

# Experiences of primary health care systems in the face of pandemics: A systematic review

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## ABSTRACT

One of the most fundamental challenges of the health system in the world is dealing with pandemics. Strengthening the primary health care system is a solution for crisis resolution, proper response during crisis and stronger recovery of the system after crisis. This study examines the systematicity of other experiences in establishing or strengthening the primary health care system in dealing with pandemics. In this systematic review, Pubmed, Scopus, Web of Science, Science Direct, and the World Health Organization website were used to search for articles. Two people independently screened the titles and abstracts. In total, 24 articles and 6 reports were extracted. By reviewing the articles, the interventions of different countries to deal with pandemics at the PHC level were divided into three general categories. Intervention at the level of policymakers (seven interventions), intervention at the level of PHC systems (ten interventions), intervention at the community level (three interventions) that each of these interventions at these three levels had a significant impact on improving the performance of the PHC system in dealing with the pandemic. The evidence based on the results of a systematic review of the experiences of primary health care systems (PHC) showed that by applying a comprehensive, coherent and community-based approach in the three areas of policymakers, PHC systems and society, it is possible to formulate policies. And taking appropriate measures to manage and face pandemics was successful.

**Keywords:** Experiences, Pandemic, PHC, Exposure

## Introduction

Pandemics are among the most important crises that affect all structural, economic, social, political and cultural aspects and especially the health systems of different countries [1]. Epidemics and pandemics that have occurred until today have always caused an increase in the costs of the health system, a disruption in the provision of health services, an increase in the workload of the health workforce, an increase in the demand for medical services, etc., which can further lead to collapse. become health systems [2-4]. A pandemic is the occurrence of a disease, a specific health behavior or other health events in a region or community in a way that is clearly higher than normal expectations [5]. Among

the pandemics that have occurred in the past decades, we can mention tuberculosis, MERS, N1H1 flu, cholera, and the Covid-19 pandemic, which has turned into a global public health crisis at a very high speed since 2019 [1]. This pandemic, which started in late 2019 in the Chinese city of Wuhan, showed how vulnerable countries' health systems can be to such crises. According to global statistics, by June 17, 2022, more than 535 million confirmed cases and more than 6.3 million confirmed deaths due to SARS-Covid-19 have been recorded [6]. The management and control of international crises is through a set of strategies and special measures or optimal responses in order to contain and control them, therefore, after facing various pandemics, the health systems apply many changes in their

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structures. have had various successful and unsuccessful results [7].

The development of the primary health care (PHC) system can be one of the most effective interventions in the direction of strengthening the health system and establishing an active prevention system, instead of a passive treatment-oriented system, in the face of crises such as pandemics. Today, the approach of health systems is much more focused on PHC than in the past, and the managers of the health system in interaction with experts in this field have made various positive and successful interventions in the PHC system, although there are still many fields of expansion in this sector. has it. Since the outbreak of the covid-19 pandemic, many countries have faced numerous problems in the treatment system, such as the lack of equipment and manpower, the lack of hospital beds, the lack of drugs and many other problems. It has been very high and for a relatively long time [8, 9]. For this reason, many managers of the health system paid special attention to PHC so that they could compensate for the possible limitations of other sectors, including the treatment system, by taking advantage of the benefits of PHC, including its low cost and greater availability [10, 11].

Primary health care systems are also faced with various pandemics, challenges such as: the limited role of primary health care in covid, the use of primary health care centers only to collect samples for covid testing, not using health liaisons, focusing on In providing services, hospitals experienced the lack of geographical access of people to the centers, the lack of support for the development of primary health care. Also, other studies identified the problems caused by the pandemic in low-income and rural areas; Among these problems can be the lack and limitation of resources and equipment and facilities for care and treatment and health, too many elderly and undeveloped people, cultural-social communication barriers, hosting travelers who come for vacation, crowded houses, non-functionality. Personal isolation, low level of education and literacy, small primary health care teams with high workload, shortage of hospitals and hospital beds, very large areas covered by a team, high turnover and instability of rural forces, exhaustion and disability of employees and reduced capacity. care teams, lack of personal protective equipment, lack of diagnostic tests and sufficient treatment facilities and weak supply chain [12, 13].

Also, these studies provided solutions to deal with the challenges and problems of the crisis situation: clarifying the weaknesses and the gap between the goals and the existing situation, unity and political commitment for planning, focusing on the development of primary health care and the front line of service delivery. Increasing and strengthening the capacity to provide services at the level of primary health care, the availability of a family doctor, a multidimensional approach to health and taking into account other aspects of the health of individuals and society and the use and adherence to national guidelines, providing security, timely payments and sufficient and providing sufficient human resources to provide services, including the measures taken, have been in accordance with the state of the countries [13, 14].

A study conducted by Kinder *et al.* showed that in the face of pandemics, it is necessary to integrate primary care and essential public health services for the appropriate response and resilience of the PHC system, and policies and programs in the same direction. to be This study pointed out that the development of a comprehensive national plan to deal with the pandemic, the use of existing capacities, full coordination between the levels of policymakers and laws and providers and caregivers, and the sharing of patient and community information between primary care and public health forces. Strengthening the resilience of the primary care system is necessary to improve response in pandemics [15].

The following article is a systematic review of the experiences of health systems in applying various interventions in the primary health care system in order to deal with pandemics. According to our investigations, several studies have been conducted on the impact of PHC on dealing with pandemics worldwide, and a significant number of them are related to the Covid-19 pandemic. Meanwhile, other articles about other pandemics and infectious diseases also contain very interesting points, and this article tries to address their important issues. In the hope that by using the content, health systems can provide an adequate and appropriate response in the face of epidemics and pandemics.

## Materials and Methods

Studies were retrieved using PubMed, Scopus, Web of Science, and Science Direct databases, which index a large proportion of published authentic journals. Also, reports from the search on the World Health Organization (WHO) website were added to the studies. Advanced search was done using Free Text and MESH words "Primary Health Care", Pandemic, Response, Experience, in title, abstract and keywords fields.

Entry criteria include: the field of primary health care, performing any health intervention (proposal, design, implementation, evaluation of interventions) during pandemics and epidemics caused by infectious diseases, articles in English and Farsi, original research, case studies and reviews and reports of the World Health Organization, the possibility of accessing the full text of the article without time and place restrictions. Dissertations, notes, commentaries or editorials and epidemics related to non-communicable diseases (such as diabetes) were not included in the research. Also, many of the studies found were related to the field of treatment and were excluded from the research.

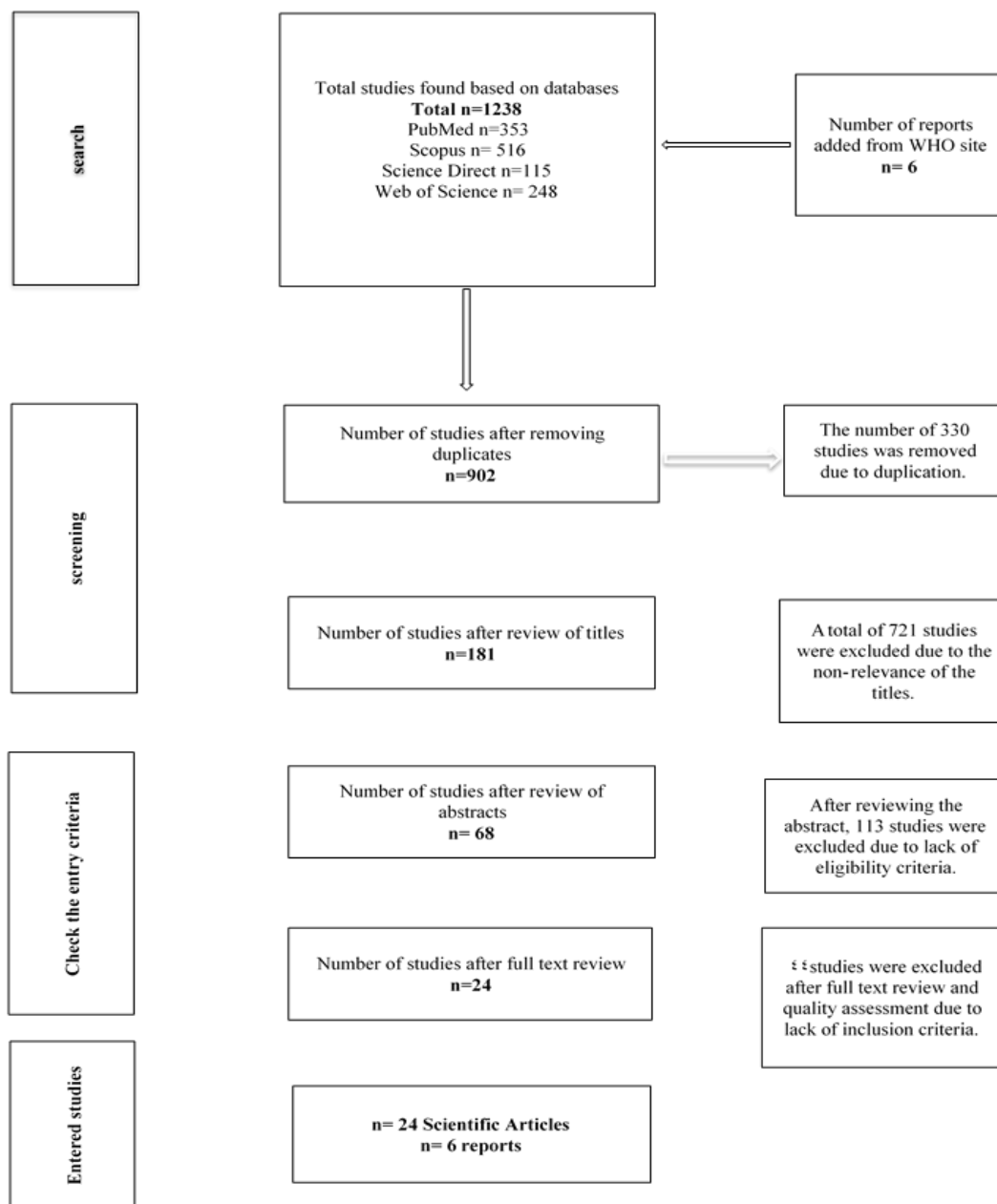
A total of 1232 studies were entered into the Endnote software from the search in the selected databases, of which 330 were removed due to duplication. Screening of abstracts, titles and full-text files was done by two authors (MH.N/H.Gh). In case of disagreement, it was resolved by consulting a third person (A.A). First, 721 cases were excluded from the study because the titles were not related. In the next step, the abstracts of the selected articles were reviewed using inclusion and exclusion criteria, and 68 studies remained. In the third stage, the full text file of the articles was studied and after evaluating the quality of the articles,

finally 24 scientific articles were included in the research (Chart 1).

According to the results of the regular search of the databases, the codes were grouped under classes, these classes were chosen to cover all the data (codes). The combination of data from articles and reports was done descriptively. The information was classified based on three approaches from the perspective of the government (policymakers), health system (PHC) and society (people), and then the data was divided into subgroups in each area. The results of the implementation of interventions in each area have also been extracted.

## Results and Discussion

The JBI checklist was used to evaluate the quality of included studies [16]. Each question of this checklist includes four options: yes, unclear, no and "not applicable". Based on this, the studies after the evaluation, in one of the strong levels (more than 75% of the score = 3), moderate (more than 50% of the score = 2) and weak (less than 50% of the score). =1) were categorized. 11 of the studies had an average quality score, 13 had a high quality score, and the rest had a poor quality score (2 articles), which were excluded from the study (**Figure 1**).



**Figure 1.** The process of extracting studies: experiences of primary health care (PHC) systems in facing the pandemic.

The interventions that different countries have implemented so far at the PHC level in order to deal with pandemics can be classified into three general categories of interventions at the

level of policy makers, primary health care systems and society (people) (**Table 1**). In the following, each of the levels will be briefly reviewed.

Table 1. Interventions at the three levels of policy makers, health system and society

Politics	Actions	Results
inform	<ol style="list-style-type: none"> <li>1. Installing stickers on the doors of people suspected of having a disease during quarantine</li> <li>2. Using social networks and media to increase the scientific knowledge of the village people about this disease</li> <li>3. Create an information campaign to inform people correctly and on time about the disease and also prevent the spread of false news.</li> <li>4. Using mass media to inform people of scientific information about the disease</li> </ol>	<ol style="list-style-type: none"> <li>1. Comprehensive approach to public health</li> <li>2. Everyone's participation to control and contain the disease</li> </ol>
Developed the protocol and guidelines	<ol style="list-style-type: none"> <li>1. Compilation of a six-month national roadmap for pandemic preparedness and response</li> <li>2. Compulsion to use technology</li> <li>3. Providing a more comprehensive assessment to identify and meet the needs of vulnerable families</li> <li>4. Socio-economic and religious measures (including psychological activities for vulnerable groups (elderly - low-income people))</li> <li>5. Forming a working group at the beginning of work consisting of native and local forces to assess the current situation and plan for problems and identify priorities for action</li> <li>6. Setting up a monitoring system for health and laboratory centers</li> </ol>	<ol style="list-style-type: none"> <li>1. Development of public and social capacities</li> <li>2. Supporting disease management in PHC</li> <li>3. Creating fixed protocols and guidelines for defining suspicious cases locally and globally</li> </ol>
Traffic control and restrictions (quarantine policies)	<ol style="list-style-type: none"> <li>1. Separation of areas into three states of high, at, and low risk and applying special restrictions for each</li> <li>2. Controlling dangerous people and areas using GPS and creating an application to show people dealing with dangerous people and places.</li> <li>3. General quarantine and movement control for suspicious people and patients</li> <li>4. Closing schools selectively</li> <li>5. Tracking patients and those who have been abroad or had contact with another patient (managing relationships between people)</li> <li>6. Control of entrances (land, air and water)</li> <li>7. Mandatory restriction of 14 days at home for travelers returning from high-risk areas</li> </ol>	<ol style="list-style-type: none"> <li>1. Overall reform of the quarantine system and elimination of overcrowded and poorly ventilated places</li> </ol>
Inter- and intra-departmental cooperation	<ol style="list-style-type: none"> <li>1. Creation of C-PIP to establish coordination between all stakeholders</li> <li>2. Formation of cluster organizations to strengthen cooperation</li> <li>3. Establishing cooperation governance between the central and local governments for infection prevention and control</li> <li>4. Management of emergency patients in the private sector and strong and effective supervision of this sector</li> <li>5. Mobilization of public and private resources related to logistical and social support for people in affected areas</li> <li>6. Establish existing partnerships between the municipality, regional authorities and the local community</li> </ol>	<ol style="list-style-type: none"> <li>1. Using comprehensive services with inter-departmental cooperation</li> <li>2. Decentralization in decision-making for rapid adaptation to local health and social needs</li> <li>3. Coordination and appropriate allocation of roles between public and private organizations</li> </ol>
Financing	<ol style="list-style-type: none"> <li>1. Creation of C-PIP to establish coordination between all stakeholders</li> <li>2. Formation of cluster organizations to strengthen cooperation</li> <li>3. Establishing cooperation governance between the central and local governments for infection prevention and control</li> <li>4. Management of emergency patients in the private sector and strong and effective supervision of this sector</li> <li>5. Mobilization of public and private resources related to logistical and social support for people in affected areas</li> <li>4. Establish existing partnerships between the municipality, regional authorities and the local community</li> </ol>	<ol style="list-style-type: none"> <li>1. Using comprehensive services with inter-departmental cooperation</li> <li>2. Decentralization in decision-making for rapid adaptation to local health and social needs</li> <li>3. Coordination and appropriate allocation of roles between public and private organizations</li> </ol>
Infrastructure development and accessibility improvement	<ol style="list-style-type: none"> <li>1. Equal distribution of primary health care providers</li> <li>2. Employing local organizations</li> <li>3. Establishment of rural water and sewage technicians in the National Drinking Water and National Health Department</li> <li>4. Equitable distribution of resources for rural and deprived areas</li> </ol>	<ol style="list-style-type: none"> <li>1. Improve quality and access to public health services to ensure early diagnosis and complete treatment</li> <li>2. Decentralization improved access to local resources</li> </ol>
research	<ol style="list-style-type: none"> <li>1. Financial and spiritual support for research (especially during disease outbreaks)</li> <li>2. Prioritizing research</li> </ol>	Evidence-based planning and action

Remote services (digital technologies)	<ol style="list-style-type: none"> <li>Distance therapeutic educational activities such as helping to quit smoking and using medication sessions</li> <li>Implementation of non-attendance medical consultation system by phone or electronically</li> <li>Employees communicate with each other through email and virtual chats to reduce the risk of virus transmission</li> </ol>	<ol style="list-style-type: none"> <li>Ensuring the safety of caregivers and patients</li> <li>Monitor the patient's condition</li> <li>Continuity of care</li> <li>Reducing the burden of referrals and increasing home quarantine</li> </ol>
Integration of PHC services and specialized care	<ol style="list-style-type: none"> <li>Career development of family doctors</li> <li>Career development of nurses working in the PHC sector to take over part of the treatment process for chronic patients</li> <li>Transfer of duties: The follow-up of covid patients was assigned by doctors to nurses. Communication with patients that used to be done by health professionals is now done by administrative staff.</li> <li>Increasing facilities based on the integration of consulting and laboratory centers</li> </ol>	<ol style="list-style-type: none"> <li>Greater population coverage</li> <li>Reduction of workload</li> <li>Providing service package</li> </ol>
Team service delivery	<ol style="list-style-type: none"> <li>Joint planning of appointments</li> <li>Creating a doctor referral system</li> <li>Shared software</li> <li>Providing sports and health programs to patients with chronic diseases in cooperation with sports coaches</li> </ol>	<ol style="list-style-type: none"> <li>Greater population coverage</li> <li>Reduction of workload</li> <li>Providing service package</li> </ol>
Strengthening family doctors	<ol style="list-style-type: none"> <li>Training of doctors</li> <li>Membership in multidisciplinary teams</li> <li>Improving clinical knowledge in the field of evidence-based medicine</li> </ol>	<ol style="list-style-type: none"> <li>The desire of more people to visit and receive services</li> <li>Identifying factors affecting the health of households</li> </ol>
Increasing diagnosis and screening	<ol style="list-style-type: none"> <li>Formation of mobile corona diagnosis teams to increase disease detection</li> <li>Testing of all suspicious cases (travel or history of contact with the patient)</li> <li>Free PCR and antibody test</li> </ol>	<ol style="list-style-type: none"> <li>Avoiding rework</li> <li>Better follow-up of patients</li> </ol>
Public information	<ol style="list-style-type: none"> <li>Creating specialized groups to create guidelines and inform people correctly</li> <li>Forming a specific group and committee whose duties include informing people about the dangers of influenza and...</li> </ol>	<ol style="list-style-type: none"> <li>Increasing people's knowledge to create two-way communication and participation in their recovery process</li> </ol>
the quality of service	<ol style="list-style-type: none"> <li>Hiring skilled and educated health care providers</li> <li>Limiting access to health services based on at-risk populations due to limited services</li> </ol>	<ol style="list-style-type: none"> <li>Increasing continuity and continuity in providing services</li> <li>Consent of recipient and provider</li> </ol>
Reducing the burden of referrals	<ol style="list-style-type: none"> <li>Creating the possibility of telephone and video medical consultations and examination at home to prevent patients from going to medical centers</li> <li>Making it possible to receive prescriptions by phone and electronically for patients with chronic diseases without the need to visit a doctor in person</li> </ol>	<ol style="list-style-type: none"> <li>Service demand control</li> <li>Reducing risk for service providers</li> </ol>
Providing the necessary equipment and facilities	<ol style="list-style-type: none"> <li>Provision of PPE for medical staff and people</li> <li>Allocation of at least one test room in health centers</li> <li>Vaccine supply</li> <li>Storage of PPE and strategic drugs</li> </ol>	<ol style="list-style-type: none"> <li>The durability of the workforce and preventing them from getting sick</li> </ol>
Prevent the spread of disease in the community	<ol style="list-style-type: none"> <li>Using disposable syringes to prevent the transmission of infectious diseases</li> <li>Active surveillance of PHC through mobile teams in high-risk areas such as international airports</li> <li>Monitoring the population under quarantine</li> <li>Vaccination for the majority of people in the society</li> <li>Quarantine of confirmed patients and suspicious people</li> <li>Controlling the load of emergency visits and preventing healthy people from getting sick in contact with sick people in waiting rooms</li> </ol>	
Community participation	<ol style="list-style-type: none"> <li>Encouraging people to report violations of others, especially people returning from high-risk areas in not following the rules of non-gathering</li> <li>Forming groups from among the people (student groups, women's groups, etc.) to encourage others to wear masks on public roads</li> <li>Proposing and implementing programs related to adequate access to health and health promotion with the cooperation of the community</li> <li>Coordinate with civil society to provide supplies and transmit health education messages</li> </ol>	<ol style="list-style-type: none"> <li>Identification of needs-based community health priorities</li> <li>Creating a sense of responsibility among people</li> </ol>

Community empowerment	<ol style="list-style-type: none"> <li>1. Empowering women and removing cultural barriers to access proper health</li> <li>2. Inform the society in official and unofficial media</li> <li>3. Training and holding training courses for the target group</li> <li>4. Increasing awareness in schools, markets and...</li> </ol>	<ol style="list-style-type: none"> <li>1. Improving patients' health literacy and strengthening their role in self-management and self-care</li> <li>2. Changing life routines, health habits and...</li> </ol>
Building trust in society	<ol style="list-style-type: none"> <li>1. Providing personal protective equipment for people</li> <li>2. Providing more human and financial resources during the crisis</li> <li>1. Effective, clear and timed communication strategy to inform the community</li> </ol>	<ol style="list-style-type: none"> <li>1. Reducing uncertainty and social anxiety</li> </ol>

### *Policies that have been applied at the level of the government (politicians).*

*Information:* Governments can prevent the spread of false information about the pandemic by using mass media, social networks, information campaigns, etc. They should cooperate to deal with the pandemic [8, 11, 17-20].

#### *Development of protocols and guidelines:*

During pandemics, it is necessary to form different working groups. Governments can assign working groups to assess the existing situation and the required equipment by using local forces. It is also recommended to develop a national road map to deal with epidemics and pandemics before the occurrence of pandemics [3, 8, 19, 21].

*Applying traffic restrictions:* Quarantine is always one of the best ways to break the chain of transmission of infectious diseases, especially in situations where there is still no proper treatment for the disease. Governments should prevent the entry of carriers into the country by controlling borders and reduce the risk of disease transmission to other people by quarantining high-risk people inside the country [2, 3, 8, 11, 18, 19, 22, 23].

#### *Inter- and intra-departmental*

*cooperation:* Pandemics are generally associated with an increase in the need for facilities and equipment, so the capacity of all departments, including the private sector, should be used to manage the wave of patients [22-25].

*Financing:* Pandemics are inherently associated with a sharp increase in the costs of the health system, for this reason, to compensate for these costs, it is necessary to increase the budget for health and treatment activities [4, 10, 24-27].

#### *Development of infrastructures and*

*improvement of access:* in any situation, not only during pandemics, the fair distribution of resources, especially in deprived areas, is necessary in order to deal with critical conditions [3, 8, 19-23, 29].

*Research based on PHC:* During pandemics, researches that are conducted around the disease should be

supported materially and spiritually, because their results can help to control and improve the condition of the disease [8,19, 20, 28].

### *Policies that have been applied at the level of primary health systems*

#### *Using technology to provide remote*

*service:* This is one of the most important policies to deal with the pandemic. You should use the platform of virtual space to communicate without the risk of disease transmission. For example, medical consultation services should be done offline as much as possible and the meetings between the treatment staff or other employees should be offline to eliminate the risk of disease transmission [2, 4, 8, 11, 18,19,30, 31].

#### *Integration of PHC services and*

*specialized care:* in pandemic conditions, the increased workload can be distributed among the treatment staff with the career development of doctors and nurses, which also prevents their burnout [10, 21, 32].

*Providing team services:* Creating a referral system can help to improve the provision of services to patients [17, 18, 28].

*Strengthening of family doctors:* training up-to-date information about the disease as well as their membership in multidisciplinary treatment teams will make family doctors perform better in order to play a more effective role in dealing with the pandemic [4, 10, 19, 20].

*Increasing disease detection:* In pandemic conditions, disease detection should be increased to its maximum capacity to break the chain of disease transmission within the community, and for this, all suspected cases of the disease should be tested, although these people should not pay for this issue [22, 32, 33, 34].

*Public information:* It is necessary to educate people and make them aware in order to get their cooperation to control the disease [2, 3, 8, 18].

*Reducing the burden of referrals:* It is possible to reduce the burden of referrals to medical centers by providing the possibility of receiving electronic prescriptions for chronic patients [2,7, 25,32,33].

*Supply of equipment:* Allocation of special rooms in each health center as a test room, as well as supply of equipment needed by the medical staff and people, such as personal protective equipment (PPEs) and the purchase or production of vaccines as soon as possible from the necessary interventions to deal with the pandemic. are [19, 29,35-39].

*Preventing the spread of disease in the society:* It is possible to prevent further spread of the disease by actively monitoring high-risk areas such as international airports and also preventing gatherings in high-risk areas such as hospital emergency rooms. Using disposable syringes is also an effective way to prevent the spread of blood-borne diseases such as AIDS [3, 8, 16, 18, 28].

### *Policies that have been applied at the community level*

*Community participation:* The more the primary health care system succeeds in moving towards being people-centered, the better it can perform in critical situations. During pandemics, different people's groups can be organized to accept different roles, including encouraging others to follow protocols and conveying the correct educational messages to the people. People can also be encouraged to report various violations, including non-compliance with protocols [26, 34, 38].

*Community Empowerment:* People should be able to have an active and effective presence in dealing with the pandemic with all possible capacity. For example, holding training classes for special target groups to empower them can be considered as part of this category [9, 10, 20].

*Building trust in society:* Transparency in all fields is one of the most important aspects of building trust in people, and naturally, a society that feels trust in its health and treatment system cooperates with policies and decisions. will improve [33, 40].

In the face of different pandemics, governments presented strategies and policies that fit the conditions and status of their country. One of the most important measures has been the policy of quarantine and disease detection. In this context, the country of Oman has activated its operational teams to control the disease of Covid-19 in land, air and water entrances [22, 26] and in Mexico, command teams consisting of medical specialists and

nurses were created for visits [35]. . In Vietnam, social distancing protocols were developed and areas were divided into three states: high, at, and low risk; that special restrictions were considered for each region. Also, in this country, GPS and applications were created to identify and introduce high-risk people and areas [3]. In other studies, closing schools in the first week of the disease outbreak, mandatory 14-day home restriction for travelers returning from high-risk areas, installing stickers on the doors of people suspected of having the disease, reducing travel distance to access healthcare services are important interventions in this field. have been [19, 25, 29].

Policymakers have made intra- and inter-sectoral cooperation one of their priorities. Employing comprehensive services and cooperation with the private sector, deploying rural water and sewage technicians in the National Drinking Water and National Health Department, creating a community pandemic influenza plan to establish coordination between all stakeholders, creating greater coordination and communication between primary health service centers. and medical centers to strengthen primary health care and take advantage of the capacities of the public health and treatment system in PHC, use the existing partnership between the municipality, regional authorities and the local community, form a regional coalition to eliminate cholera, and also share the budget Between rich and poor countries, among the measures given in the studies of different countries, there have been positive results such as collecting physical resources, especially personal protective equipment, sharing information, increasing awareness in schools, markets, etc. [20, 28, 38].

Tomizuka *et al.* have introduced a plan for survival and continuity of service in crises for frontline employees as one of the effective measures of the Japanese government [36]. Other studies also showed that the formation of a crisis management organization to control and contain the spread of Covid-19 and provide information, the formation of a working group at the beginning of work consisting of native and local forces to assess the current situation and plan for problems and identify priorities for action. The formation of specialized groups to create guidelines and prepare the response plan to the disease and inform the people correctly and develop a six-month national road map for preparedness and response to the corona pandemic by the Ministry of Health and the Rwanda Biomedical Center can have effective results in curbing the pandemic [4, 21, 34, 36]. In the current study, developing guidelines for disease management and forming crisis working groups is recognized as one of the duties of policy makers. Therefore, policy makers can initiate a comprehensive response by controlling and restricting traffic by using an effective and efficient quarantine system, informing and compiling educational protocols and guides [3]. Also, the current study and previous studies emphasize the support of policymakers for conducting research based on primary health care (PHC), especially during disease outbreaks, for evidence-based planning and actions [20,35].

This study showed that the provision of remote services and the implementation of technology at the level of primary health care as one of the interventions of PHC staff in pandemic conditions can prevent the spread of the virus and the repetition of the

disease cycle. The results of other studies showed that the implementation of the non-attendance medical consultation system by telephone and electronically, the activation of the electronic medical records system to track cases and the flow of longitudinal information within the network, making it possible to receive prescriptions by telephone and electronically for patients with diseases without the need to see a doctor in person, communication between employees through e-mail and virtual chats is effective to reduce the risk of virus transmission [26]. In France, the continuation of collective preventive activities through video conferencing was adapted [28] and in Oman, the use of technology to provide service was made mandatory [22]. In India, due to the poor infrastructure in primary health care places, "services and telecommunications" were implemented to maintain continuity of care [32].

In this study, the effective role of health service providers in facing pandemics is mentioned. In other studies, changes in the structure and strengthening of frontline employees in crises have been discussed. In these studies, the training of employees in response to new and critical conditions (development of clinical skills) and the training of mobile corona diagnosis teams in PHC centers involved with corona are mentioned in order to increase disease detection [26]. Also, due to the lack of labor, in many countries, providing services as a team and creating a service package became stronger [23]. In Andre *et al.*'s study, the creation of a physician referral system in epidemic conditions led to the strengthening of the family physician [28], which is consistent with the results of Guiniat *et al.*'s report [10]. This issue led to the creation of common software between different providers, membership in multidisciplinary teams, attention to the individual and social needs of patients, improvement of clinical knowledge in the field of medicine based on non-clinical evidence and collaborative decision-making [10]. Also, based on the results of this study and the study of Michel *et al.*, the role of family doctors in providing palliative care and identifying factors affecting the health of families is very important, which requires the formulation of strengthening policies [41].

The results of this study showed that for faster and better control of pandemics, the cooperation of society and the general public can be helpful. In this regard, in the face of Covid-19, the biomedical model of Kazakhstan was changed to a people-centered one [24]. Also, in Zhang and Xiang's study, encouraging people to report violations of others, especially people returning from high-risk areas in not following the rules of non-gathering, forming groups among people (student groups, women's groups, etc.) to encourage others to Wearing masks in public streets and using social networks and media to increase the scientific knowledge of rural people about the disease have been key actions at the community level [26]. Kim's study in Korea has considered insufficient knowledge and wrong judgments about the virus as a weakness of society [23]. Therefore, attracting the cooperation and participation of the society through methods such as using the capacity of virtual spaces and communication programs to spread correct information and by credible figures, increasing the awareness of women and children, encouraging popular campaigns in the field of spreading the culture of

prevention, dealing seriously with people Breaking the law, controlling gatherings, and providing sufficient reliable and safe personal protection products for people are among the measures that the current study has found to be effective in crisis control [28, 11].

The health care system in Iran, despite many advances, faces serious challenges in critical situations such as pandemics, which, taking into account the determinants of health (social, economic, etc.), the current structure of the health care system should be The primary should be modified to have the necessary resilience in the face of pandemics and deal with the crisis [42]. These reforms include the areas of quality improvement, management and leadership, community participation, primary health care effectiveness, human resource development, safety, health care evaluation and accounting, and health information management, which can be based on the successful experiences of the primary health care system. The world is faced with pandemics and the localization of these control and coping strategies should be done, because a policy may be at the level of policymakers in other countries, but it can be implemented at a lower level in our country [43].

## Conclusion

The evidence based on the results of a systematic review of the experiences of primary health care (PHC) systems in this study showed that in order to face and successfully control pandemics, different countries need an integrated disease management system and a comprehensive, coherent and community-based approach in The three areas of policymakers are the primary health care system and the people, each of which needs policies followed by practical, effective, efficient and timely measures to increase resilience and strengthen their primary health care systems. are facing pandemics. Each of the countries of the world, including our country, can give an effective and successful response to pandemics by localizing and adjusting these policies and measures based on their political, economic, social and cultural conditions.

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