The Effect of Covid-19 Disease on the Mental Health and Attendance of Urban Planning Students: A Case Study of Students of Islamic Azad University of Mashhad

Nadia Arbab[1],Toktam Hanaee[2]

1. Islamic Azad University of Mashhad.
2. Assistant Professor, Department of urbanism, Mashhad branch, Islamic Azad university, Mashhad, Iran.

ABSTRACT

At the end of December 2019, the spread of a new infectious disease was reported in Wuhan, China. It was created by a new coronavirus and was officially named Covid-19 by the World Health Organization. This disease not only causes public health concerns but also causes a number of psychological diseases. The main purpose of this study is to investigate the effect of Covid-19 disease on the mental health and attendance of urban planning students in the Islamic Azad University of Mashhad and the relationship between them. The statistical population of the study, using the Cochran's formula, is 229 people out of the total number of urban planning students of Mashhad Azad University with 600 inputs from 94 to 97. Random sampling method has been employed. The data collection tool in this study is a researcher-made questionnaire, which includes a combination of standard mental health questionnaire SCL-25 and questions related to students' attendance in urban areas. In this study, data are analyzed using confirmatory factor analysis technique in AMOS software, to significantly determine the regression weight of different structures of the questionnaire to predict the relevant items. After library studies and collecting data by the field-based method, in the final stage, raw data obtained from the questionnaires are analyzed using SPSS software to describe the current situation, and the statistical method of Pearson correlation and Linear regression are used to analyze the indicators. The results of the present study show that the disease has caused anger and violence among students, which in turn affects mental health factors and their attendance, because these same people enter the university and city with a violent spirit. Finally, it was found out that there is a direct relationship between Covid-19 disease, mental health and students' attendance.

Keywords: Covid-19 disease, attendance, urban space, mental health

1. INTRODUCTION

Mental health as one of the dimensions of human health has an important role in balancing the social life of every human being, and its pervasive coverage in society can lead to social development. This is especially true about our Iranian society as a developing and transitioning society, because on the one hand, the population of our society as the main resource for development need to receive attention for their health.

especially social and mental health and how people in that society interact. On the other hand, a person who, whether male or female, does not have sufficient and desirable mental and social health, cannot cope with the challenges of playing social roles and adapt to social norms (Arfai, 2011: p. 3). In December 2019, a viral outbreak was reported in Wuhan, China. The cause of this disease was a new and genetically modified virus from the family of coronaviruses called SARS_Cov2, which was named, COVID-19.

*Corresponding author:
arbab.nadia@yahoo.com

Unfortunately, due to its very high transmission rate, the virus spread rapidly throughout the world and infected all countries of the world in almost a short time (less than four months). COVID-19, which is caused by an RNA virus, affects most of the respiratory tract of people with the disease and is spreading catastrophically (Zhu, Wei, 2020).

Due to the novelty of this virus as well as the limited information available on the pathogenicity of SARS-CoV-2 virus and methods of control and treatment of this disease, currently, the most important way to deal with it is to prevent the spread of the virus. Given the global (pandemic) status of COVID-19, which affects and paralyzes almost all important economic, political, social and even military activities in all countries, discussion about the psychological effects of this viral disease on people's mental health at different levels of society is very important (Remuzzi, 2020). Due to the pathogenicity of the virus, the rate of spread and the percentage of deaths caused by it, this disease may affect the mental health of people at different levels of society, including patients, health care workers, families, children, students, psychiatric patients and even personnel in different occupations, compromised in different ways (Wang, Zhao, 2020). In general, it can be said that coronavirus affects and is affected by the mental health of people. In the present study, while extracting the effective components of students' mental health, it is intended to examine the relationship between coronavirus and the mental health and students' attendance. The main and basic structure in this research is formed in such a way that after library studies (to extract indicators) and data collection in the field-based method (questionnaire), in the final stage, the current situation is described by analyzing the raw data obtained from the questionnaires using SPSS software, and the indicators are analyzed using Pearson correlation and linear regression statistical methods. In this regard, the following two hypotheses have been proposed:

-It seems that there is a direct relationship between COVID-19 and the level of students' attendance in university.

- It seems that there is a significant relationship between COVID-19 and the level of mental health in male and female students of Mashhad Azad University.

2.1 Theoretical Foundations
2.1.1 Mental Health

In a broad sense, health is considered as high quality state of the human body that expresses the proper functioning of the body and a certain genetic and environmental condition. Health has five different dimensions: physical, mental, emotional, spiritual and social health (Sam Aram, 2012).

The social dimension of health includes levels of social skills, social functioning and each individual's ability to recognize oneself as a member of a larger society and refers to the status of a person's relationship with others in society or to his sociability (Hatami, 2010).

The World Health Organization defines mental health[3] as "a state of well-being in which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community" (World Health Organization, 2014).

In other words, mental health can be considered as the ability to develop intellectual and spiritual emotions, to communicate with others, to participate in collective activities, and to be resilient in the face of adversity (Abroon et al., 2018).

There are several definitions for the quality of the environment: a high-quality environment conveys a sense of well-being and satisfaction to its population through characteristics that may be physical, social, or symbolic. In numerous studies conducted, cases such as access and linkage, comfort and image, use and activities, sociability, quality of environmental sustainability, quality of city image, quality of views, quality of city form, quality of form of buildings, and quality of public realm have been considered as the main components in explaining the quality of the environment (Carmona, Punter, 2013).

2.1.2 Diagram 1: Dimensions of Health in Urban Space (Anderes, 2019)

---

[3] Iranian translators have used three equivalents of the word "mind": spirit, psyche, and soul. The word "mind" is closer to the Greek word "nous" (intellect), which is the most important part of the "Psyche" (Yousefi, 2011).
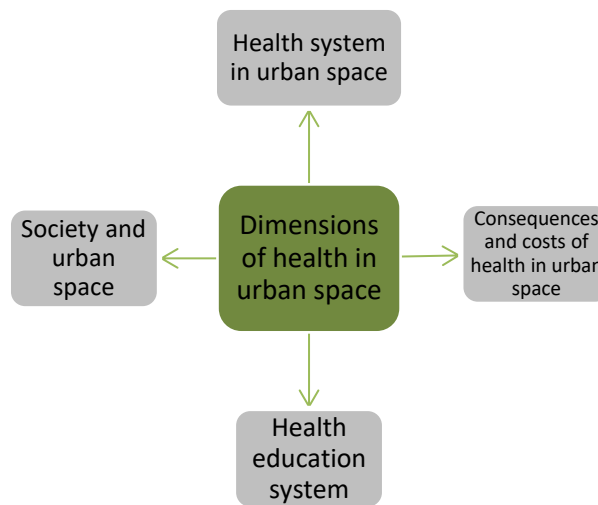
Diagram 1. Mental Health from the Perspective of Theorists

Reber (1996) Dictionary of Psychology uses the term mental health to describe people who are at the highest level of behavioral activity, emotional adaptation, and behavioral adjustment, and is not used only to mean that a person is not ill (Marquez and Wood, 2007). There are two main definitions of mental health. In the first definition, mental health is a field of public health that works to reduce psychological illness in a community, and in the second definition, mental health means mind health, demonstrating a positive state of mind that in turn can help to create a valuable system of dynamicity, progress and development at the individual, national and international levels (Manavipour, 2012). Larus Cultural Mental Health defines mental health as "Mental talent for pleasant coordination and effective working, and for difficult situations, and the flexibility to regain balance and to be able to do things (Ganji, 2004). According to Ginsburg, mental health is "the mastery and skill in communication with the environment, especially in three important areas of life, i.e., love, work and recreation". Karl Menninger defines mental health as "the adaptation of the individual to the world around him as far as possible in such a way that leads to

happiness and a fully useful and effective perception". Watson, the founder of the school of behaviorism, says, "Normal behavior indicates the healthy personality of a normal person, which makes him adapt to the environment and makes it possible for him to meet his basic and essential needs" (Azizinejad, 2014). Gay et al. (2010) also defined mental health as "the mental capacity to work harmoniously, pleasantly and effectively in difficult situations of being flexible and self-balancing assessment". Sohrabi (2000) defines mental health as "a situation in which a person uses his potential ability to perform personal and social tasks, and as a result, he has both acted on his inner talents and been able to live with the community." Shamloo (1999) defines mental health as "a set of factors that play an important role in preventing the development or progression of the worsening trend of cognitive, emotional and behavioral disorders in humans" (Manavipour, 2012). As defined by the World Health Organization, "Mental health falls within the general concept of health, and mental health means the full ability to play social, mental, and physical roles; health is not just the absence of disease or retardation" (Ganji, 2000).

Table 1. Mental Health from the Theorists' Viewpoints

Theorist	Mental Health
Shamloo, 1999	A set of factors that play an important role in preventing the development or progression of the worsening trend of cognitive, emotional and behavioral disorders in humans.
Sohrabi, 2000	Mental health is a situation in which a person uses his potential ability to perform personal and social tasks, and as a result, he has both acted on his inner talents and been able to live with the community.
Reber, 1996	The term *mental health* is used to describe people who are at the highest level of behavioral activity, emotional adaptation, and behavioral adjustment.
Ginsburg,2001	The mastery and skill in communication with the environment, especially in three important areas of life, i.e., love, work and recreation.
Karl Menninger, 2001	Mental health is the adaptation of the individual to the world around him as far as possible in such a way that leads to happiness and a fully useful and effective perception.
Marquez & Wood, 2007	In the First definition, mental health refers to a field of public health that works to reduce psychological illness in a community, and in the second definition, mental health means mind health, demonstrating a positive state of mind that in turn can help to create a valuable system of dynamicity, progress and development at the individual, national and international levels.
Larus, 2009	Mental talent for pleasant coordination and effective working, and for difficult situations, and the flexibility to regain balance and to be able to do things.
Gay et al., 2010	Mental health is defined as the mental capacity to work harmoniously, pleasantly and effectively in difficult situations of being flexible and self-balancing assessment.
Watson, 2011	Normal behavior is a diagram of the healthy personality of a normal person, which makes him adapt to the environment and makes it possible for him to meet his basic and essential needs.

(Source: Author)

2.1.3 Influential Components of Urban Environment on Mental Health

Studies show that being in an environment designed by natural elements is effective in relieving stress and reducing mental fatigue (Matsuoka & Sullivan, 2011). Some other studies indicate that living in homes far from necessary facilities, is a cause of stress; conversely, having the necessary facilities in the neighborhood causes residents to experience a higher level of psychological comfort. According to studies, commuting to and from poorly maintained, dirty and polluted buildings can cause psychological stress for their users. Natural light has a direct effect on the activity of parts inside the brain. According to studies, natural daylight has a positive effect on positive psychological feelings (McAndrew, 2008).

According to studies, noise pollution can cause disorders such as mental and physical fatigue, stress and anxiety, anger, high blood pressure and so on. Fear of the crime occurrence and feelings of insecurity create many mental and psychological problems for people. Traffic quality and safety in urban areas is known to affect the people's mental health and well-being. The architectural features of the environment can help strengthen people's mental health by providing the conditions for experiencing a higher level of social support. Numerous studies have shown that attachment to the place of residence has an effective role in mental health, individual behavior and social functioning of residents (Dannenberg, Frumkin, 2011).

Table 2. Components of Urban Environment Affecting the Level of Mental Health of Citizens

Components of urban environment affecting the level of mental health of individuals	Researchers
Being close to nature and the benefiting from natural elements, including the presence of plants and green space and the use of natural materials	Hansmann et al., 2007; Harting et al., 2003; Mayer, 2009; Matsuoka & Sullivan, 2001
Access to natural light: Enjoy the natural daylight	Fitzpatrick, 2007; Nayebi et al., 2007; Beauchemin & Hays, 2008; McAndrew, 2008
Conservation conditions and cleanliness of the environment	Galea et al., 2005; Evans et al., 2000; Gifford & Lacombe, 2006
Access to urban facilities and equipment: responding to the functional needs of space users, access to local services	Evans et al., 2003; Schell & Ulijaszek, 1999; Tyson et al., 2002
Space safety and security: reducing space capability for the occurrence of crime	Appleyard & Lintell, 1972; Sotoudeh, 2008; Taylor et al., 1990; Richters & Martinez, 1993
Noise, congestion and crowds: disregarding the spatial territories	Korte & Grant, 2001; Dursan et al., 2006; Oliver, 2003; Evans et al., 2003, Shakerinia, 2011
Place attachment: the presence of memorable spaces, the role-creating quality of space, the age of the space	Alavi et al., 2008; Bakhtiar Nasrabadi et al., 2011; Dannenberg et al., 2011; Sharifi et al., 2010
Social relations	Brown et al., 2009; Mehrabi, 2010; Cohen & Wills,1985; Kweon et al., 1998

(Source: Abroon et al., 2018)

2.1.4 COVID-19 and its Effects on Urban Space and Mental Health

In December 2019, the outbreak of pneumonia of unknown etiology was first reported in Wuhan, Hubei Province, China. Following its outbreak, a new SARS-CoV-2 virus became known as a pandemic in China and elsewhere by the World Health Organization. As of February 12, 2020, there were a total of approximately 43,103 cases of COVID-19, of which almost 42,708 (99.1%) were from China (Hui, Azhar, 2019).

As these data show, COVID-19 has been a major public health disaster, with China severely affected. COVID-19 is a type of acute respiratory syndrome that can be transmitted from animals to humans. At this time, it is not yet clear when the pandemic will reach its peak. To date, the source of SARS-CoV-2 disease is unknown (Wilder-Smith, 2020). However, the coronavirus has been linked to a local seafood vendor in Wuhan, who has illegally used some wildlife animals, including bats (Wang, Tang, 2019).

The devastation caused by COVID-19 may be comparable to the devastation caused by the SARS-CoV-1 epidemic in 2003. The SARS-CoV-1 epidemic caused 8,000 infections and affected 800 people worldwide (in 26 countries) (Brooks, Webster, 2020). The SARS-CoV-1 epidemic was controlled over eight months (until July 2003) (Hui, Azhar, 2019). Normally, individuals may experience some known risk factors, including depression and anxiety, high mortality, resource and food insecurity, discrimination, and experience with infected and sick people that can lead to undesirable mental health during this pandemic (Brooks, Webster, 2020). Streets may be redesigned to meet other emerging needs remotely in addition to social needs. Door-to-door purchases and delivery of food from restaurants are over (Alter, 2020). There are additional demands for increased on-street parking, not only to meet new delivery needs, but also to provide free space for pedestrians (Bliss, 2020). The pandemic of this virus may change the kind of expectations we have of green spaces. We expect smaller green spaces or crowded neighborhood parks (Nieuwenhuijsen and Khreis, 2019). Permanent distance from large public gatherings may change the design of cities. Cities have at least one large place for large public gatherings. Designers should avoid placing benches, water features or other elements and infrastructure in large squares. In many cities, cultural and religious ceremonies are very important; these religious and cultural ceremonies have survived for centuries. Drought, war and unrest may have temporarily delayed them, but in many cases they are not stopped. In cities that are fully quarantined, residents have noticed a significant reduction in noise and air pollution, and even the return of wild animals in these cities (Bliss, 2020).

There is a serious concern that people may reject public transportation in favor of the private sector. People are afraid to travel by public transport for good reasons. A study in Hubei found that COVID-19 was spread from one person to nine people on a long-distance bus. People prefer to travel mostly in private vehicles or taxis that follow health protocols. Streets have become

individual transportation routes, the total number of bicycles and motor vehicles increased, sidewalks become wider and provided larger bike lanes. The worst-case scenario is that public transportation systems go bankrupt and most of them are outsourced to private corporations, which affects the city's public space; increased traffic of private vehicles, congestion, noise pollution, air pollution, etc. will be among the consequences (Null and Smith, 2020; TUMI, 2020). The pandemic may also reinforce social and class differences in the use of public space. Due to their job commitments and lower incomes, low-income households make use of the city more and are mostly present in public. Whereas, higher-income workers work at home and are less present in the community (Valentino-DeVries et al., 2020). COVID-19 has had a greater impact on racial minorities, the homeless, and slums residents because they have fewer access to healthcare. Public spaces offer different purposes for different populations, especially for low-income groups who turn to open and recreational spaces due to the limited space and high population density. Public spaces are especially important for children and young people. Public spaces also provide social interactions for seniors living alone to avoid isolation and loneliness (Anguelovski, 2020). In response to the current crisis of the coronavirus, many governments, in addition to encouraging social distance, need to close unnecessary businesses and schools, ban large gatherings, and bar people from leaving the country. Most states have made it mandatory for all workers to stay home. Extensive research has

linked social isolation and loneliness to poor mental and physical health. Referring the association of this social isolation and loneliness with reduced longevity and an increased risk of both mental and physical illness, the former United States surgeon, Vivek Murthy, predicted cites with the widespread experience of loneliness as a public health concern. In addition, studies on the psychological impact of quarantine during an outbreak show that such quarantine can lead to negative mental health consequences. During this time there is a particular concern about the idea of suicide, because isolation is a risk factor for suicide. According to the latest information from the Ministry of Labor, five million people applied for unemployment benefits in the fourth week of April, and this number reached 22 million four weeks later. Some industries are hit hardest by others, such as leisure and tourism. Analysts predict that the unemployment rate will rise as a result of the pandemic and the country will soon experience a recession. Studies also show that job loss is associated with increased depression, anxiety, distress and low self-esteem and may lead to a further increase in substance use disorders. In addition, suicides may increase as unemployment rises and recession approaches. Studies show that occupational burnout is recorded in hospitals, especially for young nurses, and is higher in hospitals where the number of nurses is less than the number of patients. Doctors are also prone to occupational burnout and, as a result, can suffer from mental health problems, including depression (Nirmita Panchal and Rabah Kamal, 2020).
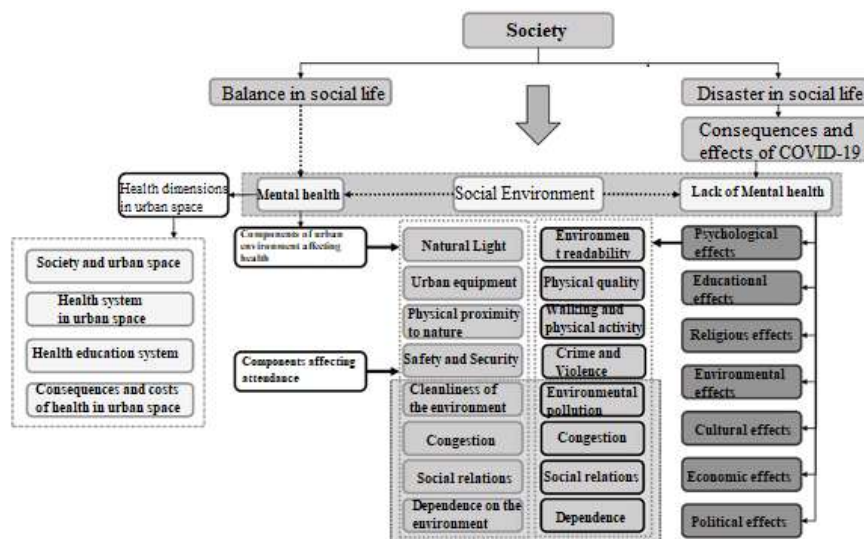

Diagram 2. The Conceptual Framework of Research

3. Research Method

This is an applied, quantitative-qualitative research that has employed the descriptive-analytical method. The theoretical foundations of the research have been obtained through library and document-based studies and the indicators for measuring the subject have been extracted based on past principles and studies as well as based on the theories of several experts and professors from relevant documents, presented in a table. For the final result, by performing the pre-test and completing the preliminary sample and by performing the Cronbach's alpha test, the items were finally corrected. SCL-25 (the standard mental health questionnaire) and the combined questions were used for the questionnaire questions. The reliability is assessed using Cronbach's alpha coefficient. In this section, the value of the coefficient obtained for the research variables after validation is presented in Table 3. As can be seen in Table 3, the Cronbach's alpha coefficient of the questionnaire is 0.912, which indicates the desired reliability and validity of the questionnaire. The significance of regression weight (factor loading) of different constructs of the questionnaire for predicting the relevant items has also been investigated using confirmatory factor analysis technique and AMOS software.

Table 3. Cronbach's Alpha Coefficient of the Main Research Variables

Variable	Number of questions	Cronbach's alpha of Variables
Mental Health	13	0.886
COVID-19	12	0.773
Attendance	11	0.664
Total	36	0.912

Using Cochran's formula calculated by the total size of the statistical population (600 people accepted in 2015-2017), 229 questionnaires were completed through random sampling method by urban planning students of Mashhad Azad University. The data were analyzed using Pearson correlation technique, linear regression and t-test by SPSS software.

4. Analysis of Findings

4.1 Descriptive Statistics of Research Variables

According to the study, the students in question (age: 22-24 years old, female= 63.7%, male 35%) had the largest sample size (56.3%). About 38.7% of respondents had a bachelor's degree, 37.6% a master's degree and about 43% of students were unemployed.

4.2 Inferential Statistics of Research Variables

4.2.1 Validity Review Results (Confirmatory Factor Analysis)

Before evaluating the proposed structural model, it is necessary to examine the significance of regression weight (factor loading) of different structures of the questionnaire for predicting the relevant items to ensure the fitness of measurement models and the acceptability of their indicators in measuring structures. This was done using Confirmatory Factor Analysis (CFA) technique and AMOS software. Then, each of the measurement models was examined separately and the general measurement model was examined. In addition, before examining the significance of factor loadings, sampling adequacy indicators were considered. The KMO test and Bartlett's test were used to evaluate the sampling adequacy indicators. The KMO test is a measure of sampling adequacy. This test is in the range of zero to one. If the value of the index is close to one, the data are suitable for factor analysis; otherwise, (usually less than 0.5) the results of factor analysis are not very suitable for the data. The Bartlett's test studies the time that known correlation matrix (mathematically) is an identity matrix and hence is not suitable for identifying the structure (factor model). If the significance level in Bartlett's test is less than 0.5, factor analysis is suitable for identifying the structure because the hypothesis that the correlation matrix is known is rejected. The results of confirmatory factor analysis for the questionnaire items are presented in Table 4.

Table 4. Bartlett's Test Results and KMO Test for Research Variables

Variable	KMO test	Bartlett's test
Mental Health	0.784	0.001
COVID-19	0.683	0.001
Attendance	0.556	0.001

The results of Bartlett's test and KMO, as indicators of sampling adequacy, show that both indicators values are in a suitable level. The KMO index is higher than 0.5 for every variable and the significance level of Bartlett's test is less than 0.05. Accordingly, it is possible to ensure that the sample size is suitable for factor analysis.

In the fitted factor analysis model, the factor loading of all items is significant at the confidence level of 0.95. Therefore, none of the questionnaire

items were deleted. The significance of the items is that the level of significance for them is below

0.05. Therefore, finally, 36 items of the questionnaire were analyzed.

Table 5. Results of Confirmatory Factor Analysis (CFA) for Questionnaire Items

Index	Questionnaire Item	Factor Loadings	Significance Level	Results
Mental Health	Q1	2.27	0.001	Confirmed
COVID-19	Q2	1,676	0.001	Confirmed
Mental Health	Q3	2,784	0.001	Confirmed
Mental Health	Q4	3,378	0.001	Confirmed
Mental Health	Q5	2,973	0.001	Confirmed
COVID-19	Q6	2,214	0.001	Confirmed
Mental Health	Q7	2,757	0.001	Confirmed
Mental Health	Q8	1,743	0.001	Confirmed
Attendance	Q9	2,529	0.001	Confirmed
COVID-19	Q10	3,541	0.001	Confirmed
Mental Health	Q11	2,635	0.001	Confirmed
COVID-19	Q12	1,769	0.001	Confirmed
Mental Health	Q13	1,716	0.001	Confirmed
Mental Health	Q14	2,662	0.001	Confirmed
Mental Health	Q15	1,581	0.001	Confirmed
Mental Health	Q16	1,919	0.001	Confirmed
Mental Health	Q17	2,108	0.001	Confirmed
COVID-19	Q18	1,905	0.001	Confirmed
Mental Health	Q19	1,338	0.001	Confirmed
Mental Health	Q20	2,257	0.001	Confirmed
Mental Health	Q21	2,392	0.001	Confirmed
Mental Health	Q22	2,401	0.001	Confirmed
Mental Health	Q23	1,905	0.001	Confirmed
Mental Health	Q24	2,243	0.001	Confirmed
COVID-19	Q25	2,374	0.001	Confirmed
COVID-19	Q26	3,365	0.001	Confirmed
COVID-19	Q27	4,027	0.001	Confirmed
Attendance	Q28	3,959	0.001	Confirmed
COVID-19	Q29	3,493	0.001	Confirmed
COVID-19	Q30	2,459	0.001	Confirmed
COVID-19	Q31	3,216	0.001	Confirmed
COVID-19	Q32	1,886	0.001	Confirmed
Attendance	Q33	1,463	0.001	Confirmed
COVID-19	Q34	2,533	0.001	Confirmed
COVID-19	Q35	2,561	0.001	Confirmed
Attendance	Q36	2,671	0.001	Confirmed

The fitness indicators of the CFA model along with their optimal values have been presented in the Table 6. These indices indicate the desired fitness of the measurement models and

confirm the significance of the factor loadings of each observable variable relative to the corresponding latent variable.
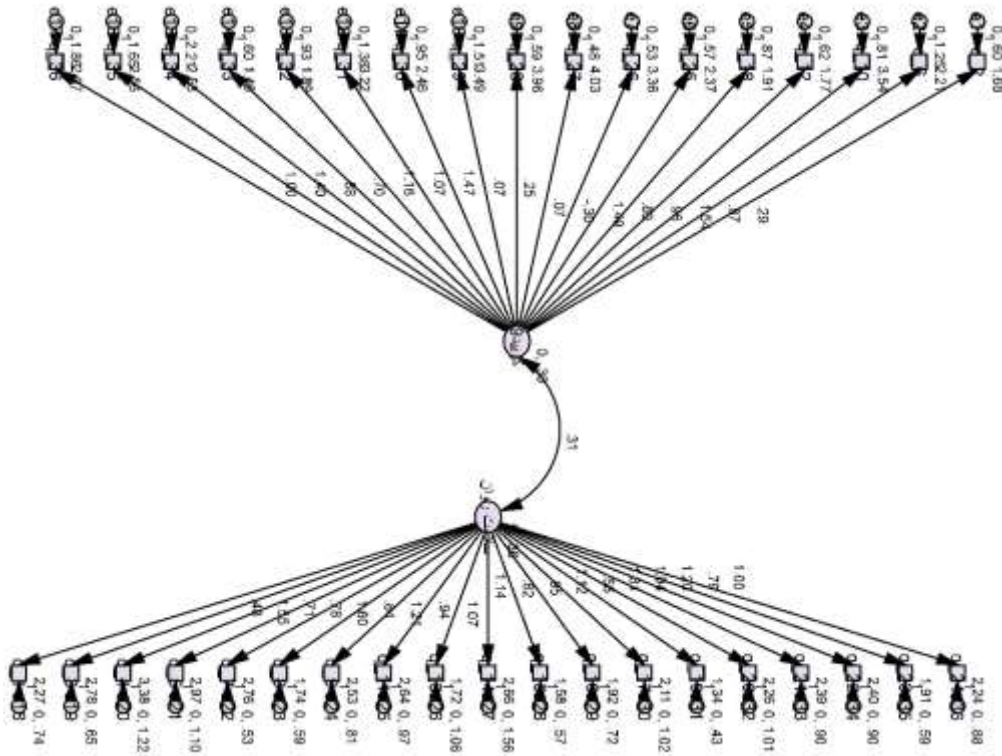
Diagram 3. Optimal Fitness of the Research Model

Table 6. Fitness Indicators of Confirmatory Factor Analysis Models

Indicator Name	Symbol	Acceptable Value	Measurement Model
Significance level	P	<0.05	0.000
Degrees of freedom	(df)	-	593
Chi-square	CMIN	2df CMIN ≤ 3df	1342
Chi-square-optimized	CMIN/df	2 < CMIN/df ≤ 3	2,264
Comparative fit index	(CFI)	CFI<0.9	0.617
Parsimonious normal fit index	(PNFI)	PNFI<.50	0.778

4.3 Normal Distribution

To assess the normality of the distribution of scores in the three variables of mental health, sociability and COVID-19, the degree of skewness and height on the standard deviation were obtained separately that can be seen in Table 7:

Table 7. Descriptive Statistics of Variables

Variable Name	Size	Minimum	Maximum	Mean	Standard Deviation	Skewness	Height
Mental Health	80	19	71	44.03	12.32	0.101	0.852
COVID-19	80	25	62	41.07	8.72	0.440	0.302
Sociability	80	27	62	45	10	0.560	0.201

Since the amount of skewness and elongation for the research variables are in the range of -2 and +2, they probably have a normal distribution.

4.4 Data Correlation

Using the Kolmogorov-Smirnov test, a normal, uniform distribution can be determined. Table 8 specifies the value of K-S.

Table 8. K-S Test

Variable Name	K-S	Significance Level
Mental Health	0.078	0.200
COVID-19	0.093	0.085
Attendance	0.099	0.221

Considering that the K-S test is in the non-parametric group, the value of the significance level is less than 0.05, i.e. is abnormal, and the output of Table 8 shows that the P values in the above-mentioned test are greater than 0.05. The null hypothesis in the K-S test is that the data follow the desired distribution (which is the normal distribution here).

5. Testing the Hypotheses

Hypothesis 1: There seems to be a direct relationship between COVID-19 and the level of students' attendance in university.

Pearson correlation method is used for this hypothesis to prove that there is a relationship between COVID-19 and mental health. Then the effect is examined using regression.

Table 9. Pearson Correlation Coefficient between Attendance and COVID-19

Attendance		
0.676	Pearson	
0.001	Significance Level	COVID-19
79	Number	

According to Table 9, there is a direct relationship between COVID-19 and mental health; with a value of R = 0.676 at a significance level of 0.001, which is less than 0.05, this relationship is

significant. Regression analysis was used to determine the effect of COVID-19 on students' attendance in the university, as can be seen in Table 10.

Table 10. Regression Analysis for Predicting Mental Health through the Predictor Variable (COVID-19)

Model	Sum of Squares	Degrees of freedom	Mean of Squares	Fisher (F)	R	R2 (Determination Coefficient)	Significance Level
Regression	2713.523	1	2713.523	64.808	0.676	0.457	0.001
Residual	3224.021	77	41.780	-	-	-	-
Total	5937.54	78	-				

Regression analysis of Table 10 shows that the regression of the scores of COVID-19 predictor variables towards the attendance variable is statistically significant. The value of the determination coefficient (R2 = 0.457) also shows that the predictor variable is able to predict 46% of the changes related to attendance. Therefore, COVID-19 affects the attendance of male and

female urban planning students of Islamic Azad University, Mashhad Branch.

Hypothesis 2: There is a difference in the effect of COVID-19 on mental health of male and female students.

T-test is used to compare the effect of COVID-19 on the mental health of male and female students. Table 11 shows this comparison.

Table 11. Comparison of Mental Health Using Multivariate T-test

Variable	Gender	Frequency	Mean	T	F Fisher	Significance Level
Mental Health	Female	46.50	46.50	2.48	0.671	0.015
	Male	35.4	39.53	2.50	-	-

According to Table 11, the Fisher value (0.671) is at a difference level of less than 0.05, which means that there is a difference between the mental health of male and female students. According to the obtained means, the mental health of females is higher than that of males. That is, the effect of COVID-19 on males' mental health was greater. It can be said that males are more accustomed to spending more time outdoors than females, and the virus has forced them to change their habits, so it has caused them more discomfort, or even less adherence to health protocols by males has led to a higher percentage of disease, so higher psychological impact on males is observed. The disease also causes males to give up their daily activities such as going to the gym, and their inactivity during the day is one of the factors affecting their mental health. As the university environment is considered as a place for students' social relationships, which is a factor in mental health, this disease caused them to stay away from this factor. This has a greater impact on male students.

6. Conclusion

COVID-19, which started in December 2019 in China, has a very high outbreak potential and has affected all countries of the world in less than a few months. The rapid spread of COVID-19, which is one of the most important features of the virus, as well as high mortality from this disease, have faced many countries around the world, especially the developed countries, with a huge health challenge. The question of "how long this crisis will last" is an unanswered question and requires patience. Accordingly, the study of students' theories related to mental health showed that COVID-19 variables affect the mental health of students through the components of mental health. Finally, it is necessary to reject or prove the hypotheses of this research as follows:

In the first hypothesis test about the effect of COVID-19 on mental health, Pearson correlation method was used to prove that there is a relationship between COVID-19 and mental health. Then the effect was examined using regression. Accordingly, there is a direct relationship between COVID-19 and mental health; with a value of R = 0.676 at a significance level of 0.001 which is less than 0.05, this relationship is significant. To determine the effect of COVID-19 on mental health, the regression equation was calculated. Regression analysis shows that the regression of the scores of COVID-19 predictor variables towards the mental health variable is statistically significant. The value of determination coefficient ($R2 = 0.457$) also shows that the predictor variable is able to predict 46% of the changes related to mental health. Therefore, COVID-19 has an effect on the mental health of male and female urban planning students of Islamic Azad University, Mashhad Branch, and as a result, this hypothesis was proved. In the second hypothesis test about the effect of COVID-19 on the mental health of male and female students, t-test was used. According to the Fisher value (0.671) which is at a significant level less than 0.05, there is a difference between the mental health of male and female students. According to the obtained means, the mental health of females is higher than that of males. That is, the effect of COVID-19 on males' mental health was greater. It can be said that males are more accustomed to spending more time outdoors than females, and the virus has forced them to change their habits, so it has caused them more discomfort, or even less adherence to health protocols by males has led them to a higher percentage of disease, so higher psychological impact on males is observed. The disease also causes males to give up their daily activities such as going to the gym, and their inactivity during the day is one of the factors affecting their mental health. As the university environment is considered as a place for students' social relationships, which is a factor in mental health, this disease caused them to stay away from this factor. This has a greater impact on male students. Therefore, identifying the cause of these psychological disorders in students studied in this research, whose mental health may be endangered, is essential in order to maintain their mental health by using appropriate psychotherapy methods. In a situation where the mental health of

all members of a society is at risk by the highly contagious COVID-19 virus, it is better to provide appropriate treatment protocols using appropriate and remote psychotherapy methods and up-to-date facilities such as video conferencing, online programs, appropriate apps and finally telephone.

To conclude the study, it might be said that the majority of these students try to prevent the spread of the virus by following health protocols. They believe that staying at home and not communicating with the community cause depression, and they might experience some deficiencies in the future when they are about to enter the society and the labor market. Also, this disease has caused them more anger and violence, which in turn affects mental health factors, because these people enter society with a violent temper that affects the behavior of all individuals in the society. This disease leads to a series of other disorders such as obsessive-compulsive disorder which can greatly affect people's mood.

Diagram 4. Psychological Effects of COVID-19 on Mental Health
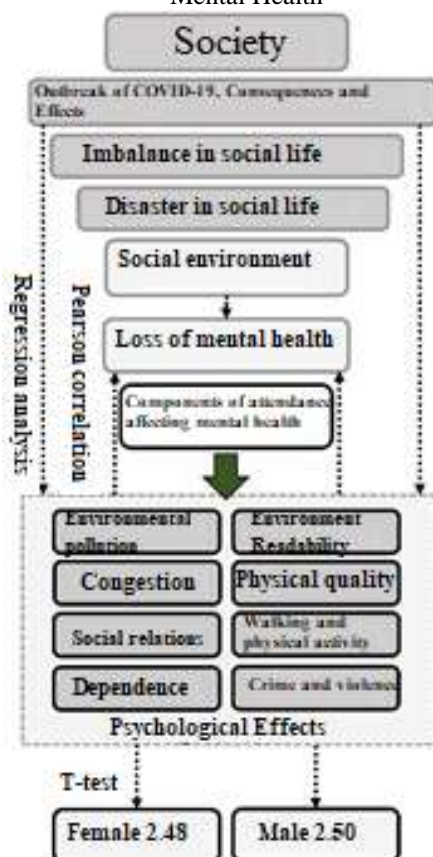
6. Recommendations

In the current high-risk situation where the mental health of all people of a community is affected by COVID-19, we can improve students' mental health and the rate of their attendance in the city and university atmosphere by identifying the mentioned psychological disorders in vulnerable people in the community and providing appropriate and targeted psychotherapy programs and protocols. In order to better design and implement the necessary measures to prevent the spread of COVID-19 and increase the students' attendance, the following recommendations are provided:

• Determining the department of public relations of the university as a reference for informing the approvals of the headquarters

• Determining personal prevention guidelines and related posters and sending them to all university units for information

• Making an instructional music video about individual recommendations in order to be displayed in the entrances and monitors of restaurant halls

• Providing a copy of the individual health guidelines to all classes and dormitory rooms

• Holding training courses on cleaning, disinfection and executive health guidelines for all service partners

• Developing and offering environmental control guidelines to all units for implementation

• Asking service personnel to continuously disinfect the workplace according to the given trainings and environmental control guidelines

• Continuous admission of students and staff with symptoms similar to colds in the health center. If necessary, the center will provide them with a medical certificate for excused absence or leave and, if necessary, it will refer the patient to the competent authorities for further investigation.

• Holding conferences and events and university visits by performing health protocols

• Eliminating fingerprint registration for employees

• Cancellation of public reception in all meetings of the dissertation defense

• Providing hand sanitizer dispensers at the entrance of restaurants, Ibn Sina floors and halls

• Guiding students residing at dormitories with cold symptoms to go to a health center

• Daily service disinfection guidelines, according to the relevant guidelines

• Forcing the nutrition contractor to use appropriate gloves and masks

• Providing continuous information in print and on the web

References

1. Abroon, Ali Asghar, Qarai, Fariba, Tabatabaeian, Maryam, Winter 2018, Analysis of Dimensions of Neighborhood Environmental Qualities Affecting Mental Health of Citizens, Case Study: Bahar & Enghelab-e Eslami Neighborhoods, Sabzevar, Journal of Armanshahr Architecture & Urban Development, pp. 251-263

2. Abroon, Ali Asghar, Qarai Fathabadi, Fariba, Tabatabaeian, Maryam, Summer 2014, Developing the principles of designing urban spaces based on promoting the mental health of citizens (Case Study: Bahar & Enghelab-e Eslami Neighborhoods, Sabzevar), Thesis for master's degree, major Urban Design, University of the Arts

3. Pakzad, Jahanshah, Bozorg, 2012, the Alphabet of Psychological Environment for Designers, Utopia Publications

4. Hakimian, Pantea, Mazhari, Mehrnoosh, Winter 2019, Proposing A Conceptual Framework Determining Urban Design Qualities Related To the Mental Health of Urban Neighborhood Residents, Urban Design Discourse- a Review of Contemporary Litreatures and Theories 2020, Volume 1, Issue 1, pp. 11-17 Ghamari, Ekhlas, Talischi, Gholamreza, Dejdar, Omid, Winter 2017, Analytical Approach to Investigate the Gender and Its Differences in Understanding Physical Space, Journal of Armanshahr Architecture & Urban Development, Issue 21, pp. 77-86

5. Azizinejad, Bahareh, Poor Haidar, Rahimeh, Soltani, Pouran, March 2014, The relationship between mental health and intra-university factors among health students in Urmia University of Medical Sciences, Journal of Urmia School of Nursing and Midwifery, Volume 12, Issue 10, pp. 139-146

6. Anna Lindqvist, Marie Gustafsson Sendén & Emma A. Renström (2020): What is gender, anyway: a review of the options for operationalising gender, Psychology & Sexuality

7. Anguelovski, I., 2020. Expanding the boundaries of justice in urban greening scholarship: Towards an emancipatory, antisubordination, intersectional, and relational approach. Annals of the American Association

8. Alter, L., 2020. Urban design after the coronavirus [WWW Document]. Treehugger. URL

9. Brooks, S.K.;Webster, R.K.; Smith, L.;Woodland, L.;Wessely, S.; Greenberg, N.; Rubin, G.J. The psychological impact of quarantine and how to reduce it: Rapid review of the evidence. Lancet 2020

10. Bliss, L., 2020. Mapping How Cities Are Reclaiming Street Space [WWW Document]. CityLab. URL

11. Carmona, M., & Punter, J. (2013). The Design Dimension of Planning: Theory, Content and Best Practice for Design Policies. Routledge.

12. Dannenberg, A.L., Frumkin, H.J., & Jackson, R. (2011). Making Healthy Places. New York.

13. Drosten, C. The continuing 2019-ncov epidemic threat of novel coronaviruses to global health—the latest 2019 novel coronavirus outbreak inWuhan, China.

14. Hegarty, P., Ansara, Y. G., & Barker, M. J. (2018). Nonbinary gender identities. In N. K. Dess, J. Marecek, & L. C. Bell (Eds.), Gender, sex, and sexualities: Psychological perspectives (pp. 53–76). New York, NY: Oxford University Press.

15. Holmes, M. (2008). Gender and Everyday Life. (M.M. Labibi, Trans.). Tehran. Afkar Publication

16. Hui, D.S.; I Azhar, E.; Madani, T.A.; Ntoumi, F.; Kock, R.; Dar, O.; Ippolito, G.; Mchugh, T.D.; Memish, Z.A.

17. Lindqvist, A., Gustafsson Sendén, M., & Bäck, E. A. (2016). Vem tycker om hen? Språk Och Stil, 26, 101–129. [Who likes hen? n Swedish].

18. Li S, Wang Y, Xue J, Zhao N, Zhu T. The Impact of COVID-19 Epidemic Declaration on Psychological Consequences: A Study on Active Weibo Users. 2020;17(6)

19. McAndrew, F.T. (2008). Environmental Psychology. (Gh. Mahmoudi, Trans.). Tehran: Zarbaf ASl.

20. Morgenroth, T., & Ryan, M. K. (2018). Gender trouble in social psychology: How can Butler's work inform experimental

21. Nieuwenhuijsen, M., Khreis, H., 2019. Integrating Human Health into the Urban Development and Transport Planning Agenda: A Summary and Final Conclusions, in: Nieuwenhuijsen, M.J., Khreis, H. (Eds.), Integrating Human Health into Urban and Transport Planning. Springer, pp. 707–718

22. Null, S., Smith, H., 2020. COVID-19 Could Affect Cities for Years. Here Are 4 Ways They're Coping Now. TheCityFix: World Resource Institute (WRI).

23. Nirmita Panchal, Rabah Kamal, Kendal Orgera , The Implications of COVID-19 for Mental Health and Substance Use, 2020

24. Rosel, L., 2020. Josep Bohigas: "El confinament fa que ens replantegem la manera de relacionar-nos amb la família, els veïns i la ciutat ". ARA.

25. Remuzzi A, Remuzzi G. COVID-19 and Italy: what next? Lancet (London, England). 2020.

26. Stevenson, D. (2003). Cities of Culture, Milton Park, Oxon, and New York, NY: Rutledge.

27. Valentino-DeVries, Lu, D., Dance, G.J.X., 2020. Location Data Says It All: Staying at Home During Coronavirus Is a Luxury. The New York Times

28. World Health Organization and Calouste Gulbenkian Foundation. Social determinants of mental health. Geneva, World Health Organization, 2014

29. Wilder-Smith, A.; Chiew, C.J.; Lee, V.J. Can we contain the covid-19 outbreak with the same measures as for SARS? Lancet Infect. Dis. 2020.

30. WHO. Novel Coronavirus (2019-ncov) Situation Report—22 Situations; WHO: Geneva, Switzerland, 2020.
31. Wang, W.; Tang, J.; Wei, F. Updated understanding of the outbreak of 2019 novel coronavirus (2019-ncov) in Wuhan, china. J. Med. Virol. 2020.
32. Yingfei Zhang, Zheng Feei Ma, Impact of the COVID-19 Pandemic on Mental Health and Quality of Life among Local Residents in Liaoning Province, China: A Cross-Sectional Study, nternational Journal of *Environmental Research and Public Health*, 2020
33. Zhu H, Wei L, Niu P. The novel coronavirus outbreak in Wuhan, China. Global health research and policy. 2020; 5:6.