


ORIGINAL ARTICLE

Multisectoral actions of mental health during the COVID-19 pandemic in Mazandaran province of Iran

Abdolkarim Ahmadi Livani¹ | Farzad Gohardehi² | Marzieh Azizi^{3,4} |
Mahmoud Reza Hashemvarzi⁵ | Somayeh Taghavi⁶ | Sara Tonekaboni⁶ |
Ramzanali Golchobi⁷ | Mehran Zarghami^{8,9} | Mohsen Aarabi¹⁰ | Forouzan Elyasi^{11,9} 

¹Department of Psychiatry, School of Medicine, Psychiatry and Behavioral Sciences Research Center, Addiction Institute, Mazandaran University of Medical Sciences, Sari, Iran

²Department of Health in Disasters and Emergencies, School of Health Management and Information Sciences, Iran University of Medical Sciences, Tehran, Iran

³Department of Reproductive Health and Midwifery, School of Nursing and Midwifery, Tehran University of Medical Sciences, Tehran, Iran

⁴Sexual and Reproductive Health Research Center, Mazandaran University of Medical Sciences, Sari, Iran

⁵Mental Health, Deputy of Health of Mazandaran, University of Medical Sciences, Sari, Iran

⁶Master of Science in Clinical Psychology, Mazandaran University of Medical Sciences, Sari, Iran

⁷Department of Welfare Organization, Sari, Iran

⁸Psychiatry and Behavioral Sciences Research Center, Addiction Institute, Mazandaran University of Medical Sciences, Sari, Iran

⁹Department of Psychiatry, School of Medicine, Mazandaran University of Medical Sciences, Sari, Iran

¹⁰Department of Family Medicine, School of Medicine, Mazandaran University of Medical Sciences, Sari, Iran

¹¹Sexual and Reproductive Health Research Center, Psychiatry and Behavioral Sciences Research Center, Addiction Institute, Mazandaran University of Medical Sciences, Sari, Iran

Correspondence

Forouzan Elyasi, Psychosomatic Ward, Imam Khomeini General Hospital, Razi Ave., 48157-33971 Sari, Mazandaran, IR Iran.

Emails: forouzan.elyasi@gmail.com; F.elyasi@mazums.ac.ir

Mohsen Aarabi, Department of Family Medicine, School of Medicine, Mazandaran University of Medical Sciences, Sari, Iran.

Email: mohsen.aarabi@gmail.com

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Abstract

Aim: A widespread outbreak of COVID-19 is followed by adverse effects on the mental health of the general population. Therefore, this study is an audit to investigate the activities of various organizations during the COVID-19 pandemic in Mazandaran Province, Iran.

Methods: The aim of the study was to collect the data, the relevant officials in various organizations and units were contacted to collect the statistics of actions taken in psychology and psychiatry wards. Moreover, databases such as Google Scholar and Iranian resources were searched.

Results: According to the results, different healthcare systems worked in parallel during the peak of the COVID-19 pandemic. For example, Mazandaran University of Medical Science [MAZUMS] Health Vice-Chancellor performed the following activities during this crisis: establishing a virtual crisis management working group, holding a provincial educational committee to train the crisis management teams, organizing virtual psychological intervention teams in the healthcare systems, and so forth. In addition, the mental health activities by Mazandaran Welfare Organization during

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the COVID-19 outbreak included providing hostelry free psychological counseling, quarantine boarding and rehabilitation centers, and providing harm prevention protocols of COVID-19, especially for marginalized regions. In the third level of medical centers, including hospitals, consultation-liaison psychiatry or psychiatrists and clinical psychologists, therapeutic interventions for comorbid psychiatric disorders with COVID-19 disease, and online workshops for mental health were conducted to reduce burnout of medical staff and nurses.

Conclusion: This study can provide a good guideline for different service providers by using the experiences of other centers to achieve better results.

KEYWORDS

consultation-liaison psychiatry, COVID-19, health vice-chancellor, mental health, welfare organization

1 | INTRODUCTION

1.1 | The COVID-19 outbreak in the world

According to the reports, cases of human pneumonia with an unknown cause emerged in Wuhan, China, in December 2019, and a detailed analysis of samples from the lower respiratory tract of patients indicated a new type of virus,^{1,2} leading to acute respiratory disease in the human and animal species called COVID-19.^{3,4} Low pathogenicity and high transmission are two unique characteristics of this virus that distinguish it from other species of the coronavirus family, such as severe acute respiratory syndrome-related coronavirus (SARS-CoV) and Middle East respiratory syndrome coronavirus (MERS-CoV).^{5,6}

Problems in the control of the incidence of this virus increased the number of new confirmed cases worldwide so that the high death rate of infected patients with this disease has led the World Health Organization [WHO] to introduce it as a significant public health emergency.^{7,8} The overall death rate was estimated to be between 1% and 5%, but it varies in terms of the patients' age and health status. Elderly people with significant comorbidities such as hypertension, cardiovascular diseases, and diabetes mellitus are more susceptible to COVID-19.⁹⁻¹¹ However, the current widespread incidence of the disease is partly followed by delayed diagnosis and inferior infection control methods.¹²

As reported by the WHO on October 21, 2021, 242 688 319 cases of COVID-19, and 9 932 928 deaths have been confirmed globally. Furthermore, according to the latest reports made by the WHO on October 21, 2021, the total confirmed cases and total deaths were 5 868 360 and 125 363 individuals in Iran, respectively.^{13,14}

Mazandaran is an Iranian province located along the southern coast of the Caspian Sea and adjacent to the central Alborz mountain range in central-northern Iran and is considered as one of the crowded provinces with 22 cities and 3074 million people. Its temperate climate and beautiful nature attract many passengers from different regions in Iran, even in the pandemic of COVID-19. Hence,

based on the coronavirus COVID-19 Live Tracker and Statistics, the number of positive cases reported is largely high in the pandemic. However, the latest report on 19 December 2021 showed that there are a total of 1700 coronavirus cases confirmed in Mazandaran.¹⁵

1.2 | Mental health problems during COVID-19 outbreak

This pandemic has been highly attracted nationwide. A widespread outbreak of COVID-19 causes severe physical symptoms in the general population and has adverse effects on their mental health. The outbreak of COVID-19 is associated with psychological distress and symptoms of psychiatric disorders such as generalized anxiety disorder [GAD], public panic, and mental health stress worldwide.¹⁶⁻¹⁸ In addition, the rapid transmission of the virus from human to human, unpredictability of the infected cases, lack of health equipment such as gloves and masks to prevent infection, and sometimes individuals' lack of trust in the care provided by the healthcare system may lead to public worries and increased prevalence of psychiatric problems, including anxiety and stress, depression, and other psychological symptoms.^{19,20}

A study in China that investigated the mental health status in the general population showed that the prevalence of GAD and depression were 35.1% and 20.1%, respectively.¹⁸ Moreover, events such as social isolation, misinformation of the current status of the disease, and unfavorable socioeconomic status among families had a considerable negative effect on their psychological well-being.²¹

Another study assessed the anxiety level among the general population and found 10.5%, 21.3%, 9.3%, and 9.8% of the individuals with mild, moderate, severe, and very severe anxiety, respectively. Moreover, the level of anxiety in women was higher than in men.²² According to a study conducted in Mazandaran, Iran, which investigated the mental health status and psychosocial problems during nationwide COVID-19 quarantine in Iran, 22.5% of the participants had moderate to severe depression, and 38.5% and 42.7% of



the individuals experienced moderate to severe anxiety, and stress, respectively. However, in 14.5% of the participants, the psychosocial effect of COVID-19 was different from the possible post-traumatic stress disorder to immunosuppression.²³

One of the studies that assessed the role of social networks on the perceived stress of individuals due to COVID-19 showed that people using social media networks have higher perceived stress than users of official sources. This study emphasized that the media worsen the anxiety level among the general population due to their continuous emphasis on bad news, the rapid spread of the disease, and unavailable treatment.²⁴

The literature review demonstrated the study of the psychological status of the general population and patients in different papers. A qualitative study that assessed the psychological impact of COVID-19 on patients with substance use disorders revealed that COVID-19 severely affected their thoughts, feelings, and behaviors. Furthermore, patients shared their anxieties about themselves and their relative's health. Frightening thoughts were associated with negative feelings and behaviors, such as stress, anger, avoidance, and isolation. Consequently, those still in treatment were tempted to restart using drugs due to social isolation.²⁵ According to a study that compared the distress rate of Iranian and Chinese adults during the COVID-19 epidemic by the Peritraumatic Distress Index showed that the level of distress in Iranian adults is significantly higher than in Chinese adults.²⁶

The most stressful mental health issues for Iranians during the COVID-19 epidemic were situation unpredictability, uncertain epidemic end time, and seriousness of the risk among people. These issues, along with some misinformation, increased concerns and stimulated common psychiatric disorders such as anxiety and depression among them.²⁷

Several studies showed that both confirmed and suspected COVID-19 patients may experience the adverse effects of this infection, including fear of death and severe physical disabilities.^{28,29} Results also indicated that major psychiatric disorders such as GAD and panic disorder can lead to shortness of breath among individuals, and anxiety in healthcare professionals can result in daily dysfunction in the workplace and sleep disorders.¹⁹ Irrespective of the country, multidisciplinary mental health teams (including psychiatrists, psychiatric nurses, clinical psychologists, and other mental health professionals) should be aware of the psychological manifestations of the general population and provide appropriate strategies to manage their specific needs.^{17,21,28}

1.3 | Instructions and management of mental health during COVID-19 outbreak

1.3.1 | Guidance and management of mental health during the COVID-19 outbreak

Psychological counseling services, including crisis interventions, telephone, the internet and application-based counseling,

and other psychiatric remedies, have been widely considered by local and national mental health institutions in response to the COVID-19 outbreak.³⁰⁻³² On February 2, 2020, the Chinese foreign council announced that the launch of the psychological hotlines across the country is essential to help the epidemic situation.³⁰ Moreover, various governmental and private organizations in Iran have implemented comprehensive psychological public health interventions such as different guidelines and instructions for effectively coping with and responding to the COVID-19 pandemic. These guidelines can be used for all groups, such as the general population and healthcare workers in the therapeutic contexts.¹⁶

According to the literature review, although several studies cross-sectional studies, clinical trials, letters to the editor, and brief reviews have been conducted on the mental health status of the general population, physicians, and nurses in the Coronavirus epidemic worldwide, as far as we know, there is no comprehensive review of the psychological interventions and guidelines performed in Iran.

Therefore, the present study was conducted to review the psychological interventions of different organizations such as the psychiatric department of Mazandaran University of Medical Sciences (MAZUMS), healthcare systems, and welfare and Red Crescent organizations in the pandemic of COVID-19 in Mazandaran province.

2 | METHODS

As mentioned earlier, this study is an audit to investigate the activities of various organizations in Mazandaran Province, Iran, during the COVID-19 pandemic. Therefore, the relevant officials in various organizations and units were contacted to collect the statistics of actions taken in psychology and psychiatry wards. Moreover, databases such as Google Scholar and Iranian resources were searched using appropriate keywords, including behavioral reactions, COVID-19, psychological responses to achieve published information about the psychological interventions and strategies to decrease mental health problems due to Covid-19 in various governmental or public agencies and non-governmental organization (NGOs). The authors had no limitations on searching databases.

3 | RESULTS

According to the analyses, crisis management to decrease stress and psychological pressure in program target groups during COVID-19 was presented as follows:

Various organizations in Mazandaran province provided mental health interventions during the COVID-19 pandemic. The activities performed by these organizations were categorized as below:



3.1 | The psychosocial intervention action plan during the COVID-19 pandemic by MAZUMS Health Vice-Chancellor

3.1.1 | Intra-organizational coordination programs such as

1. Establishing a virtual crisis management working group by the correspondence of psychological support in the Drop in Center (DIC) crisis,
2. Correspondence with university deputies, managers of the healthcare systems, and heads of hospitals in the province by committee members
3. Holding a provincial educational committee to train the crisis management teams by the crisis management group.

3.1.2 | Extra-organizational coordination programs such as

1. Correspondence with the psychological support in the DIC crisis of the organizations involved in psychological interventions,
2. Preparing the educational materials with crisis intervention content by committee members, and
3. Organizing virtual psychological intervention teams in the healthcare systems by psychosocial health and addiction management of the health vice-chancellor.

3.1.3 | Technical and executive psychological interventions based on prioritized groups, such as

1. Organizing virtual psychological intervention teams in hospitals by mental health management of the deputy of treatment,
2. Organizing virtual psychological intervention teams in educational centers by the university psychiatry department,
3. Organizing virtual psychological intervention teams in faculties by the student counseling centers and student and cultural deputies,
4. Telephone counseling through the national system 4030 and 123-1480 of welfare organization by the psychosocial health and addiction management of the health vice-chancellor,
5. Phone-based follow-up of the COVID-19-infected cases based on the integrated health system by mental health experts of comprehensive health service centers,
6. Performing presence counseling for the health team by the crisis management teams,
7. Performing presence counseling for the deceased families after the quarantine period (grief management) by mental health experts of comprehensive health service centers,
8. Determining the selected group of professors by committee members,

9. Performing face-to-face educational sessions by teams of university professors,
10. Performing virtual educational sessions by teams of university professors, and
11. Supervising by committee members.

3.1.4 | Supportive interventions such as

1. Evaluating the mental health status of the health workers' team for psychological support by psychologists,
2. Establishing executive mechanisms for staff leisure by corresponding with the psychological support in the crisis,
3. Reducing the working hours of treatment staff by corresponding psychological support in the crisis, and
4. Making a plan to reduce the occupational burnout level through different interventional programs by corresponding psychological support in the crisis.

3.1.5 | Monitoring and supervision programs

1. Developing monitoring and supervising checklist by the person in charge of psychological support in the Drop in Center (DIC) crisis,
2. Monitoring, supervising, and evaluating the performance of crisis intervention teams by heads of units,
3. Collecting and organizing the feedbacks and sending them to the subordinate units by the person in charge of psychological support in the DIC crisis, and
4. Sending an acknowledging certificate to superior colleagues regarding their educational activities by the person in charge of psychological support in the DIC.

3.2 | Activities of the psychiatry department

3.2.1 | Activities of consultation-liaison (CL) psychiatry unit in the general hospital of Sari city in MAZUMS during COVID-19 pandemic

Imam Khomeini hospital is the largest university hospital in Sari city, the capital of Mazandaran province of Iran, and receives referrals from about 2.8 million of the population. The hospital has different specialized and sub-specialized wards, including the CL psychiatry unit (a subset of the psychiatry department of MAZUMS). During the pandemic, the hospital converted to the COVID-19 center. It has 328 beds, 11 wards, and during the COVID-19 pandemic, from January 2020 to April 2020, 10 wards and three intensive care unit [ICU]s of the hospital dedicated to a COVID-19 inpatient ward. According to the recorded statistics, the confirmed cases of COVID-19 were 77 individuals and 1860 individuals were considered as suspected cases of COVID-19 from February 2020 to June 2020.



3.2.1.1 Presence of psychiatrists in COVID-19-ICU ward (two psychiatrists in CL unit of two general hospitals from April 27, 2020, two psychosomatic medicine fellows (they were present in the morning shift and gave telephone supervision to the psychiatry residents at other times.) and three psychiatry residents in two general hospitals with the 24-hour presence in the hospitals.

3.2.1.2 Full-time attendance at the hospital for CL psychiatry.

3.2.1.3 Preparation of educational material and media product (videotapes for public and professionals, which were attached on the university website and virtual networks).

3.2.1.4. Communication and advice to authorities.

3.2.1.5. Face-to-face consultations.

3.2.1.6. Face-to-face consultations with patients (around 400 in-patients with COVID-19 pneumonia or ARDS),

3.2.1.7. Face-to-face consultations with treatment and caring staff, and.

3.2.1.8. Face-to-face consultations with the patients' relatives.

3.2.1.9. Unfortunately, setting up special wards for COVID-19 patients led to the closure of the psychosomatic inpatient ward due to the limited capacity of Imam Khomeini Hospital.

3.2.2 | Activities of other parts of the department of psychiatry in Zare Hospital of Sari city in MAZUMS during the COVID-19 pandemic

Zare Hospital is located in the suburb of Sari. This hospital is the largest medical and educational psychiatry referral center with specialized and sub-specialized wards and units, including adult psychiatry, child and adolescent psychiatry, emergency psychiatry, addiction psychiatry, sleep disorders wards and psychotherapy, clinical psychology, and instrumental diagnostic-therapeutic unit.

3.2.2.1. Increasing the activities of psychiatric wards in this hospital after the closure of psychiatric wards in other cities and neighboring provinces (Golestan province) to cover the patients with acute psychiatric disorders,

3.2.2.2. Setting up two men and women special wards for psychiatric patients with COVID-19 comorbidity at the province's psychiatric referral center in Zare Hospital,

3.2.2.3. Shortening the hospitalization period to decrease the possible infections to coronavirus,

3.2.2.4. Launching a telepsychiatry clinic for follow-up and management of psychiatric patients to prevent traffic to the psychiatric clinic in Zare Hospital,

3.2.2.5. Engaging some hospital psychologists to provide psychological services in hospitals without any psychologists,

3.2.2.6. Increasing the unobserved dosing privileges (take-homes) and adequate doses of methadone, buprenorphine, or opium tincture at longer intervals and stock up on supplies in addiction clinic to prevent the interruption of maintenance treatment of some quarantined patients who should receive their alternative maintenance treatment regularly, and.

3.2.2.7. Unfortunately, the above activities led to the closure of the child and adolescent and addiction psychiatry inpatient wards due to the limited capacity of Zare Hospital.

3.2.3 | Virtual activities

3.2.3.1. Educating psychological issues related to COVID-19 (23 sessions of journal club for psychiatry residents and fellows of psychosomatic medicine, from March 8, 2020, to May 20, 2020) in the Imam Khomeini hospital, weekly meetings of case report and the journal clubs, which were held at Zare Hospital, many of which were devoted to COVID-19.

3.2.3.2. Changing the method of teaching medical students in the medical school and teaching courses related to psychiatry in other colleges to teaching in cyberspace.

3.2.3.2.1. Uploading audio-visual recorded theory courses in a system set up for this purpose at the university (called Navid System),

3.2.3.2.2. Teaching some of the practical lessons of medical students in Skype and Adobe Connect virtual spaces using actual patients and/or standardized patients (SPs).

3.2.3.2.3. Clinical group therapy (Balint groups) with the cooperation of the psychotherapy and CL psychiatry units of the university for healthcare providers.

3.2.3.2.4. Continuous training of general practitioners, psychiatrists, other medical professionals, and clinical psychologists in cyberspace and allocating most of the training topics to the COVID-19-related problems.

Psychologists and psychiatrists employed in provincial hospitals, such as those in the Zirab district,³³ had therapeutic and counseling activities during the COVID-19 pandemic.

3.3 | Research on COVID-19

3.4.1. The Vice-Chancellor for Research and Technology of the university formed a special committee to quickly review research proposals related to COVID-19. Then, about 195 proposals were approved from February 2020 to June 2020. 4.2—Psychiatry and behavioral sciences research center and addiction institute of the MAZUMS designed and implemented several research projects related to COVID-19.

3.4.2. The University Scientific Journals also prioritized the review and publication of the COVID-19-related papers. In this regard, 144 papers were published in 2020.

3.4 | Mental health activities by Mazandaran Welfare Organization during COVID-19 outbreak

3.4.2.1. Providing hostelry free psychological counseling by 20 psychologists in three shifts [workload issues], especially morning



shifts in the phone-based counseling center with call numbers 1480 and 123 of the province welfare organization (COVID-19-related calls were estimated to be 7678 cases, accounting for 55% of total calls.). Among the COVID-19 pandemic-related calls, 2885 cases (38%) were about anxiety due to the pandemic among the general population, 3952 cases (51%) included family and marital problems, and 841 cases (11%) was about the parenting and behavioral management process of children.

3.4.2.2. Establishing the "Talk with me" system by participating 120 psychologists and professors of universities, as well as the provincial government, welfare organization, MAZUMS, psychology organization, and related non-governmental organizations (Saman). Until now, 7500 calls were recorded.

3.4.2.3. Establishing a smart system to evaluate the people's psychological status who were exposed to COVID-19, determining the level of their anxiety and depression, and presenting required recommendations and referrals.

3.4.2.4. Participating 34 non-governmental organizations with the welfare organization and providing self-care education, health packages, phone-based systems, and presence follow-up by 250 active volunteers in the member assistance in the mental health centers.

3.4.2.5. Using social networks and cyberspace to enrich the families' free time and create social vitality and preventing the social harm and addiction by widespread participation of volunteers and social partners.

3.4.2.6. Quarantine boarding and rehabilitation centers (such as the ones for the physically and mentally disabled and the chronically ill psychiatry patients), banning visits, and severe restrictions on entry and exit to these centers to prevent the spread of COVID-19.

3.5 | Social activities by Mazandaran Welfare Organization during COVID-19 outbreak

3.5.1. Providing harm prevention protocols of COVID-19, especially for marginalized regions and labor children in the province and referring them to the organization and daily presence of social emergency experts in marginalized regions and providing psychosocial services to residents of these areas, especially to labor and street children.

3.5.2. Creating virtual channels to prevent COVID-19 harms in the province with an approach to promote awareness and psychological and physical health in the target groups of the welfare organization.

3.5.3. Creating a self-rating psychological system to screen individuals with stress, anxiety, and depression due to COVID-19.

3.5.4 Launching COVID-19 new-age programs predominantly for children of dormitory quasi-family centers to optimize their leisure time and promote their mental health.

3.5.5. Spiritual, psychological, and livelihood support from the welfare target community.

3.5.6. Designing and preparing clips and distributing and installing brochures and banners to inform about the control process of the psychosocial harm caused by COVID-19.

3.6 | Activities performed by Red Crescent Society during COVID-19 outbreak

The statistics from the Red Crescent society in Mazandaran showed that COVID-19 was screened by community screening design (family physician) and participation in the local services.

In the community screening program, 1550 individuals were the average volunteers in the screening per day. Due to 20 divisions of Mazandaran province screening, 63 004 individuals were screened for COVID-19 in 768 screening centers so that 1356 cases of COVID-19 were identified during approximately two months (April 2, 2020, to May 18, 2020).

According to the data, 151 volunteers participated in the screening in 181 service areas. In addition, they distributed 861 food aid packages and 623 hygiene packages for poor people and performed 33 other interventions during approximately two months of COVID-19.

Furthermore, 4458 and 188 people received emotional and medical support during the COVID-19 epidemic in 429 health centers located in 20 districts of Mazandaran. Finally, a total of 2408 households (11 643 people) received these aids under "Hatefan-e Omid Program," which means "Callers of Hope."

Basically, the Hatefan-e Omid's actions for the general population included stress management, guiding the process of coping with negative emotions, annoying thoughts, denial and disbelief, interpersonal relationship skills education, grief therapy, and some work plans such as visiting households, psychosocial evaluation, primary short-term counseling, crisis management, case management, and related activities.

4 | DISCUSSION

This study aimed to report the psychological activities and interventions performed by different organizations such as welfare organizations, Red Crescent Society, MAZUMS health, research and education Vice-Chancellors, and Department of psychiatry in Mazandaran province of Iran during the COVID-19 outbreak. In general, the COVID-19 pandemic led to several physical and psychological health problems in the general population, healthcare providers,³⁴ and educational activities of medical sciences students.³⁵ According to the results of a study that investigated anxiety and depression in health workers and the general population during the COVID-19 epidemic in Iran, 65.6% experienced moderate to severe anxiety symptoms, and 42.3% had moderate to severe depressive symptoms. In addition, findings indicated a higher prevalence of anxiety in females than in males and a higher prevalence of anxiety in individuals infected with COVID-19 than in the non-infected



cases.³⁶ For example, Lee et al's study found that 11% of the hospital workers and quarantined hemodialysis patients had anxiety symptoms during the 2015 MERS epidemic, and 15.1% of samples were depressed in the early stages of the outbreak.³⁷ A nationwide survey of psychological distress among the Chinese population during the COVID-19 outbreak showed that 35% of respondents experienced psychological distress.³⁸ Another web-based study in China investigated the GAD, depressive symptoms, and sleep quality during the COVID-19 outbreak and revealed that the prevalence of GAD, depressive symptoms, and sleep quality were 35.1%, 20.1%, and 18.2%, respectively. In this study, younger individuals spent too much time thinking about outbreaks, and healthcare providers were at a high risk of psychological disorders.¹⁸

One of the essential activities that health organizations in the pandemic should perform is to identify the groups at higher risk of psychological morbidities, such as marginalized, foreigners, and other at-risk groups to provide timely psychological interventions.⁸ The literature revealed that although quarantine during COVID-19 increases the possible psychological and mental problems, quarantine leads to a delay in the availability of timely psychological intervention and routine psychological counseling. Therefore, new types of feasible and accessible timely psychological strategies are needed to solve some of the psychological problems among the general population.³⁹ Psychological crisis management includes three main principles during the outbreak:

1. Detecting the mental health status in different populations exposed to the COVID-19 pandemic,
2. Identifying individuals at high risk of suicide and aggression, and
3. Providing proper, timely psychological interventions in affected cases.

The same actions have been taken in research projects in the psychiatry department and psychiatry and behavioral sciences research center of addiction institute in MAZUMS, the CL psychiatry unit of Imam Khomeini Hospital, and psychiatry wards of Zare hospital. In hospitalized patients with mental illness, the health policy should reduce the outpatient visits, tightening the admission criteria for new patients, and shortening the mean days of hospitalization to decrease the possible COVID-19 transmission.⁴⁰

During COVID-19, governmental health organizations such as healthcare systems, hospitals, and medical universities in each country considered comprehensive interventional psychological programs, including activated online counseling services, social media platforms, and e-mails or electronic letters to improve the psychological health support of the population.^{29,34} For example, different universities and organizations and the fixed centers in Iran, including Mazandaran province, formed free mobile diagnostic teams and face-to-face visits⁴¹ or online or telephone counseling to manage crises for people at risk of COVID-19.⁴² Moreover, different universities and organizations have published various educational paper-based and electronic materials about COVID-19.^{33,43-45} These published electronic files aimed to increase the general population's

awareness of the increased possible psychiatric disorders and enhance their ability to cope with the emotional challenges during the COVID-19 pandemic. In general, psychological interventions should be implemented by psychologists and psychiatrists of different universities, institutions, and organizations based on a comprehensive assessment of risk factors leading to psychological problems, such as poor mental health before a crisis, injury to self or family members, life-threatening circumstances, panic disorder, isolation from the family, and low family income.⁴⁶

The National Center for Mental Health, in Manila, Philippines, recommended psychological counseling for people quarantined in Daegu, as well as those who have recently returned from Wuhan. The center also published guidelines for cases with symptoms of COVID-19 to increase their skills to relax and control distress during the pandemic.⁴⁷ The Korean Neuropsychiatric Association has also published guidelines through the Ministry of Health [MOH] and Welfare to focus on five groups: the general population, the quarantined individuals, parents of the young children, medical health professionals dealing with COVID-19 patients, and other medical professionals. These guidelines emphasize individuals' attention to reliable information and consider perceived stress to this unpleasant pandemic situation to be normal. Finally, the Psychological Support Group Network of the MOH and Welfare in South Korea provided hotlines for the current mental health crisis, in which the response system is different for individuals with COVID-19 and their families compared to the quarantined and general population.⁴⁸ These results were similar to the activities performed by mentioned organizations in Iran, including Mazandaran province.

Several western countries such as the UK and the USA have provided advanced psychological crisis interventions to address public health emergencies and psychological distress.⁴⁹ During the outbreak of COVID-19 in China, studies on the psychological crisis management showed the beginning of psychological interventions by MOH in the different regions of the country. During the SARS pandemic in 2004, the Chinese Government published guidelines about psychological crisis interventions through telephone hotlines opened to the public for strengthening the mental health of the general population and empowering them to cope with public health emergencies. However, the organizations and institutions providing psychological interventions faced several problems. Firstly, inattention to the practical implementation of interventions and inadequate planning and cooperation between different departments in various regions and subordinates led to consequences such as wasted mental health resources, lack of timely diagnosis, and poor follow-up and evaluation of patients. Hence, we cannot certainly claim that we did not have such problems in the present study. Secondly, the lack of cooperation between the community health services and the mental healthcare organization in that country, leading to patients with COVID-19 or at high-risk status and difficulties in accessing appropriate psychologists, and a lack of appropriate treatment. Furthermore, the lack of specialists providing psychological interventions or their multiple responsibilities reduced the effectiveness

of the interventions.⁵⁰ According to the results obtained from the present study, the lack of cooperation between different organizations providing psychological activities for the general population was observed in Iran, including in Mazandaran, during the COVID-19 pandemic.

One of the studies conducted during the COVID-19 pandemic in Singapore found no credible organization to plan and coordinate psychological interventions. It should be mentioned that each of the clinical systems such as hospitals, polyclinics, and private systems provide their psychological interventions in the present study, showing their minimal relationship with each other. This condition leads to a waste of resources and reduces the effectiveness of interventions.⁸ Another study in China introduced remote written counseling as a practical psychological intervention called "structured letter therapy" that combines consultation, diagnosis, and treatment and consists of a patient page, an intervention page, and a continuation page.³⁹ Some authors emphasized psychological interventions, including cognitive behavioral therapy [CBT] and mindfulness-based therapy [MBT] as the mental health strategies to attack the psychological effects of COVID-19.⁸

According to the review of the literature, it is of high importance to establish a public system to verify the validity of information published by the media and communities. Moreover, mental health authorities should continuously increase the social support systems and eliminate the stigma of the disease.⁴⁸

4.1 | Limitations of the study

Part of Mazandaran province is covered by another university called Babol University of Medical Sciences, where the actions of that university could not be accessed by the authors. Although municipalities, NGOs, and private clinics have performed various activities during the COVID-19 epidemic in Mazandaran, we did not mention them due to inaccessibility to their information. Therefore, the lack of accurate records of activities is another limitation that reduces the validity of the present study.

5 | CONCLUSION

According to the results, psychological interventions are an essential part of the combat against the COVID-19. Despite the useful steps that have been taken spontaneously, it was found that experiences of other centers and coordination between different service providers can provide better results and improve the current situation.

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CONFLICTS OF INTERESTS

The authors declare that they have no conflict of interest.

AUTHORS' CONTRIBUTION

Abdolkarim Ahmadi Livani, Mahmoud Reza Hashemvarzi, Somayeh Taghavi, and Sara Tonekaboni were activated in MAZUMS Health Vice-Chancellor and collected the data; Farzad Gohardehi and Ramzanali Golchobi were activated in Mazandaran Welfare Organization and collected the data; Marzieh Azizi wrote the draft of the paper; Mohsen Aarabi was the coordinator of the paper, collected the data, and contributed to editing of the manuscript; Mehran Zarghami contributed to editing of the manuscript and Forouzan Elyasi designed the study, collected the data, contributed in writing of the paper draft and contributed to editing of the manuscript.

ETHICAL APPROVAL

All procedures performed in the study involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards. The Ethics Committee of MAZUMS approved the study (Ethical code: IR. MAZUMS.REC.1399.7718).

INFORMED CONSENT

Not applicable.

REGISTRY AND THE REGISTRATION NO. OF THE STUDY/TRIAL

Not applicable.

ANIMAL STUDIES

N/A

APPROVAL OF THE RESEARCH PROTOCOL BY AN INSTITUTIONAL REVIEWER BOARD

N/A

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. Since our data contain potentially sensitive Institutional information, data sharing would require additional written form of informed consent for the information sharing.

ORCID

Forouzan Elyasi  <https://orcid.org/0000-0002-6872-481X>

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