



Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.



## Clinical Review Article

# Geriatric Mental Health and COVID-19: An Eye-Opener to the Situation of the Arab Countries in the Middle East and North Africa Region

**Samer El Hayek, M.D. <sup>\*</sup>, Mohamad Ali Cheaito, M.D. <sup>\*</sup>, Marwa Nofal, M.D.,  
Doaa Abdelrahman, M.D., Ali Adra, M.D., Siham Al Shamli, M.D.,  
Mansour AlHarthi, M.D., Nawaf AlNuaimi, M.D., Chaimaa Aroui, M.D.,  
Lynda Bensid, M.D., Alkhansa Mabdi Emberish, M.D., Amine Larnaout, M.D.,  
Ahmed Radwan, M.D., Mohammad Slaib, M.D., M.P.H., J.B.Psych.,  
Hamed Al Sinawi, M.D., F.R.C.Psych.**

## ARTICLE INFO

*Article history:*

Received April, 9 2020

Revised April, 30 2020

Accepted May, 5 2020

*Key Words:*

COVID-19

geriatric psychiatry

Arab

MENA region

## ABSTRACT

*While the detrimental ramifications of the COVID-19 outbreak on the mental wellbeing of the general public continue to unravel, older adults seem to be at high risk. As the geriatric population continues to grow in the Middle East and North Africa (MENA) region, it is essential to explore the influence of this outbreak on geriatric mental health, a topic often neglected. In this review, we depict the status of geriatric psychiatry in the Arab countries of the MENA region, exploring the variations from one nation to another. While some have a null exposure to the field, resources and expertise in other countries range from very limited to extensive. Furthermore, we highlight the measures implemented in the Arab region to address mental health during the COVID-19 outbreak; these tend to be insufficient when targeting the geriatric population. Finally, we provide short- and long-term recommendations to stakeholders that*

From the Department of Psychiatry, American University of Beirut, Beirut, Lebanon; Department of Emergency Medicine, American University of Beirut, Beirut, Lebanon; Helwan Mental Health Hospital, Cairo, Egypt; The Sudanese Medical Specialization Board, Khartoum, Sudan; Department of Psychiatry, Damascus University, Damascus, Syria; Oman Medical Specialty Board, Muscat, Oman; Prince Sultan Military Medical City, Riyadh, Kingdom of Saudi Arabia; Al Ain Hospital, Abu Dhabi, United Arab Emirates; Ibn Rushd Psychiatry University Center, Casablanca, Morocco; University of Algiers, Drid Hocine Hospital specialized in Psychiatry, Department A, Algiers, Algeria; Department of Psychiatry, University of Benghazi, Benghazi, Libya; Razi Hospital, Faculty of medicine of Tunis, Tunis El Manar University, Cite Romana, Tunis, Tunisia; Hamad Medical Corporation, Mental Health Service, Doha, Qatar; National Center for Mental Health, Ministry of Health, Jordan; and the Department of Behavioural Medicine, Sultan Qaboos University, Muscat, Oman. Send correspondence and reprint requests to Samer El Hayek, M.D., Department of Psychiatry, American University of Beirut, Bliss Street, PO Box: 11-0236. Riad El Solh, Beirut 1107 2020, Lebanon; e-mail: [samer.elhayek@gmail.com](mailto:samer.elhayek@gmail.com)

<sup>\*</sup> These authors should be regarded as joint first authors.

© 2020 American Association for Geriatric Psychiatry. Published by Elsevier Inc. All rights reserved.

<https://doi.org/10.1016/j.jagp.2020.05.009>

*aim at enhancing the mental healthcare of older adults in the Arab countries of the MENA region, particularly during this pandemic.* (Am J Geriatr Psychiatry 2020; 28:1058–1069)

## INTRODUCTION

COVID-19 constitutes a new major global health challenge. The socioeconomic and health care impacts of this pandemic are unprecedented, with worldwide economic loss, travel restrictions, closure of business activities, social distancing, isolation and quarantine, fear of shortage of basic needs, and rapid spread of mental health problems.<sup>1–3</sup> The unpredictable nature of COVID-19 and its associated individual, societal, and global repercussions not only threaten one's physical health but also affects their mental health. Data from a cross-sectional study in China revealed that more than half of the surveyed participants experienced moderate-to-severe psychological distress secondary to the outbreak.<sup>4</sup> The distress stems from the constant fear of contracting the virus, contracting it, losing loved ones to the illness, and being socially isolated or quarantined. These factors can precipitate mental illness in those with no previous psychiatric history or exacerbate symptoms in those with a pre-existing mental illness.<sup>5</sup>

One of the core features of COVID-19 is its predilection for infecting older adults and those with chronic underlying health conditions, resulting in higher mortality.<sup>6</sup> Given that older adults generally suffer a greater number and higher severity of chronic diseases as compared to the younger population,<sup>7</sup> one can expect that the COVID-19 outbreak will disproportionately affect the geriatric population.

In this respect, the subspecialty of geriatric psychiatry is uncharted territory. Scarce literature exists about the psychiatry of old age during pandemics. During the severe acute respiratory distress syndrome (SARS) outbreak, which occurred between 2002 and 2004, a mental health toll particularly affected the geriatric population. A case study conducted in Hong Kong in 2003 attributed 22 suicide events to be "SARS-related," with the mean age of attempters being 74.9 years. Disease burden among the elderly with long-term illness contributed as a significant factor for suicide.<sup>8</sup> Another cross-sectional

study, also conducted in Hong Kong, showed an increase in suicide rates in older adults during the year of the outbreak; this was particularly significant in females above the age of 65 years.<sup>9</sup> A lingering elevation in rates of elderly suicide was observed until 2004.<sup>10</sup>

It is essential to recognize how the impact of the COVID-19 outbreak on mental health varies around the world, particularly in low- and middle-income countries.<sup>11</sup> In the Arab countries of the Middle East and North Africa (MENA) region, the percentage of the population over the age of 65 is estimated at 5.1% (of a total population of 449 million).<sup>12</sup> By 2050, the proportion of older adults is predicted to increase to 19%.<sup>13</sup> Health care systems in the region have so far ignored the needs of older adults and tend to heavily rely on family or community-based social support.<sup>14</sup> Few programs in the Arab countries of the MENA region, governmental, community-based, or initiated by private sectors, have tried to meet the needs and overcome the challenges of the geriatric population.<sup>14,15</sup>

Geriatric mental health, on the other hand, is frequently overlooked.<sup>16</sup> This stems from a lack of awareness about the symptoms of mental illness in the elderly and a dismissive belief that affected mental health is a normal part of the aging process.<sup>17</sup> Even though psychiatry of the old age constitutes one of the priority areas for health interventions in the Arab countries of the MENA region,<sup>17</sup> little is known about the state of geriatric mental health during the COVID-19 outbreak in this part of the world.

Therefore, throughout this evolving situation, and as a group of Arab early-career psychiatrists, we provide a state-of-the-art review of the status of geriatric psychiatry in the Arab region during the COVID-19 outbreak. Close to the frontlines of this pandemic and being aware of the needs of this vulnerable population, we describe the status of older adults in this part of the world. We then shed light on the general and targeted mental health interventions implemented during the COVID-19 outbreak. Finally, we derive targeted interventions for implementation in the Arab countries of the MENA region.

---

## METHODS

We invited thirteen early-career psychiatrists from the Arab countries of the MENA region to share information related to geriatric psychiatry and COVID-19 in their respective nations. We elected for early-career rather than mid-career or late-career psychiatrists to provide a new perspective about the situation of geriatric psychiatry in this part of the world and to add emphasis on the importance of early-careers, the torchbearer of future psychiatry.<sup>18</sup> Each member of the team provided information about the mental health measures taken in their country during the COVID-19 outbreak, with a particular focus on interventions directed towards the geriatric population. This was done using a semi-structured guide, presented in [Supplementary Table 1](#). All members of the team carried out their search using the governmental ministry of health websites of their respective nations, along with local or international electronic newspapers and magazines discussing the topic of geriatric psychiatry during the COVID-19 outbreak.

To complement this search, we also checked different search engines (PubMed, Medline, and Scopus), from inception until April 5, 2020, for references about the status of the COVID-19 outbreak and geriatric psychiatry in the MENA region. Terms used in the search included "COVID-19," "coronavirus," "SARS-COV-2," "geriatrics," "elderly," "aging," "mental health," "psychological distress," "coping style," "social support," and "psychiatric disorders." We reviewed relevant references for the articles of interest and only included those published in English.

Discussion between the authors of the manuscript occurred via email. Ethical permission was not sought as there was no direct involvement of human participants and data used were already available in the public domain.

---

## RESULTS

### **Status of Geriatric Mental Health in the Arab Countries of the MENA Region**

Few studies assessed the mental health status of the geriatric population in the Arab countries of the MENA region. These studies are mainly clustered in Egypt, Lebanon, Kingdom of Saudi Arabia (KSA), and

the United Arab Emirates (UAE), and mostly tackle old age depression. Overall, research in this part of the world indicates a high prevalence of depression among the geriatric population, with prevalence numbers varying between 10% and 46%.<sup>19–26</sup> Depressive symptoms are also common within sub-populations of older adults, reaching a prevalence of 46% in those with Parkinson's disease<sup>27</sup> and 57% to 86% in dementia of Alzheimer's type and vascular dementia, respectively.<sup>28</sup> Most studies identified living alone,<sup>22–25</sup> living in a nursing home,<sup>25,29,30</sup> illiteracy,<sup>25,29,30</sup> and having chronic diseases<sup>19,24,25</sup> to be associated with geriatric depression.

This comes on top of a general lack of services directed towards geriatric mental health in the Arab region. Looking at the status of different countries, one can cluster them into three main categories. Some nations have limited exposure to geriatric psychiatry, such as Algeria, Libya, Sudan, and Syria. For instance, Sudan has no geriatricians or geriatric mental health clinics; most of the limited psychiatric services are restricted to the capital and major cities. Similarly, in Syria, geriatric medicine remains a foreign discipline taught along with the endocrinology and nutritional disorders module of medical schools. Other nations have some resources for geriatric medicine, but minimally available expertise. These include Jordan, Lebanon, Morocco, Oman, KSA, and Tunisia. Jordan has less than ten geriatricians whereas Lebanon encompasses about twenty specialists, of whom two are geriatric psychiatrists. In addition, the Alzheimer's Association Lebanon constitutes one of the oldest and most active Alzheimer's associations in the region. In Morocco, geriatrics became a field of study for medical school graduates a few years ago and geriatric psychiatry is currently part of the curriculum of trainees. Oman is starting to witness a rise in the field, with newly established geriatric psychiatry clinics in two tertiary hospitals, run by five geriatric psychiatrists. The Oman Al Zahimer Association for dementia has also been providing support for patients with dementia and their caregivers throughout the country. In comparison, while there are no clinics dedicated to psychogeriatrics in Tunisia, except for some specialized units in dementia, a university diploma and a research unit exist at the faculty of medicine of Monastir in the center of the country. Geriatric psychiatry services also remain limited in the UAE. Lastly, very few nations have developed extensive resources and services allocated to geriatric

psychiatry. In Egypt, most of the psychiatry departments already have or are currently establishing their psychogeriatric section with outpatient clinics and memory clinics. Geriatric psychiatry is currently one of the requirements in many of those training programs. The Egyptian Alzheimer Society has been leading the field and spreading awareness for years now. Alternatively, geriatric psychiatric services in Qatar are provided through different models, including outpatient clinics, specialized memory clinics, consultations on the medical floors of general hospitals, and via residential and home visits for people who cannot reach out. The service has been growing significantly in recent years, particularly following the launching of Qatar National Dementia Plan 2018–2022 and plans for “Healthy Ageing” in the country.<sup>31,32</sup> Table 1 summarizes the characteristics of the geriatric population and geriatric mental health training in each of the represented thirteen countries.<sup>33–41</sup>

### Status of Geriatric Mental Health During the COVID-19 Outbreak in the Arab Countries of the MENA Region

Since the start of the COVID-19 outbreak, the Arab countries of the MENA region have implemented several measures to improve mental health outcomes during this pandemic (Table 2<sup>42–61</sup>). These include follow-up on patients via videoconference or phone calls. Most generated educational material in the form of videos, posters, or pamphlets released on social media outlets. Many nations also introduced hotline numbers to provide counseling and support. These measures, mostly directed towards the general population, have failed to cater to the needs of the geriatric population. Targeted interventions have been initiated only in countries with good resources and expertise in the field. In Egypt, the General Secretariat for Mental Health and Addiction Treatment launched social media campaigns tackling stress during the outbreak, with a focus on vulnerable populations, including the older adults. In KSA, alternatively, the National Center for Mental Health Promotion has been providing daily support for older adults and their caregivers, via communication at a hotline number and targeted learning material released on social media outlets. In Qatar, geriatric mental health services have shifted to telepsychiatry. Lastly, Jordan and Oman have initiated a home delivery system of psychotropics for the geriatric

TABLE 1. Table Summarizing the Characteristics of the Geriatric Population and Geriatric Mental Health Training in Each of the Represented Arab Countries of the MENA Region

Country	Population (Million)	Percent of the Geriatric Population >65-Year-Old (%)	World Bank Classification	Organizations for Geriatrics	Mental Health Act	Organizations for Geriatric Mental Health	Geriatric Psychiatry Fellowship Training
Algeria	43,900,000	~5.8	High income	Yes: Governmental and nongovernmental	Yes	Yes	No
Egypt	101,865,538	~6.7	Low middle income	Yes: Governmental and nongovernmental	Yes	Yes	No
Jordan	10,554,000	~3.7	Upper middle income	Yes: Nongovernmental	No	No	No
Lebanon	6,800,000	~10	Upper middle income	Yes: Governmental and nongovernmental	No	Yes	No
Libya	6,849,446	~4	Upper middle income	Yes: Governmental and nongovernmental	Yes	No	No
Morocco	36,000,000	~7	Lower middle income	Yes: Governmental and nongovernmental	Yes	No	No
Oman	4,829,000	~2.6	High income	Yes: Governmental	No	No	No
Qatar	2,795,484	~1.2	High income	Yes: Governmental	Yes	Yes	Yes
KSA	32,612,641	~3.2	High income	Yes: Governmental and nongovernmental	Yes	Yes	No
Sudan	43,600,000	~3	Lower middle income	Yes: Governmental and nongovernmental	No	No	No
Syria	16,906,000	~4.6	Low income	Yes: Governmental and nongovernmental	No	No	No
Tunisia	10,982,476	~11.4	Lower middle income	Yes: Governmental and nongovernmental	No	No	No
UAE	9,890,000	~1.1	High income	Yes: Governmental and nongovernmental	Yes	No	No

**TABLE 2. Table Summarizing the Characteristics of the General Mental Health Services Generated During COVID-19 in Each of the Represented Arab Countries of the MENA Region**

Country	Date of the First Documented Case of COVID-19	Communications About COVID-19 and Mental Health	Innovative Methods Adopted for the Dissemination of Information About COVID-19 and Mental Health	Implementation of Telepsychiatry for Mental Health Support	Taskforce for Mental Health During COVID-19
Algeria	February 25, 2020	Yes	<ul style="list-style-type: none"> <li>Establishing a call center by mental health professionals for the general public and healthcare workers exposed to COVID-19.</li> <li>Organizing live-streamed videos that promote mental well-being via social media outlets (organized by psychiatrists and health magazines).</li> </ul>	Yes	Yes
Egypt	February 14, 2020	Yes	<ul style="list-style-type: none"> <li>Establishing a hotline for mental health consultations by the General Secretariat of the Mental Health and Addiction Treatment.</li> <li>Organizing awareness campaigns about mental health during pandemics (by governmental and non-governmental organizations).</li> <li>Delivering online webinars targeting the mental health specialists and the physicians working at quarantine sites.</li> </ul>	Yes	Yes
Jordan	March 2, 2020	Yes	<ul style="list-style-type: none"> <li>Disseminating educational material about mental health during COVID-19 (pamphlets, videos, etc.) targeting both healthcare workers and the general public via social media outlets (by the Jordanian Medical Association and several non-governmental organizations).</li> <li>Providing weekly sessions for psychological support targeting the nursing staff at the primary hospital treating COVID-19 (by the Ministry of Health).</li> <li>Arranging video calls and phone calls to support and evaluate the mental health of patients with COVID-19 (by the Ministry of Health).</li> </ul>	Yes	Yes
Lebanon	February 21, 2020	Yes	<ul style="list-style-type: none"> <li>Disseminating pamphlets about mental health targeting the general public, healthcare workers, parents, and children via social media outlets. These tackle the general mental health, anxiety, and burnout during COVID-19 (by the Ministry of Health, the Lebanese Psychiatric Society, and multiple non-governmental organizations).</li> <li>Delivering online webinars targeting mental health during the pandemic.</li> </ul>	Yes	Yes
Libya	March 24, 2020	No	<ul style="list-style-type: none"> <li>Delivering mental health services via emergency hotlines. This is, however, limited to a few institutions.</li> </ul>	Yes	No
Morocco	March 2, 2020	Yes	<ul style="list-style-type: none"> <li>Disseminating pamphlets about mental health, targeting the general public via social media outlets. These tackle the general mental health, anxiety, as well as distress from isolation and quarantine during COVID-19.</li> <li>Delivering online webinars targeting mental health during the pandemic (under the supervision of the Ministry of Health).</li> </ul>	Yes	Yes

(continued on next page)

TABLE 2. (continued)

Country	Date of the First Documented Case of COVID-19	Communications About COVID-19 and Mental Health	Innovative Methods Adopted for the Dissemination of Information About COVID-19 and Mental Health	Implementation of Telepsychiatry for Mental Health Support	Taskforce for Mental Health During COVID-19
Oman	February 24, 2020	Yes	<ul style="list-style-type: none"> <li>Organizing live-streamed videos that promote mental well-being via social media outlets (held by private practice psychiatrists and psychologists).</li> <li>Establishing an anonymous hotline for the psychological support of healthcare workers in university hospitals.</li> <li>Establishing a hotline that provides information about the virus and its clinical manifestations.</li> <li>Disseminating educational material (pamphlets and awareness cards) targeting the general public of all age groups via social media outlets. These tackle anxiety, depression, obsessive-compulsive disorder, sleep disturbances, and burnout during COVID-19.</li> <li>Sharing videos that provide general information about COVID-19, self-protection strategies, and mental well-being strategies (by doctors, nurses, and psychologists).</li> </ul>	Yes	Yes
Qatar	February 27, 2020	Yes	<ul style="list-style-type: none"> <li>Disseminating educational material via social media outlets.</li> <li>Sharing information about COVID-19 via mass text messages.</li> </ul>	Yes	Yes
KSA	March 2, 2020	Yes	<ul style="list-style-type: none"> <li>Disseminating educational material targeting the general public via social media outlets, TV advertisements, and radio. These provide general information and statistics about COVID-19 as well as self-protection strategies.</li> </ul>	Yes	Yes
Sudan	March 13, 2020	Yes	<ul style="list-style-type: none"> <li>Disseminating educational material that raises awareness and educates the general public about mental health during COVID-19 via social media outlets, TV, and radio (by mental health professionals).</li> <li>Providing mental health services, under the supervision of the Ministry of Health, by a group of organizations working in the field of mental health.</li> </ul>	Yes	No
Syria	March 23, 2020	Yes	<ul style="list-style-type: none"> <li>Disseminating educational material via social media outlets. These tackle the general mental health during the COVID-19 pandemic, the effects of spreading rumors on the psychological wellbeing, the relation between stress and outbreaks, and tips on mental well-being during quarantine (by the "Syrian Researchers" group and a private practice consultant in psychiatry).</li> </ul>	No	No
Tunisia	March 2, 2020	Yes	<ul style="list-style-type: none"> <li>Disseminating educational material (pamphlets and awareness videos) via social media outlets (by early-career psychiatrists and the Ministry of Health).</li> <li>Sharing information about COVID-19 via mass text messages.</li> </ul>	Yes	Yes

(continued on next page)

TABLE 2. (continued)

Country	Date of the First Documented Case of COVID-19	Communications About COVID-19 and Mental Health	Innovative Methods Adopted for the Dissemination of Information About COVID-19 and Mental Health	Implementation of Telepsychiatry for Mental Health Support	Taskforce for Mental Health During COVID-19
UAE	January 1, 2020	Yes	<ul style="list-style-type: none"> <li>Disseminating educational material (pamphlets and brochures) about mental health in person and via social media outlets. These tackle the anxiety and panic reactions that are expected to arise during the COVID-19 pandemic.</li> <li>Delivering online webinars targeting mental health during the pandemic, sponsored by the Abu Dhabi Health Services Company.</li> <li>Arranging video conference calls to provide mental health support by a dedicated team of psychologists. These are available 24/7 (UAE's VPS Healthcare Organization has joined hands with a Psycho-social rehabilitation center based in India to make this possible).</li> </ul>	Yes	Yes

population. Otherwise, almost all nations did not develop a taskforce targeting geriatric mental health during the COVID-19 outbreak. Table 3 summarizes the geriatric non-mental and mental health services generated during the pandemic in each of the thirteen represented Arab countries.<sup>43,46–50,53–65</sup>

## DISCUSSION

In this part of the world, geriatrics and geriatric psychiatry remain a novel and, at times, an exotic field with minimal exposure or resources. It is a relatively new domain for graduates from medical schools in the Arab region. It lacks the glamour of other specialties, and its limited training opportunities make it unappealing.

The needs of this vulnerable population should be taken into consideration, particularly during the COVID-19 situation. In the Arab countries of the MENA region, changing family dynamics secondary to labor opportunities have caused a shift in family structures, with grandparents more commonly taking care of grandchildren, while parents work abroad. Should grandparents become infected or succumb to the illness, the implications on their extended families will be profound.<sup>11</sup> Second, self-isolation during the COVID-19 outbreak can severely affect older adults, whose only social contact is out-of-the home, such as at community centers and places of worship. Also, increasing numbers of the elderly in the low- and middle-income countries are being cared for in nursing homes, which often are unregulated and have limited services.<sup>66</sup> Those who attend nursing homes and lost face-to-face contact with their family members, those who do not have spouses, family, or friends, and those who rely on the support of voluntary services or social care, are all equally affected.<sup>67,68</sup> Since many healthcare systems of the MENA region face severe limitations and are unlikely able to provide the needed care for all COVID-19 patients, a disproportionate number of those are expected to be older. Further marginalization of the geriatric population would ensue.<sup>11</sup> Subsequently, self-isolation among the elderly would become associated with considerable morbidity and mortality secondary to cardiovascular and neurocognitive complications<sup>69</sup> and mental health problems.<sup>69,70</sup>

During the COVID-19 outbreak, five organizations in China, including the Chinese Society of Geriatric



**TABLE 3. Table Summarizing the Characteristics of the Geriatric Non-Mental and Mental Health Services Generated During COVID-19 in Each of the Represented Arab Countries of the MENA Region**

Country	Non-Psychiatric Interventions for Elderly Support During COVID-19	Psychiatric Interventions for Elderly Support During COVID-19	Taskforce for Geriatric Mental Health During COVID-19
Algeria	<ul style="list-style-type: none"> <li>Educational material via social media outlets</li> </ul>	None	No
Egypt	<ul style="list-style-type: none"> <li>Educational material via social media outlets</li> <li>Online consultations by the Geriatric Department at Ain Shams university that encourage the elderly to stay home</li> <li>Special hours for shopping in supermarkets assigned for elderly</li> </ul>	<ul style="list-style-type: none"> <li>Educational videos about the mental health of vulnerable populations, including the geriatric population provided by the general secretariat of the mental health and addiction treatment</li> </ul>	Yes
Jordan	<ul style="list-style-type: none"> <li>Home delivery of medications for chronic illnesses by the Jordan Medical Association</li> <li>Securing the daily needs of the elderly during lockdown (via youth organizations)</li> </ul>	<ul style="list-style-type: none"> <li>Home delivery of medications for the elderly with psychiatric disorders by the Jordan Medical Association initiative</li> </ul>	No
Lebanon	<ul style="list-style-type: none"> <li>Educational material via social media outlets</li> <li>Dedicating specific hours of the day for the geriatric population at supermarkets, pharmacies, and commercial shops</li> </ul>	<ul style="list-style-type: none"> <li>Provision of weekly online support groups and webinars by the Alzheimer's Association Lebanon for caregivers of patients with dementia</li> <li>Provision of a hotline handled by a geriatric nurse at the Alzheimer's Associated Lebanon for caregivers of patients with dementia</li> </ul>	No
Libya	None	None	No
Morocco	<ul style="list-style-type: none"> <li>Educational material via social media outlets</li> <li>Securing the daily needs of the elderly during lockdown (via individual and neighborhood actions)</li> </ul>	None	No
Oman	<ul style="list-style-type: none"> <li>Educational material via social media outlets</li> <li>Home delivery of medications for chronic illnesses (by community nurses and volunteers)</li> <li>Securing the daily needs of the elderly during lockdown (via youth organizations)</li> <li>Encouragement of the elderly to stay home by primary health care centers</li> </ul>	<ul style="list-style-type: none"> <li>Home delivery of medications for the elderly with psychiatric disorders</li> <li>Video calls for psychological assessment and possible intervention by private psychiatry clinics</li> <li>Video calls for the psychological support of the general public, including the geriatric population, by the Oman Psychiatrist Association</li> </ul>	No
Qatar	<ul style="list-style-type: none"> <li>Special exemptions for the geriatric population from going to work</li> <li>Dedicating lines for the geriatric population at supermarkets, pharmacies, and commercial shops</li> <li>Assigning stipends for grocery shopping for the geriatric population</li> </ul>	<ul style="list-style-type: none"> <li>Dedicating hotline numbers, staffed by mental health professionals, to address mental health concerns of the public (including the geriatric population) during the COVID-19 pandemic. The phone lines are staffed seven days a week from 8 a.m. to 8 p.m. and provided by the Mental Health Service</li> </ul>	Yes
KSA	<ul style="list-style-type: none"> <li>Educational material via social media outlets</li> <li>Home delivery of medications and visiting patients at home (via community service teams)</li> </ul>	<ul style="list-style-type: none"> <li>Telepsychiatry consultation and support clinics for the elderly at hospitals</li> <li>Education, support, and consultations for the geriatric population by the National Center for Mental Health Promotion (via a hotline number and social media outlets)</li> </ul>	No
Sudan	<ul style="list-style-type: none"> <li>Educational material via social media outlets</li> </ul>	None	No
Syria	<ul style="list-style-type: none"> <li>Educational material via social media outlets</li> </ul>	None	No
Tunisia	<ul style="list-style-type: none"> <li>Providing financial aid for the elderly, especially to those in need</li> <li>Securing the daily needs of the elderly during lockdown (via some associations)</li> <li>Facilitating banking and postal operations (via phone application or website)</li> </ul>	None	No
UAE	<ul style="list-style-type: none"> <li>Educational material via social media outlets</li> </ul>	None	No

**TABLE 4. Comprehensive Short- and Long- Term List of Recommendations to Improve the Status of Geriatric Mental Health in the Arab Countries of the MENA Region, Particularly During the COVID-19 Outbreak**

<b>Short-Term Recommendations</b>	
Raising awareness	<ul style="list-style-type: none"> <li>- About the importance of mental health in the geriatric population, counteracting the erroneous perception that mental illness is an expected outcome of aging.</li> <li>- About the available mental health services provided to the geriatric population.</li> <li>- Against stigmatizing media coverage that marginalizes the geriatric population as the “sacrifice age group” during the COVID-19 outbreak.</li> <li>- About the importance of social distancing between family members and older adults, yet maintaining contact via other tools (phone calls, internet, etc.).</li> </ul>
Providing and improving mental health services	<ul style="list-style-type: none"> <li>- Via training mental health teams and primary care clinicians in providing essential mental health care for older adults.</li> <li>- Via teaching targeted psychological first aid to nonspecialized clinicians.</li> <li>- Via offering individual and group counseling to older adults in need.</li> <li>- Via catering for specific days dedicated to older adult visits and follow-ups at geriatric clinics in the health care centers and hospitals.</li> <li>- Via using telepsychiatry to assess and treat geriatric mental health problems during isolation. At homes or nursing sites where telepsychiatry is not affordable, service teams could provide support and behavioral management through telephone hotlines.</li> <li>- Via creating mobile crisis teams and liaison services to reach out to those in rural areas.</li> </ul>
Implementing measures	<ul style="list-style-type: none"> <li>- Adequate documentation and appropriate use of mental health assessment tools to allow better assessment of symptoms, treatment interventions, and their efficacy.</li> <li>- Collaborative care between health care providers (geriatricians, geriatric psychiatrists, neurologists, primary health care physicians, psychologists, nutritionists, and social workers), patients, families, caregivers, and nursing home administrators to provide the best outcomes for the geriatric population.</li> <li>- Close follow-up on the status of governmental and non-governmental nursing homes to maintain an adequate quality of care and hygienic measures.</li> </ul>
<b>Long-Term Recommendations</b>	
<ul style="list-style-type: none"> <li>- Creating or expanding geriatric medicine training positions.</li> <li>- Establishing appropriate and adequate exposure to the geriatric population as part of a mandatory rotation in all psychiatry training programs.</li> <li>- Providing training for clinicians in primary care in the mental health of older adults.</li> <li>- Recruiting more specialists in the field, including geriatricians and geriatric psychiatrists.</li> <li>- Establishing daycare facilities and nursing homes for older adults with mental health problems.</li> <li>- Allocating part of the governmental and non-governmental funds towards the needs of the geriatric population.</li> <li>- Decentralizing resources away from large cities and capitals to ensure service availability for all people.</li> <li>- Developing a national policy that protects the geriatric population’s general health and mental health.</li> </ul>	

Psychiatry, promptly released expert recommendations on how to provide mental health support for the geriatric population.<sup>68</sup> Similarly, the international dementia experts and Alzheimer’s Disease International called for urgent support for people living with dementia and their supporters.<sup>71</sup> Besides, the role played by older adults in developing and maintaining strategies for disaster preparedness, response, and recovery has previously shown to be efficacious.<sup>72</sup> In the Arab countries of the MENA region, guidance around this issue remains, however, unaddressed. An age perspective should be included in the development of any national or regional planning for COVID-19, with recommendations targeting the needs of older adults. As an attempt to invite healthcare workers, policymakers, and stakeholders to look further into the needs of this population, we provide a comprehensive list of recommendations (Table 4) that aim to enhance the general status of geriatric mental health in the Arab region, and particularly

during the COVID-19 outbreak. In the short-term, the focus should be on raising awareness about the importance of mental health in the geriatric population and providing appropriate resources for the elderly (whether by giving focused training to primary and mental health physicians or via employing innovative tools such as telepsychiatry and hotlines). Treatment measures should follow a multidisciplinary approach within a collaborative care model. Long-term recommendations should target improving geriatric medical training and allocating funds for the specific needs of older adults.

## CONCLUSION

In earlier epidemics, such as SARS, the impact on the mental health of the geriatric population was found to be detrimental. During the COVID-19

outbreak, vulnerable populations, particularly older adults, remain at high risk for the development and exacerbation of mental health problems. This is of high concern in the Arab countries of the MENA region, where insufficient attention has been so far paid to the geriatric population. Mental health professionals, medical practitioners, stakeholders, health policymakers, and governmental and non-governmental organizations should collaborate to develop an effective task force that strengthens the geriatric mental health response to the COVID-19 pandemic at both national and regional levels.

### AUTHOR CONTRIBUTIONS

SEH conceptualized the study. SEH and MAC wrote the manuscript and interpreted the information gathered from other authors. MAC did the literature review of the topic. MN and AL helped in recruiting

early-career psychiatrists from the different Arab countries. SEH, MN, DA, AA, SAS, MA, NA, CA, LB, AME, AL, AR, and MS provided relevant information for the review about their respective countries. SEH, MAC, and HAS supervised the work. All authors proofread the manuscript and approved it in its final version.

### DISCLOSURE

*The authors report no conflicts with any product mentioned or concept discussed in this article.*

### SUPPLEMENTARY MATERIALS

Supplementary material associated with this article can be found, in the online version, at <https://doi.org/10.1016/j.jagp.2020.05.009>.

### References

- Ebrahim SH, Ahmed QA, Gozzer E, et al: Covid-19 and community mitigation strategies in a pandemic. *BMJ* 2020; 368:m1066
- McKibbin W, Fernando R: The global macroeconomic impacts of COVID-19: seven scenarios. Brookings. 2020. <https://www.brookings.edu/research/the-global-macroeconomic-impacts-of-covid-19-seven-scenarios/>. Published 2020. Updated 2 March. Accessed 4 April 2020
- Mental health and psychosocial considerations during the COVID-19 outbreak. World Health Organization; 2020. License: CC BY-NC-SA 3.0 IGO.
- Wang C, Pan R, Wan X, et al: Immediate psychological responses and associated factors during the initial stage of the 2019 Coronavirus Disease (COVID-19) epidemic among the general population in China. *Int J Environ Res Public Health* 2020; 17(5)
- Ho CS, Chee CY, Ho RC: Mental health strategies to combat the psychological impact of COVID-19 beyond paranoia and panic. *Ann Acad Med Singapore* 2020; 49(1):1-3
- Belluz J: China's Cases of Covid-19 are Finally Declining. A WHO expert explains why, 2020. *Vox*. <https://www.vox.com/2020/3/2/21161067/coronavirus-covid19-china?fbclid=IwAR0qEmxPzXhRUGiStSye7DC-PRY7gTvywXH8MCZPVqPweZtd-FSggiNDgKY>. Published 2020. Updated 3 March. Accessed 4 April 2020
- Bandaranayake T, Shaw AC: Host resistance and immune aging. *Clin Geriatr Med* 2016; 32(3):415-432
- Yip PS, Cheung YT, Chau PH, et al: The impact of epidemic outbreak: the case of severe acute respiratory syndrome (SARS) and suicide among older adults in Hong Kong. *Crisis* 2010; 31(2):86-92
- Chan SM, Chiu FK, Lam CW, et al: Elderly suicide and the 2003 SARS epidemic in Hong Kong. *Int J Geriatr Psychiatry* 2006; 21(2):113-118
- Cheung YT, Chau PH, Yip PS: A revisit on older adults suicides and Severe Acute Respiratory Syndrome (SARS) epidemic in Hong Kong. *Int J Geriatr Psychiatry* 2008; 23(12):1231-1238
- Lloyd-Sherlock P, Ebrahim S, Geffen L, et al: Bearing the brunt of covid-19: older people in low and middle income countries. *BMJ* 2020; 368:m1052
- TWB: Population ages 65 and above, total - Middle East & North Africa. The World Bank, 2018. <https://data.worldbank.org/indicator/SP.POP.65UP.TO?locations=ZQ>. Published 2018. Accessed 4 April 2020
- UN: Second review and appraisal of the Madrid international plan of action on ageing, 2002. United Nations, Economic and Social Council, 2012
- Hussein S, Ismail M: Ageing and elderly care in the Arab region: policy challenges and opportunities. *Ageing Int* 2017; 42(3):274-289
- Abyad A: Health care services for the elderly in the Middle East. *Middle-East J Bus* 2006. [http://www.mejb.com/mejb\\_iss2\\_vol2/Healthcare%20for%20the%20Elderly.html](http://www.mejb.com/mejb_iss2_vol2/Healthcare%20for%20the%20Elderly.html)
- WHO: Mental Health of Older Adults. World Health Organization, 2017. <https://www.who.int/news-room/fact-sheets/detail/mental-health-of-older-adults>. Published 2017. Accessed 4 April 2020
- Abla Mehio S, Aline S, Jiana T, et al: Ageing and health in the Arab region: challenges, opportunities and the way forward. *Popul Horizons* 2017; 14(2):73-84
- Gnanavel S: Relevance of early career psychiatrist associations. *Indian J Psychol Med* 2015; 37(1):109-109
- El Kady HM, Ibrahim HK: Depression among a group of elders in Alexandria, Egypt. *East Mediterr Health J* 2013; 19(2):167-174
- El-Gilany AH, Elkhawaga GO, Sarraf BB: Depression and its associated factors among elderly: a community-based study in Egypt. *Arch Gerontol Geriatr* 2018; 77:103-107
- Abdo N, Eassa S, Abdalla A: Prevalence of depression among elderly and evaluation of interventional counseling session in Zagazig district -Egypt. *J Am Sci* 2011; 7(6)

22. Ahmed D, El Shair IH, Taher E, et al: Prevalence and predictors of depression and anxiety among the elderly population living in geriatric homes in Cairo, Egypt. *J Egypt Public Health Assoc* 2014; 89(3):127-135
23. Ghubash R, El-Rufaei O, Zoubeidi T, et al: Profile of mental disorders among the elderly United Arab Emirates population: socio-demographic correlates. *Int J Geriatr Psychiat* 2004; 19(4):344-351
24. Al-Qahtani A, Khamis A, Sebiany A, et al: Severity of depression among elderly women attending Holy Quran memorization centers in Saudi Arabia. *J Gerontol Geriatr Res* 2014; 3(4)
25. Mohamed E, Abdelhamed M: Depression among elderly attending geriatric clubs in Assiut City, Egypt. *J Am Sci* 2011; 7:386-391
26. Karam G, Itani L, Fayyad J, Karam A, Mneimneh Z, Karam E: Prevalence, Correlates, and Treatment of Mental Disorders among Lebanese Older Adults: A National Study. *Am J Geriatr Psychiatry* 2016; 24(4):278-286
27. Ghaddar A, Fawaz M, Khazen G, et al: Prevalence of depression in Parkinson's disease in a Lebanese tertiary clinic. *J Clin Exp Neuropsychol* 2016; 38(1):51-58
28. Bowirrat A, Oscar-Berman M, Logroschino G: Association of depression with Alzheimer's disease and vascular dementia in an elderly Arab population of Wadi-Ara, Israel. *Int J Geriatr Psychiatry* 2006; 21(3):246-251
29. Hallit S, Daher MC, Hallit R, et al: Correlates associated with mental health and nutritional status in Lebanese older adults: a cross-sectional study. *Arch Gerontol Geriatr* 2020; 87:103879
30. Hallit S, Hallit R, Daher MC, et al: An arabic version of the geriatric depression scale (30 Items): psychometric properties and some findings in a lebanese elderly sample. *Psychopathology* 2018; 51(3):177-185
31. MPH: Qatar National Dementia Plan 2018-2022 Ministry of Public Health. <https://www.moph.gov.qa/english/strategies/Supporting-Strategies-and-Frameworks/QatarNationalDementiaPlan/Pages/default.aspx>. Published 2018. Accessed 7 April 2020
32. MPH: Healthy Aging. Ministry of Public Health, 2018. <https://www.moph.gov.qa/english/strategies/National-Health-Strategy-2018-2022/Priority-Populations/Pages/Healthy-Aging.aspx>. Published 2018. Accessed 7 April 2020
33. World health statistics 2018: monitoring health for the SDGs, sustainable development goals. Geneva: World Health Organization; 2018. Licence: CC BY-NC-SA 3.0 IGO
34. World bank country and lending groups. World Bank Data, 2020. <https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups>. Published 2020. Accessed 7 April 2020
35. Population et Démographie: Office National des Statistiques. Statistiques Sociales Web site, 2020. <http://www.ons.dz/-Demographie-.html>. Published 2020. Accessed 29 April 2020
36. WHO: Mental health atlas. Section II: WHO member states, 2005
37. Koenig HG, Al Zaben F, Sehlo MG, et al: Current state of psychiatry in Saudi Arabia. *Int J Psychiatry Med* 2013; 46(3):223-242
38. ONDH. Situation des personnes âgées au Maroc 2019, Ministère de la Famille, de la Solidarité, de l'Égalité et du Développement Social et Fonds des Nations Unies pour la Population, Morocco.
39. CIA: The World Factbook. Central Intelligence Agency, 2020. <https://www.cia.gov/library/publications/the-world-factbook/geos/qa.html>. Published 2020. Accessed 29 April 2020.
40. Alzheimer's Association Lebanon. <https://alzlebanon.org/>. Accessed May 28, 2020
41. Yaacoub N, Badre L. Population and housing characteristics in Lebanon, 2012, Lebanon. Retrieved from [http://www.cas.gov.lb/images/PDFs/SIF/CAS\\_Populati](http://www.cas.gov.lb/images/PDFs/SIF/CAS_Populati)
42. COVID-19 Coronavirus Pandemic. Worldometer, 2020. <https://www.worldometers.info/coronavirus/>. Published 2020. Updated 7 April. Accessed 7 April 2020
43. Ministère de la Santé. République Algérienne Démocratique et Populaire. <http://www.sante.gov.dz/>. Published 2020. Accessed 29 April 2020.
44. UNDP: Arab countries respond to COVID-19. Heightening preparedness, integrated multi-sectoral responses, planning for rapid recovery. United Nations Development Programme, 2020. Arab States Web site. <https://www.arabstates.undp.org/content/rbas/en/home/coronavirus.html>. Published 2020. Accessed 29 April 2020
45. Younes A: How Jordan is flattening its COVID-19 curve. *AJ Impact* 2020, <https://www.aljazeera.com/news/2020/04/jordan-flattening-covid-19-curve-200422112212466.html>. Published 2020. Accessed 29 April 2020
46. Rawashdeh M: Jordan Resorts to General Lockdown, Social Solidarity to Face COVID-19. *ASHARQ*, 2020. <https://aawsat.com/english/home/article/2214406/jordan-resorts-general-lockdown-social-solidarity-face-covid-19>. Published 2020. Accessed 29 April 2020
47. National Center for Mental Health Promotion: National Center for Mental Health Promotion. <http://ncmh.org.sa/index.php/pages/home>. Published 2020. Accessed 29 April 2020
48. General authority for statistics. <https://www.stats.gov.sa/>. Published 2020. Accessed 29 April, 2020.
49. Varnum P: Managing mental health during coronavirus - experts around the world share insights. *World Economic Forum*, 2020. <https://www.weforum.org/agenda/2020/03/covid19-coronavirus-mental-health-expert-insights/>. Published 2020. Accessed 29 April 2020
50. MOPH: Ministry of public health. <https://www.moph.gov.lb/>. Published 2020. Accessed 29 April 2020
51. فايروس كورونا المستجد في ليبيا <https://covid19.ly/>. Published 2020. Accessed 29 April, 2020
52. New coronavirus hotline launched in Morocco. *yabiladi*, 2020. <https://en.yabiladi.com/articles/details/91194/coronavirus-hotline-launched-morocco.html>. Published 2020. Accessed 29 April 2020
53. Sievers M: Oman's handling of the coronavirus Atlantic Council. <https://atlanticcouncil.org/blogs/menasource/omans-handling-of-the-coronavirus/>. Published 2020. Accessed 29 April 2020
54. Bukhari I, Atallah S: A collective effort to defeat COVID-19 in Qatar. *Peninsula* 2020, <https://www.thepeninsulaqatar.com/article/29/03/2020/A-collective-effort-to-defeat-COVID-19-in-Qatar>. Published 2020. Accessed 19 April 2020
55. Hassan M. MSF provides support to hospitals and sites in response to COVID-19 in Sudan. *MEDECINS Sans Frontières*. <https://www.msf.org/msf-provides-support-hospitals-response-covid-19-sudan>. Published 2020. Accessed 29 April 2020.
56. ICRC: COVID-19 in Syria: ICRC continues assisting millions and adapts to combat the virus. *Int Committee Red Cross* 2020, <https://www.icrc.org/en/document/covid-19-syria-icrc-continues-assisting-millions-and-adapts-combat-virus>. Published 2020. Accessed 29 April 2020
57. Hamza A: Covid-19: 'If there was a severe outbreak in Syria, there would be a bloodbath'. *France 24* 2020, <https://www.france24.com/en/20200423-covid-19-if-there-was-a-severe-outbreak-in-syria-there-would-be-a-bloodbath>. Published 2020. Accessed 29 April 2020

58. Portail national de la sante en Tunisie. Ministere de la sante, 2020. <http://www.santetunisie.rns.tn/fr/>. Published 2020. Accessed 29 April 2020
59. Jrad E: Tunisia facing COVID-19: to exceptional circumstances, exceptional measures? Arab Reform Initiative, 2020. <https://www.arab-reform.net/publication/tunisia-facing-covid-19-to-exceptional-circumstances-exceptional-measures/>. Published 2020. Accessed 29 April 2020
60. MOHAP: Ministry of health & prevention. <https://www.mohap.gov.ae/en/Pages/default.aspx>. Published 2020. Accessed 29 April 2020
61. Coronavirus pandemic. Khaleej Times, 2020. <https://www.khaleejtimes.com/coronavirus-pandemic>. Published 2020. Accessed 29 April 2020
62. Egypt: Supermarket adds 'senior hours' for elderly customers amid coronavirus outbreak RUPTLY. <https://ruptly.tv/en/videos/20200322-022>. Published 2020. Accessed 29 April 2020
63. Kotb M: COVID-19 updates: what is Egypt doing to curb the spread of the virus? Scoop Empire, 2020. <https://scoopempire.com/covid-19-updates-what-is-egypt-doing-to-curb-the-spread-of-the-virus/>. Published 2020. Accessed 29 April 2020
64. ILQ: HMC prepares plan to protect elderly from COVID 19. I love Qatar, 2020. <https://www.iloveqatar.net/coronavirus/govUpdates/hmc-prepares-plan-to-protect-elderly-from-covid-19>. Published 2020. Accessed 29 April 2020
65. Khoury A, Karam G: Impact of COVID-19 on mental healthcare of older adults: insights from Lebanon (Middle East). *Int Psychogeriatr* 2020; 1-4
66. Adamek M, Balaswamy S: Long term care for elders in developing countries in Asia and Africa: a systematic review. *Gerontologist* 2016; 56(Suppl\_3):413-413
67. Armitage R, Nellums LB: COVID-19 and the consequences of isolating the elderly. *Lancet Public Health*, 2020
68. Wang H, Li T, Barbarino P, et al: Dementia care during COVID-19. *Lancet*, 2020
69. Gerst-Emerson K, Jayawardhana J: Loneliness as a public health issue: the impact of loneliness on health care utilization among older adults. *Am J Public Health* 2015; 105(5):1013-1019
70. Santini ZI, Jose PE, York Cornwell E, et al: Social disconnectedness, perceived isolation, and symptoms of depression and anxiety among older Americans (NSHAP): a longitudinal mediation analysis. *Lancet Public Health* 2020; 5(1):e62-e70
71. ADI: ADI offers advice and support during COVID-19. Alzheimer's Disease International, 2020. <https://www.alz.co.uk/news/adi-offers-advice-and-support-during-covid-19>. Published 2020. Accessed 6 April 2020
72. Howard A, Blakemore T, Bevis M: Older people as assets in disaster preparedness, response and recovery: lessons from regional Australia. *Ageing Soc* 2017; 37(3):517-536