lack of self-confidence. It seems that this loss of self-confidence can increase suicidal thoughts and self-harm [22]. The distinguished finding in our results was the lack of relevance between self-confidence and economic condition and weight change, which was defying our expectations. As mentioned by a study, The high weight stigma in people causes dissatisfaction with body image, lower quality of life, loss of self-confidence, and depression symptoms by serious damage to mental health [23]. As stated in an investigation, changes in economic status can directly affect self-esteem and self-confidence in the short term, but in the long term, these factors may be non-relevant or contradictory [24]. In keeping with our results, it can be concluded that hope for the future is being influenced by friends' circle and physical activity during the Covid-19 pandemic and isolation, physical activity has been greatly decreased due to reasons exemplified by working and studying remotely. Following a study, it has been that regular and long-term physical activity, along with avoidance of smoking and alcohol consumption, improves life expectancy [25]. Conforming to other investigations, our paper indicates that a good friends circle can be effective in solving problems caused by isolation and cause positive feelings and develop well-being [26].

4.1. Limitations and Recommendations:

To the best of our knowledge, this is the first study in this region. It is an essential contribution to the Mental health impact of the COVID-19 pandemic on students. Limitations include a modest sample size (n = 300) which cannot be generalized to Iranian cultural settings and backgrounds. To establish more accurate results, large-scale and varied samples are needed in future replications of the study. Moreover, this is a descriptive study as it determines only frequencies, and percentages and limits the objectivity of the study. Therefore, the results should be considered only exploratory in the absence of experimental work.

5. Conclusion:

The covid-19 pandemic and lockdown as expected from previous experiences of outbreaks had considerable impacts on mental health. Covid-19 pandemic could have caused the death of relatives, changes in economic conditions and friend circle, obsessive-compulsive behaviors, anxiety, fear of getting

infected, death, and social isolation due to lockdowns. These factors had impacts on stress levels, sadness levels, life satisfaction, development of suicidal thoughts, hope for the future, aggression, and self-confidence. The mental health of people with underlying physical and mental illnesses was more affected by the Covid-19 pandemic and lockdown. This study shows that keeping social connections, physical activity, and generally self-care can reduce the impact of the Covid-19 pandemic on mental health. It is expected from researchers, policymakers, and health organizations to make interventions and policies to balance physical health alongside maintaining and improving the well-being of people mentally and socially in times of quarantine.

Acknowledgment

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