

Psychological Consequences of Patients with Coronavirus (COVID- 19): A Qualitative Study

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Abstract

Objective: Infected persons to Coronavirus experience mental and social consequences because of disease. So the goal of this research is to investigate the mental and social consequences of infected persons.

Method: The population in this study was people with new coronavirus (Covid 19) in Bushehr province. The sampling method in this study was purposive and the sample size was 8 persons (6 males and 2 females). Due to the qualitative nature of the study, information was obtained through interviews and the interview process continued until data saturation. The duration of each interview was 30 to 40 minutes. The interview was semi-structured and contained open-ended questions. After completing the interview process, the responses were interpreted and coded using the content analysis method.

Results: Based on the results of the present study, the psychological consequences of this disease include negative emotions such as fear of death, depression and anxiety, reduced social activities, feelings of rejection by the community, decreased effective communication with family and society, and stigma experienced by the patient and her/his family.

Conclusion: People with Covid-19 disease experience many psychosocial consequences, and this will reduce their quality of life; therefore, use of psychologists and counselors in the therapeutic setting can be effective in reducing these consequences.

Keywords: Psychosocial Consequences, Coronavirus (COVID-19), Qualitative study.

Introduction

New Coronavirus or Covid-19 is viral disease that cause pulmonary inflammation. World Health Organization (WHO) has identified the virus as 2019-nCoV in which n means new and Cov means Crown Virus. Generally, this virus is similar to the acute respiratory syndrome called SARS, but not at all identical (Ministry of Health and Medical Education, 2020; Wu, Peng & Huang, 2020). MERS and SARS viruses, which are the family of Coronavirus, were transmitted from camels and

cats to human, respectively. The probable origin of new Coronavirus is not completely clear (Center for Strategic Reviews, 2020), but, it can be exist in bat (primary host) naturally and transmitted to human by pangolin (intermediate host) (Tavakoli, Vahdat & Keshavarz, 2020). This virus can be transferred from one person to another person, the most important factors in transmission of this virus are respiratory tract secretions and touch or contact (surface or person to person) (Lai, Shih & Ko, 2020).

Common symptoms include fever, cough and shortness of breath. Other symptoms may include fatigue, muscle pain, diarrhea, sore throat, loss of smell and abdominal pain. While the majority of

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cases result in mild symptoms, some progress to viral pneumonia and multi-organ failure. The time from exposure to onset of symptoms is typically around five days, but may range from two to 14 days (Schirring, 2020).

The WHO has published several testing protocols for the disease. The standard method of testing is real-time reverse transcription polymerase chain reaction (rRT-PCR). The test is typically done on respiratory samples obtained by a nasopharyngeal swab, however, a nasal swab or sputum sample may also be used. Results are generally available within a few hours to two days (Chen, Strych, Hotez & Bottazzi, 2020). Chinese scientists were able to isolate a strain of the coronavirus and publish the genetic sequence so that laboratories across the world could independently develop polymerase chain reaction (PCR) tests to detect infection by the virus (Brueck, 2020). Also, the General Director of the World Health Organization (2020) announced on Wednesday, March 5, that the outbreak of the coronavirus has become a global pandemic.

The Statute of the World Health Organization defines health “not only as the absence of disease or disability, but also as the optimal state of physical, mental, and social well-being” (World Health Organization report, 2001). Although World Health Organization has defined three biological, psychological and social dimensions for health, but in most countries two dimensions of psychological and social health were ignored by care takers of health system and governors. For nearly three decades, the organization has been warning this harmful neglect and pointed to the role of nearly 85% of psychosocial factors affecting health. People with coronavirus are affected in all aspects of health (physical, mental and social), and this has a negative impact on their health.

There has been little research on the psychological and social problems of people with coronavirus, some of which include mental

wellbeing (Shaw, 2020), anxiety and sleep quality (Liu, Chen, Wu, Lin, Wang & Pan, 2020). Therefore, there is no comprehensive study that examines the psychosocial consequences of people with coronavirus.

The prevalence of Coronavirus in China

In December 29th, 2019, doctors of hospital in Wuhan (China) realized unusual pneumonia patients. Nevertheless, the first case of this disease was appeared in December 12th. The following investigation showed that the origin of this disease is in Huanan Seafood Wholesale Market placed in Wuhan in center of China (Guan, Ni & Hu, 2020). After that, the unusual contagion of pneumonia was reported to WHO at 31 of December. On 1 January 2020, in response to the initial outbreak of the pneumonia cluster, the health authorities closed the market to conduct investigations, clean and disinfect the location. After widespread speculation about the causative agent, the Chinese department of the Centers for Disease Control and Prevention (CDC) finally confirmed the report published by the Wall Street Journal and then in the 9th of January in 2020, the reason of this disease was reported to be the new Coronavirus, which is named 2019-nCoV (Khan, 2020). In late January of 2020, the infection of more than ten thousand people with Coronavirus over the China has been confirmed in World Health Organization. This statistics reached to 74280 cases in China till 19 of February and 924 cases were confirmed in 24 countries out of China and sum of death cases of this infection was estimated as 2009 (National Health Commission of China, 2020).

The prevalence of Coronavirus in Iran

In 18 February (2020), two probable infected cases to Coronavirus observed for the first time in Iran in Qom province, and in 19 February the government of Iran confirmed that this Coronavirus was observed in Iran. To this end, contagious disease

identification and management teams and rapid response teams have been deployed in the city. After hours, dying of two people was confirmed by Health Ministration. On 26 February, according to the notification of Health Ministration, the death number of Covid-19 disease was 19 cases and the number of infected persons was 139 (Mizan News Agency, 2020).

On 19 March, 18,407 people were definitely infected to Coronavirus, 1,284 people died, and 5,979 patients were recovered. Also on this day, the Secretary of the Corona Combat Staff in Bushehr Province expressed that 56 persons (30 men and 26 women) were infected to this virus and of this number, 42 cases were recovered and were in home quarantine, and just 4 persons unfortunately died. It is worth noting that, Bushehr is the last city in Iran which was struggled with this virus (about 15 days after Qom which is the first city) (Corona National Headquarters, 2020).

Psychological and social consequences

Mental health means emotional and psychological health in which one can use one's thinking and abilities, have a function in the community, and fulfil the usual needs of everyday life, (Fars University of Medical Sciences and Health Services, <https://www.sums.ac>. 2019). Social health is how an individual evaluates his or her performance in society. A socially healthy person considers society as a meaningful, comprehensible and potential set for growth and prosperity, and he feels that he or she belongs to society, is accepted by society, and contributes to its progress (Bowling, 1998).

According to people with new Coronavirus, physical health was hurt and person physically are situated in adverse conditions and experience negative motions and reduced social connections, so it is predicted that other dimensions of health, such as psychological and social health, will be defected and infected persons have unfortunate

consequences in psychological and mental health. Also in according to high rate of mortality in Iran, absence of certain treatment, easy infection, lack of medical facilities in some countries and globalization of Coronavirus, it will bring some unfortunate mental and social consequences on healthy and infected persons. Therefore, this research aims to find the psychological and social consequences of Covid-19 disease on infected people in Bushehr.

Methods

Participants and Procedure

Case population in this study was the infected people to Coronavirus in Bushehr and according to Corona National Headquarters, 56 cases were infected by virus till 19 March 2020. The sampling method in the present study was purpose-based and the subjects were selected based on availability and ease. The inclusion condition of participating in this research was Covid-19 infection, patient's willingness to cooperate in research, and general condition of patients to be able to participate in research. The size of sample was 8 people who had the above conditions to participate in the research.

Since the research method in this study is qualitative, the data was obtained through interview and the process of interview continued until data saturation (Amani, Zaharakar & Kiamanesh, 2018). Because of breathing problems and probable disease development, the length of interview was short. So the length of interview was varied between 30 to 40 minutes based on mental and physical condition of participants. The interview was semi-structured and the questions were open-ended. In addition, the questions during interview were simple, understandable and clear, and academic language and professional accent were not used during interview. After finishing the interview, their responses were coded and interpreted by Content Analysis Method. Getting the consent of

participants, the texts of interviews were noted separately by three researchers and after finishing interview, the researchers reviewed and compared the answers several times to ensure the accuracy and re code them by agreement. Moreover, in order to confirm the findings, contradictory cases were examined to determine the reason for the contradiction in the findings.

Also, it is worth mentioning that the interviews were done by telephone because the researchers were not allowed to present in hospital and the participants were isolated. Interviews were done in a short period of time, less than one week.

Ethical statement

Before each interview, the researcher talked to participant about goals of study, the confidentiality of information, and period of interview. In addition, the researcher got permission for noting interview

by 3 researchers. Participants were allowed to leave the interview and then each participant was given a number in order to prevent of revelation of their names and then after getting permission, the interview was done.

Findings

As it was said before, first of all, personal and demographic characteristics were acquired. The summary of the data is given in Table 1.

As it was mentioned, in order to keep the participants anonymous in research, each participant was given a number. Among 8 participants of the research, 6 were male (75%) and 2 female (25%). The maximum age of subjects was 65 and the minimum age was 29. The average age was 49.3. Among them, 62.5% had diploma (5 persons) and the others had BA, MA and high school degree. All men were employed (2 were employees and others

Table 1: personal and demographic characteristics

Number	Gender	Age	Education	Job	What children are you in family	Marital status	Number of children	Way of infection	Number of infected people in family	Most stressful events last year
1	M	49	BA	Employee	2	Married	2	Job Mission	1	Occupational and economic issues
2	M	29	High school	Shop worker	1	Single	0	Indistinctive	0	Economic issues
3	M	52	Diploma	Shop holder	4(last)	Married	3	Infected worker	0	Father's death
4	M	40	MA	Employee	1	Married	1	Job Mission	1	Job issues
5	M	61	Diploma	Fish seller	7(last)	Married	5	Infected client	3	Economic issues and divorce of one of the children
6	M	65	Diploma	Masonry	1	Married	3	Indistinctive	0	Economic issues and family problems
7	F	48	Diploma	Housewife	3(last)	Married	2	Infected spouse	1	Economic issues
8	F	51	Diploma	Housewife	4	Married	2	Indistinctive	2	Family problems

M= male / F= female

were self-employment), and both 2 women were housewife. Among participants, 3 patients were first child (37.5%), 3 were last child (37.5%), and 2 were middle child (25%). Seven patients were married (87.5%) and one was unmarried (12.5%). Both two employees were infected in their work time, 3 persons were infected by indistinctive reasons (37.5%), and other 3 patients were infected by different ways such as: infected worker, infected client and infected spouse.

The majority of participants (5 cases= 62.5%) have at least one infected person in their family. It is worth mentioning that the number 1 and number 7 were couple and the number 2 and 3 were colleagues and worked together in one place, in which number 2 was the origin and 3 was the target. Among the patients in the family of the participants, most of them were their children and wives who were mostly recovered (6 people recovered and 2 people were in critical condition). In terms of the amount of stress and the most stressful events, the participants claimed that they suffered high level (6 cases= 75%) and others (2 cases= 25%) estimated their stress in normal level last year. The most stressful things in their lives were economic issues (5 cases= 62.5%) and others reported the factors of job problems, parental deaths and child divorce.

The purpose of this study is the evaluation of psychosocial consequences in infected people to Coronavirus in Bushehr. Based on the definitions provided for psychological and social health, the interview questions were prepared and then approved by several psychologists to confirm the content validity.

The mentioned consequences after infection to Covid-19 are in two general themes, which include psychological and social consequences. It is noteworthy that the first three questions were related to psychological consequences and the second three questions were related to social consequences. Analysis of qualitative data led to

the emergence of two categories, 10 subcategories and 31 codes, which are summarized in Table 2.

In order to evaluate psychosocial consequences, the infected people were asked some questions, such as:

- 1) How did you feel when you realized you were infected to Coronavirus?
- 2) How do you evaluate your quality of life after infection to Covid-19?
- 3) How do you evaluate your future?
- 4) What is the quality of your relationship with your family and friends during this illness?
- 5) What effect did Covid-19 have on family attitudes and behaviors with you?
- 6) How did having Covid-19 affect your family members and their social relationships?

Psychological consequences

All 8 participants said that after infection to Coronavirus, all of them suffered from psychological consequences, among which the most psychological disturbances were related to fear of death, depression, anxiety and fear of family illness by sick persons. Among two infected women, the fear of infecting their children was more than the fear of death. Feelings of tiring and impatience were seen in most of infected persons (5 men and 1 woman). Because most participants caused the infection of this virus to their family (5 persons= 62.5%), they experienced feeling of guilty and this feeling were related to family's physical situation. The more inappropriate the physical situations of their family, the more guilty they felt. Also feeling angry was seen in some of infected persons (37.5%). Such as:

The woman (P7) which infected from her husband said that: "I blame my husband, I told him you should not go to your work in this situation, but he didn't accept and he caused to be infected both of us."

Or the man (P2) mentioned that: "Thanks God

Table 2: Classes, subclasses and codes extracted from qualitative data analysis

Classes	Subclasses	Codes
Psychological consequences	Fear of death and infection of other family members	- Experience the feeling of death, - Severe preoccupation about death, - Fear of infecting other family members, - Severe preoccupation about infection of other family members.
	Depression	- Feeling bored and weary, - Frequent crying and depressed mood, - Lack of experience of feeling happy and joyful.
	Stress and anxiety	- Experiencing frequent insomnia from the severity of anxiety, - Experience emotions such as anxiety and worry.
	Feelings of guilt and anger towards yourself and others	- Feeling guilty about infecting others, - Feeling guilty about non-compliance with health tips and as a result get infected, - Feeling anger about people who are to blame for its infected.
	Job concerns	- Financial problems, - Loss of job position, - Inability to handle the work of the body or organization in which the person is employed.
	Disappointment with life and the future	- Lack of a plan for life, after complete recovery, - Lack of motivation to continue living, - Imagination of the future in the form of vague or very negative.
	Social Consequences	Decreased quality and quantity of social activities
Feeling socially excluded		- Feeling lonely and seclusion, - Feeling worthless to others after getting infected, - Feeling forgotten and rejected.
Improper behavior of those around you with patients		- Humiliating and sarcastic behavior of others, - Extremely compassionate behaviors of others.
Social stigma and rejection of the family of patients		- Disconnect those around you from the families of those affected, - Humiliation and sarcasm to the families of patients.

because my family were on trip, they were not infected, but I worked in a supermarket and this supermarket had a lot of costumers and because I put and arranged all products and objects, I was more probable to be infected than others, and this annoys me and I see nightmare in some nights.”

The woman (P8) also said that: “I really scare. I could not sleep in some nights, because of that I’m tired for nothing.”

The man (P5) also mentioned that: “I don’t know why but I don’t enjoy anything and nothing can relax me.”

About 75 percent of the participants said that their quality of life decreased after infection and believed that in quarantine their lives are wasted and they have no entertainment and this makes them depressed. Nearly all employees are worry about their job and this reduces the quality of their

lives. Such as:

The man (P4) said that: "I was always an active person and I was in connection with 100 people every day for my job and I used to go to many missions; now I sit down all day and I no longer can talk to anyone; it looks like torture to me. On the other hand, after illness and quarantine, I cannot do the office work and it really makes me anxious because I might lose my job."

Fear of death, anxiety about future and nostalgia for family's member are the most important problems of people with new Coronavirus. For example,

The man (P5) mentioned that: "I thank God that I am alive when I woke up each day, since I have infected with Coronavirus, it is like death."

The man (P6) also said that: "I really missed my wife, children and grandchild and during the day I think about whether I can see them or not."

In addition, 75% of the participants were worried about future and they said that their future are unpredictable and had a little life expectancy. For example,

The man (P1) mentioned that: "I cannot think about the future. Because I don't know whether I will be alive tomorrow or not. I am hopeless and I cannot think about future, even planning for the future. God helps us."

Or the woman (P7) said that: "I don't know what happens in future, I even don't know whether I will be alive or not tomorrow. I just think and worry about my children and grandchildren not to be infected."

Social consequences

All participants in this research said that infection with Coronavirus clearly caused to be rejected by others and reduced participation and social activities. All infected persons affirmed that the rate and quality of their communication have been affected by Coronavirus and reduced a lot. For

example:

The man (P3) said that: "I have to communicate with my family just by telephone so that they won't be infected by Coronavirus. It is true that technology has developed and I can connect and see my family by video call, but there is nothing like being with your family."

The man number P5 also claimed that: "On weekends, my children, daughter-in-law, son-in-law and grandchildren used to come to my house, but now our connection decreased because of Coronavirus and I sometimes talk to them by telephone."

Or the man number P1 said that: "Yesterday after 5 days, my brother rang me in order to talk to me, after 2 minutes conversation he said that my money charging is finishing and I will call you after charging it. His action's annoyed me, because I may die and it is not important to him."

More than half of infected persons involved in this research believe that their family's behavior has been changed after infected by Coronavirus. Almost all of them believed that these changes are negative. For example,

The man number P6 said that: "I am the first child in the family. Each year in new year all of my sisters and brothers ring me to congratulate the new year, but this year, as I was infected, nobody rang me except my little sister. They think they will be infected to Coronavirus through the phone."

Or the man (P1) said that: "I infected in job mission and then my wife was infected by me. Because of this, my wife blames me and she even doesn't want to talk to me. In my office, the room where I worked was closed and they transferred my coworkers to another room because of Coronavirus."

Or the man (P2) claimed that: "I have a lot of friends and I used to go out with my friends after work every night. After I was infected, none of them called me even though all of them know that

I am infected.”

The research participants claimed that their family's social relationship have been affected and their families are under pressure from society. For example,

The woman P8 said that: “Although all members of our family were tested in order to stay home if the result show that they are infected to Coronavirus, my husband say that when neighbors see them, they look to other side to avoid greeting and they behave in a such manner that they don't see them.”

Or the man (P4) said that: “I have a little girl who is in elementary school, she used to go to the yard once or twice a week to play with neighbor's daughters. Now that our neighbors know that I am infected, when my daughter go to the yard to play with her friends, they say to her don't come ahead, we don't play with you, your father is infected by Corona and you are infected too.”

The man (P6) also said that: “My wife and children say that in every shopping they go, they hear that everyone is chattering that her husband and their father is infected by Corona.”

Discussion and conclusion

Nowadays, unfortunately, we observe that Covid-19 has caused a lot of deaths in our country and other parts of world. This subject is so serious that World Health Organization announced this virus as an epidemic virus. The ordinate and sudden contagion of this virus has caused a general fear and anxiety in societies. Home quarantines and reduction of social activities make distress and turmoil double among the society. Moreover, the infected people are forgotten and in addition to physical health, other health dimensions such as psychological and social health dimensions are ignored; therefore, the goal of the present study is to investigate the psychosocial consequences of coronavirus patients in Bushehr province.

First, there is the discussion and conclusion in the field of demographic characteristics and life stressors of the participants in the study.

Sadegh Yarandi, Khoda Bakhshi Kulaei, Falsafi Nezhad and Khalatbari (2018) found in their studies that stress of any kind can have a negative effect on the immune system. In other words, stress weakens the human's immune system. According to Table 1, the people with Coronavirus participated in this research have experienced a lot of stressful events and this reduced their immune system and also more vulnerability against Covid-19.

Freund and Ritter (2009) has defined the middle age as 40 to 65 years old. According to Table 1, the age average of people with Coronavirus participated in study was 49.3 that implies that most patients are in the middle age. Also 75% of people in the research were men. As Table 1 shows, three quarters of infected persons were at intermediate and lower levels of university education. More than 87% were married, which is normal given the age of the patients, because people usually start a family before entering middle age and so are married in this period of their life.

The results of investigation show that the quality of psychological and social health of people with Coronavirus have been reduced after infection and Coronavirus infection have affected the psychological and social dimensions of infected persons.

Explanation of psychological consequences

Regarding the psychological consequences of the present study, negative emotions such as fear of death and infection of other family members, depression, stress and anxiety, feelings of guilt and anger, job concerns, low life expectancy and unpredictable future estimate are seen negative and vague in patients with corona disease. Mental health is one of the most important aspects of health which have serious effect on physical, social and

spiritual health. It is impossible to reach to other parts of health without mental health. In addition, mental health is important because it is related to improvement of social and individual function. In fact, providing it leads to increased efficiency in both individual and social contexts, which plays an important role in ensuring the dynamics and efficiency of any society (Momayezi, Farzane & Lotfi, 2018).

Mental health is “a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community (Dong & Bouey, 2020).

Considering the nonexistence of certain treatment for this disease and probable death for infected person, the infected people experience fear of death and negative emotions. Fear, depression and anxiety are the most prevalent psychological consequences of this disease. Other negative emotions, such as feeling guilty and annoyance and blame others for their infection are seen. Also most of infected persons complain about impatience in disease time. People with Coronavirus usually stay in quarantine and so have plenty of time, but according to their physical state and quarantine condition, they cannot use their free time in a good way.

Also it is worth mentioning that the results obtained from SARS have been used to explain the findings, because of similarity to SARS (Ministry of Health and Medical Education, 2020; Wu, Peng & Huang, 2020), and the scarce resources available.

According to the results of research done by Tsang, Scudds and Chan (2004) investigating the psychosocial consequences of SARS disease in their study, it had been shown that there were some side effects like fear, anxiety, depression and insomnia that even continue after recovery. According to Tsang and his Colleagues (2004), hopeless and fear

of death annoy the infected person exceedingly that caused to suicide in some infected persons.

Similar to results of present study, Sin and Huak (2004), in their study, investigate the psychological consequences of SARS in Singapore and realized that this disease can cause side effects like Post Traumatic Stress Disorder, depression, mental disorder, fear and anxiety in infected persons.

Explanation of social consequences

Results of this study shows that the quality and quantity of communication of people with Coronavirus to family and relatives have decreased and they believe that they were rejected by others and their activities and social and family relation have decreased significantly. Also people with Coronavirus often experienced improper behaviors of their surrounding people and their family that cause depression and lowers their self-esteem. Families of infected persons are also not immune from the social consequences of Coronavirus disease. The result implies that in addition to patients, their families are also exposed to social stigma and exclusion.

Unfortunately, we are witnessing that in viral disease, the patients and even sometimes their families exposed to social stigma and this cause psychological problems and family depression. The stigma caused by viral diseases has very irreparable social consequences for people with the disease and cause them and their families to be excluded from communication and social meetings (Person, Sy, Holton, Govert, Liang & Garza, 2004). Research shows that even among survivors of SARS, there are long-term psychological and social complications after recovery, which, long after recovery, affects mental and social health and ultimately the quality of individuals' life (Mak, Chu, Pan, Yiu & Chan, 2009).

Social health, is the quality and quantity of people involved with the community. Social health

is part of one's personal health, and it is the degree of an individual's internal reaction that is expressed as feeling, thoughts, behaviors, satisfaction or dissatisfaction with their social environment (Samiee, Rafiee, Amini Rarani & Akbarian, 2010; Pourabdol, Sobhi Gharamaleki, Hajloo & Sajjadpour, 2019). Larson (1996) defines social health as a person's report of the quality of their relationship with other people, relatives and social groups and believed that social health measures a part of one's health and includes one's inner responses (feelings, thoughts, and behaviors) that indicate one's satisfaction or dissatisfaction with one's life and social environment.

Based on the results, the social consequences of Coronavirus disease are that as due to the easily transmission of Coronavirus from one person to another and even through objects and surfaces, patients need to be isolated and their levels of activity and social participation decrease dramatically, and as human being is a social creature, this affects their social activity, which in turn, it can lead to stress, depression, and feelings of rejection.

The present investigation has some limitations, such as conducting research in Bushehr province and small sample size, short interview due to physical condition of infected persons, conducting interviews by phone and consequently lack of face-to-face communication.

Based on the results of the present study, it is recommended that psychologist and counselors be employed both in the hospital setting and during home quarantine to reduce stress of patients and their fear and anxiety. Considering religious beliefs in Iran, increasing spirituality can also increase life expectancy in these people. Entertaining during quarantine can also increase patient's quality of life and reduce their depression. Effective family relationships and family empathy can reduce stress and strain on sufferers. Families and those around them with their loving and compassionate behaviors

(away from pity) can be effective in increasing the life expectancy of patients and their self-esteem. The media also has a major role in reducing the stigma imposed on families by the mass media, especially the families of the patients that are under medical examination and will be quarantined very soon.

It also suggests that researchers investigate the other consequences of Coronavirus disease on infected persons and also investigate in other provinces of Iran. Studying other consequences of Coronavirus after complete recovery of patients can be helpful in enhancing the quality of life of those who have recovered.

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