

Research Article

Mental Health Outcomes of COVID-19 Quarantine and Social Isolation among MENA Region: A Rapid Review

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Abstract: Background: The COVID-19 pandemic has caused the most serious health crisis in modern times worldwide, challenging the healthcare systems to contempt conventional practices to prevent exposure to infection and death. Deception of information from social media caused a psychological burden due to fear of contamination in the Middle East and North Africa (MENA) region. **Method:** This rapid review study was conducted to provide evidence on the psychological burden in the Middle East North Africa (MENA) regions and to prevent the psychological burden during any pandemic situation. **Results:** Opportunities for Mental health promotion are very minimal or still emerging in the MENA region. Also, there is a lack of concerted research evidence for mental health impacts during previous pandemics like severe acute Respiratory Syndrome (SARS), Ebola, and Middle East Respiratory Syndrome (MERS). MENA region is evaded many opportunities to advance mental health promotion activities and its preventive measures during quarantine, creating the negative effects which are mentioned in the studies as anxiety, stress, fear, sleep disturbance, and depression. **Conclusion:** The psychological impact of COVID 19 has been significant among the MENA region population. Many countries in the MENA region have an opportunity to quickly strengthen and accord significantly to combat against the psychological impact during the pandemic.

Keywords: Mental Health Outcomes of COVID 19, Social Isolation, MENA Region.

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INTRODUCTION

The pandemic COVID -19 showed how consistent our world is: No one is safe until everyone is safe. Only solidarity can save lives and overcome the devastating socio-economic impact of the virus. For the past year, the world has been experiencing a global public health pandemic as COVID 19 emerges as a threatening pandemic [1]. COVID -19 a new contagious disease caused by SARS-Cov-2 is a new strain of acute respiratory syndrome. According to the National Health Commission of China, individuals carrying the virus can infect others through both respiratory droplets and direct contact [2]. The severity of the disease is evident from the rapid spread of the virus, its high mortality rate, its new variants, and the recurrence of infection in previously affected individuals. The COVID 19 virus was first identified on December 31, 2019, in the city of Wuhan, China. WHO also reported several cases of pneumonia of unknown cause, which later became known as the new 2019-nCoV. The same patch of the virus was reported in four other countries by January 20, 2020[3].

The WHO declared COVID19 as a pandemic and a public health emergency of global concern on January 30, 2020. By the end of February 2020, the virus had spread to more than 24 countries and the disease was officially designated as COVID -19[4].

The number of positive individuals continues to rise and by May 2020, the virus had spread to all regions of the world. By the end of 2020 and early 2021, over 87,015,526 cases and 1,878,581 deaths had been recorded worldwide. (www.worldometers.info/coronavirus). In the MENA region, Lebanon is the first country to report COVID -19 in February 2020, followed by Algeria, a nation much closer to Europe and in northern Africa that has implemented a full lockdown due to the spread of the virus. According to the Algerian Ministry of Health, Population and Hospital Reform (MSPRH) [5] surveillance cell, the number of confirmed cases exceeded 101K, which also recorded 2,792 deaths by December 2020. On March 2, the first case of COVID -19 was recorded in Saudi Arabia and since then 36,300 confirmed cases 6,278 have been reported by the government of this region to the WHO [6]. Oman is one

of the regions affected by this pandemic and the first two cases were reported on February 24, 2020 when some citizens returned home after traveling abroad. The Ministry of Health had recently reported a growing number of people testing positive with minimal deaths and various recoveries. Approximately 500 confirmed cases/day indicated by Ministry of Health after mass testing [7].

The first measure taken in the MENA region to prevent the spread of infection is quarantine. Quarantine is one of the oldest and most effective tools for controlling communicable disease outbreaks. Quarantine separates people and restricts their movement, leading to social isolation. Prolonged quarantine, fear of infection, frustration, boredom, inadequate supplies, inadequate information, financial loss, and stigma affect the physical and mental health of the population regardless of age and gender [8]. Not only physical activity but also mental health is affected during quarantine [9], leading to depression, emotional disturbance, stress, low mood, irritability or insomnia, and suicidal ideation, especially in the elderly [10]. A study conducted with pregnant women in the second and third trimesters of pregnancy shows that approximately 35% of pregnant women self-isolated to avoid exposure to novel coronavirus (COVID -19). In addition, the flood of vague and unreliable information from various sources has caused panic and anxiety among pregnant women, affecting fetal development [11]. One study showed that as a result of COVID19 blocking and online instruction, children and adolescents became less inactive, spent more time with electronics, their sleep patterns were disrupted, and their eating patterns increased, causing them to gain weight. Children experienced isolation from their extended families, peers, teachers and wider communities [12]. In addition, an international study including data from various countries in North and South America, Asia, Europe, and Australia shows that untreated schizophrenia (32.2%), alcohol disorders (78.1%) and major depression (56.3%) led to social isolation during the pandemic and in turn accelerated mental health problems and suicidal thoughts [13]. The study also observed that COVID -19 pandemic anxiety, stress, insomnia, depression, and fear of infection were more prevalent among healthcare professionals, people with pre-existing psychiatric disorders, and those living in areas with a high prevalence of COVID -19.

In the Arab countries of the Middle East and North Africa (MENA) region, the total population is 449 million and the health care system in this region is still in transition. A few Arab countries of the MENA region have the privilege, either from the government or private sectors, to meet the challenges of mental health, but it is frequently overlooked as they still consider mental health issues as societal stigma [14].

In MENA region, 75% of health issues is related to the communicable diseases and injury except in Sudan and Yemen, the lower middle-income countries, instead they account for burden of infectious and parasitic diseases, also account for a significant share of DALYs (Disability-adjusted life years). i.e.loss of life lost due to both premature death due to Cardiovascular disorders (CVDs), mental and behavioral disorder, DM and cancer are health burden in most of the MENA countries[15].

Why is this Review needed?

During Covid-19 outbreak, national bodies, international bodies and institutions have ordered physical distancing, social isolation and quarantine, to condense the transmission of the virus [16]. These measures are often an unpleasant event for population globally. Parting from society and family, isolation, ambiguity over disease status, and dullness can, create intense physiological and psychological effects [17]. Increased suicidal rate, substantial anger [18] and lawsuits were common following the quarantine guide lines in previous infection epidemics [19]. These strategies also showed other negative impacts on the mental health and wellbeing, such as frustration, loneliness, worries, anxiety [20], affective disorders, and psychoses. Coronavirus-induced distress [21].

In MENA region social mechanism is very minimal and social trust among the wealthier and educated citizens is less appreciated also the religiosity, gender injustice, plays pivot role in all the aspects of life [22]. So, a special care is essential for MENA region population during any pandemic outbreak.

METHODOLOGY

Aim

We aimed to provide an over view of mental Health Outcomes of COVID 19 Quarantine and social isolation among MENA region population.

Search strategy

A methodical search was conducted using the data base, Medline, Google Scholar, medRxiv and Pub-med using the English language literature form December 2019 to November 2020. Original research studies and clinical review. Our search terms included "MENA region" or "Mental health" AND "quarantine" or "social isolation" or "loneliness" AND mental health related terms with a focus on the most common mental health problems like depression anxiety and stress.

Rapid review of literature method was conducted as per the National collaborating center for methods & tools guide book and used PRISMA guidelines for reporting the review. Due to time constraints, one reviewer conducted the search, reviewed full texts and extracted data. Of 786 generated records, we identified 45 full-texts as relevant articles, based on titles and abstracts screening. After examining

the methodological quality, 11 articles from MENA region were considered as relevant to the review. The most common reason for abstract exclusion was due to not from the MENA region, or not focusing on the Psychological impacts of COVID 19.

Study eligibility criteria

After screening the title and abstract, we included the studies that reported insanity, its associated risk factors, and COVID 19 preventive measures followed, in MENA region. Also, the studies which used standardized and validated tool for psychological measurement of any subgroups (Employees, University

students, geriatric). Studies were excluded if they: are other than English, not from MENA region. Psychological impact of pregnant women, if full text not available.

Data charting

The following were extracted from the eligible studies: Author and year of publication, Country/region of the study conducted, Study design, Sample size, Sample characteristics, used tool of assessment, Prevalence of depression/anxiety/ PTS/stress symptoms, related risk factors, finally preventive measures.

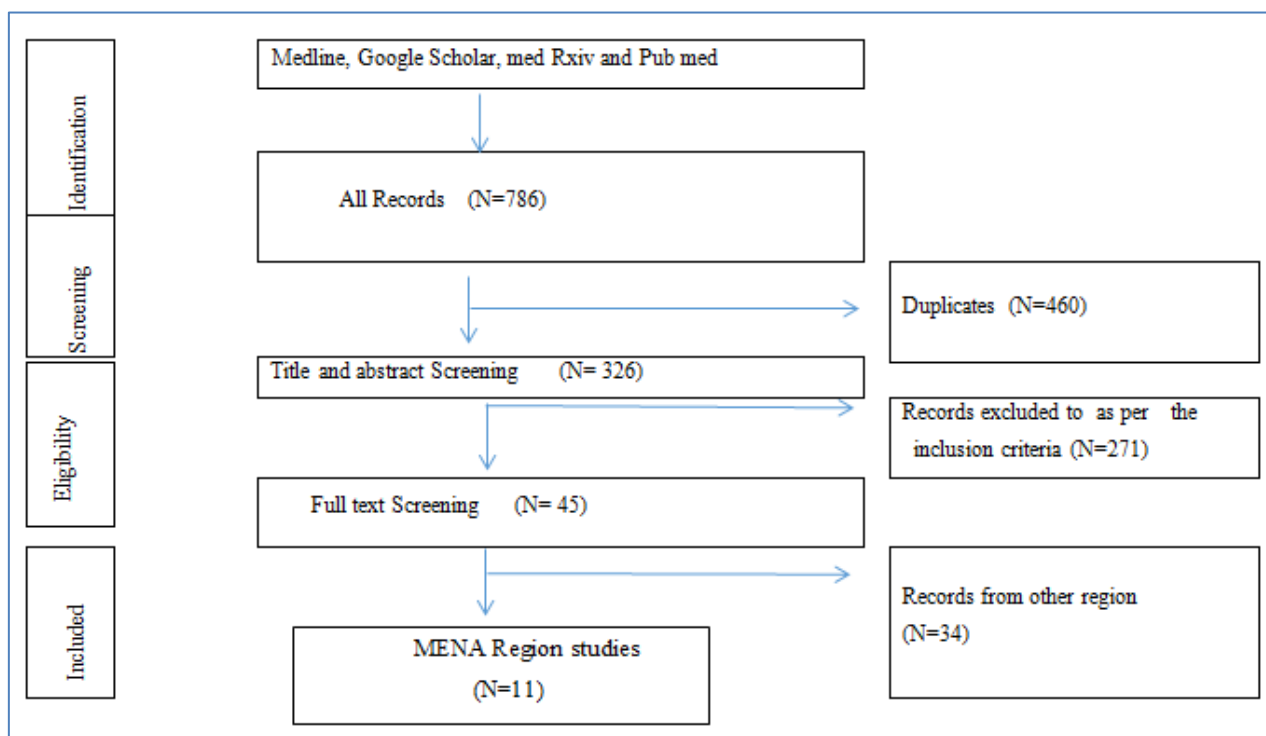


Fig-1: The selection process is represented

RESULTS

Search results

Our search identified 786 unique citations, among which 11 studies were included in this review are from MENA regions like: Saudi Arabia -2, Morocco -1, Bahrain -1, Palestine-1, Qatar -1, Egypt -1, UAE-1, Libya-1, Algeria -1 and MENA region -1.

Fig.1 elaborates the screening process in PRISMA flow diagram and Table-I provide a summary of included studies. Of these 11 articles, Nine (9) studies used cross-sectional research design, one (1) a quantitative transversal study, one (1) clinical review article and interview method.

Study character

Study samples involved educated, general public of age group above 18-60 years and also the thirteen psychiatrists. Sample selection was mostly through snowball sampling technique. Data collection

was on-line either through Twitter, Facebook, Instagram, or google forum, due to the home confinement.

The psychological outcomes of the study chosen are varied across studies. Of the 11 studies included, 10 studies assessed the Psychological impact of MENA region 1 study exceptionally assessed the Correlation between parent’s activity and children’s mental health during Quarantine.

Measurement tools

A variety of assessment tools were used to measure impact of social isolation and social distancing on mental well-being. Most commonly used tools was, Depression, Anxiety, and Stress Scale (DASS-21) by 4 studies, other scales are- Event scale Revised (IES-R), Emotional regulation scale (ERQ), Satisfaction with life scale (SWLS). Multidimensional scale of Perceived Social support (MSPSS), Mental Health Continuum

Scale, GHQ-12 (first part), Hospital Anxiety and Depression Scale (HADS), A Google Form self-administrated questionnaire for psychological Conditions, semi-structured guide in supplementary tables, global questionnaire, Beck Depression Inventory second edition (BDI-II), perceived Stress Scale (PSS) - 10 and mental health score (MCS)

Main findings

Three main themes emerged from the thematic analysis of the study. 1) Depression and associated risk factors 2) Associated Risk factors anxiety 3) Stress and associated risk factors 4) Mental health Protective factors 5) Preventive measures

Depression and associated risk factors

Depression signs were measured in 9 of 11 studies [22-32]. The prevalence of severe depression symptoms ranged from 50 to 74% in which 16.4 to 57.5 % of population showed moderate to severe depression. In MENA region geriatric group it ranged from 10-46% [30].

Numerous associated risk factors with depression symptoms were identified in the population MENA region .6 Studies reported that females are most commonly affected by depression, compared to their male counterparts [22, 23, 24, 26, 28, 32]. Participants in the age group ≤ 55 years showed higher psychological distress in the majority of the selected studies and only one study by El Keshky M *et al.* [28] noted the reason, as young adults are primary economic supporters and caregivers of the family. Four studies [22, 24, 26, 27] also identified that students and participants with higher education level, working in the medical field, on-site working and has greater prevalence of depressive symptoms. Lack of enjoyment, lack of play, pausing and limitations of many activities led to depression the many students [26].

Further in two studies [22, 30] Parkinson's disease, dementia, pre-existing mental illness, lack of geriatric counseling center, loss of spouse were associated risk factors for depression. Other identified risk factors are duration of quarantine, family violence, lack of sleep (<6 hrs) especially in college students, a potential risk factor for depression [23, 27].

Mixed results regarding family support and depression were observed in two studies. Family support was positively related to less depression [23], on the other hand one study found an increased prevalence of depression due to constant family support, and lower prevalence of depression due to support from the friends. The predicted reason was the convenience of expressing feelings to a friend rather than a family member [28].

Other risk factors were, poor self-rated health status, known history of mental illness, chronic illness,

fear of disease transmission, lack of food supply and living in the urban area, but the reported risk factors for depression are of young adults, female gender, and college students, are more prone to developing mental disorders. Depression is commonly seen in young age groups and in females, as compared to males and older age group.. Other predictive dynamics include duration of lockdown, termination of employment travel to work, presence of a family member or friend with a COVID 19 infection, presence of chronic medical illness, and poor self-rated health.

Symptoms of anxiety and associated risk factors

Anxiety symptoms and related risk factors were assessed in 7 of 11 studies, with an apparent disparity in the prevalence of anxiety symptoms ranging from 13.9 % to 57.5%. Anxiety often co-occurs with depression [33]. Most the depressive and anxiety predictor are identical and include, younger age group (≤ 50 years), lower education level, poor/incorrect self-rated health, isolation, female gender, married couples, quarantine status, fear of being infected, living in containment zone , poor self-rated health status, being lone, low income, isolation status, fear of exposure to infection, unemployment, presence of vulnerable and chronic health conditions at home, history of mental disorders, COVID 19 infected person at home. In addition, frequent exposure of mass media news/information for more than 2hrs/day, or watching 5-10 hrs of international TV channels to follow new information was absolutely associated with anxiety symptoms [23, 32].

Further, another study [27] reported that on-line teaching and postponement of courses was reported to be a risk factor for anxiety in students. Study anxiety was projected as insomnia in 32.5%, unhappiness in 30.5%, feeling constantly strain and poorer ability to cope with problems in 13.6 % of college students. Nevertheless, due to stigma and privacy dilution, majority of the students did not recommend mental health mobile app.

Symptoms of psychological Impact /stress and associated risk factors

Only one study [22] has reported the prevalence of psychological distress of emerging COVID 19. More than half of the participants 59.7% had normal scores on the IES-R, but 16.6% had mild score range, and 17.9% had severe score range. With respect to stress symptoms, prevalence rates ranged from 13.7 to 55.5% [22-28]. Despite of using the same measurement scale as i.e., DASS-21 scale. In another study [31] a remarkably different result, on the PSS-10 scale, 63% of the participants reported normal to mild stress. 35.5% moderate to severe stress.

Coping strategy

Only one study [25] examined the coping strategies during quarantine and a positive effect of

social distancing. A significant indirect effect on both parents' and children's mental health through parenting activities (play) was observed in the study. This implies that parents' coping skills and engagement in activities with the children play a significant role in promoting mental health of both parents and children. However, the study did not mention the type of activity, duration of activity, the resources used for the activity and children's age group as participants.

Protective factors

In addition to potential risk factors, three studies also reported individual protective factors to combat the pandemic. Dissemination of knowledge on the coronavirus, up-to-date information about disease transmission modalities, and new guidelines were associated with lower risk of anxiety, depression and stress. It was also observed that 88% of the general population had confidence in local health authorities [22, 26] compared to the social media. In addition, precautionary measures such as repeated hand hygiene 10-40 times a day, wearing, masks, following cough etiquette, limitation of movement, reading a book, watching TV even for 12 hours, avoiding social gatherings also anticipated lower psychological stress levels [22, 26, 32]. Individuals with stress coping personality and avoidant attachment styles, reported fewer symptoms of anxiety and stress.

Psycho social and economic impact

A study by El- Gimati Y *et al.*, [29] reported that the spread of the COVID19 causes psychological and economic problems in all strata of population. Low marriage rate, no social gathering, closure of shopping malls and entertainment halls, boredom due to long duration of home stay, family violence and stress, anxiety and depression were found in the population with prolonged quarantine. The study also showed that the COVID19 affected the behavior of family members, as well as the society at large. This is due to the fear of illness and death.

DISCUSSION

In early 2020, WHO recommended, measures such as physical distancing, and quarantine, to prevent the further spread of COVID-19, so most of the government declared a partial or full lock down, with the area marked with different zones depending on the severity of effected population. Higher levels of restrictions resulted in loneliness, high level of psychosocial distress (anxiety, depression and stress). In particular, social isolation has been associated with an increased risk of various mental disorders and somatic diseases in general. Therefore, our review sought to examine the mental health status of the population in the MENA region population and the associated risk factors for mental distress.

For the first time, this Rapid review examined the impact of COVID19 on the mental health of the

MENA population. The eligible studies in this Rapid Review mainly reported on the magnitude of the mental health impact of COVID19 and associated risk factors in the MENA population. In general, the prevalence of psychiatric symptoms was high in the population when compared to the pre-pandemic period. Throughout the study, differences in prevalence rates were found which could be due to different sample size and disproportionality of sex sample, different measurement scales, different socioeconomic status of the country, educational status, and source of COVID 19 information.

This study examined the psychological effects of COVID 19 among the population of the MENA region and found that depression, anxiety and stress accounted for the largest proportion. 46% of the population exceeded the cutoff score for potential depression, 57% of the population exceeded the cutoff score for potential anxiety and 75% for potential stress during the outbreak of COVID 19. These results were congruent with many studies conducted in China, UK and Germany [33-35]. Some demographic variables such as age and gender might play a role in the psychological well-being of individuals. Our study also found that women were more likely to experience mental health problems, especially depression and anxiety, during the pandemic compared to men. This finding is similar to a recent study that showed that men had a lower chance of developing depression, anxiety, loneliness, and stress [38]. However, the studies did not mention the reasons for the gender difference. The biological determinant of vulnerability to psychosocial stress may be due to hormonal and developmental factors in males [36]. A survey in China one month after the outbreak of COVID -19 also reported higher post-traumatic stress symptoms in females [37].

Participants under 55 years of age were more likely to experience psychosomatic symptoms during the pandemic. This could be due to their family responsibilities, financial and emotional support of children or the elderly and caring roles.

Also, a large proportion of individuals under 55years old consist of students and the working population. Students may experience more emotional distress due to closures of university, lower study efficiency with remote online courses, future courses, somatic sadness, low self-esteem and in working population due to deduction of wage, termination from the job, no salary, long term stagnation at home, working at an office with many employees. This is consistent with a study, which assessed the mental status of Chinese college student [38] and Chinese employees [39] and noted higher levels of depression, anxiety and stress symptoms during the COVID-19 outbreak. In addition this review noted that working in medical field or family member working in the medical fields as one of the psychological burdens as they deal

with patient and have more exposure to undiagnosed population. On the other hand, people in a cross sectional study at Singapore reported the high anxiety prevalence among nonmedical health care workers than medical personnel and recommends an early psychological intervention to this vulnerable group [40].

People with a history of chronic illness or medical/ psychiatric illnesses displayed deviation from psychological health; it would be because of postponement of appointment, non-accessibility to medical services and treatment due to partial closure of Hospital units to prevent the spread of disease. Participants, having a family member with chronic medical/ psychiatric condition also showed more stressor, such as social isolation. This is in line with a study conducted in Singapore [41]. The review also identified that frequent exposure to social media/news relating to COVID-19 as a cause of depression, anxiety and stress symptoms and in a study also mentioned that 80% of the population confidence in local health authorities information which was congruent with a cohort study of Singapore which reported that 99.1% of population trusted the COVID 19 related information from official government sources [42]. It may be due to potential fake news about the mode of transmission, lack of accurate information with the impulsive situation and a lot of indecision about the novel coronavirus; constant watching of news also leads to fear and anxious feelings [43]. In addition, a large percentage of people under the age of 55 consist of students and the working population. Students may experience more emotional stress due to university closures, lower study efficiency with online distance learning courses, future courses, somatic sadness, low self-esteem and in the working population due to wage deduction, job termination, no salary, long-term stagnation at home, working in an office with many co-workers. This is consistent with a study that examined the mental status of Chinese college students [38] and Chinese white-collar workers [39] and found higher levels of depression, anxiety, and stress symptoms during the outbreak COVID -19. In addition, this review found that people who work in the medical field or family members who work in the medical field are one of the psychological burdens because they deal with patients and have more contact with undiagnosed people. On the other hand, people in a cross-sectional study in Singapore reported the high prevalence of anxiety among non-medical health workers compared to medical workers and recommend early psychological intervention for this vulnerable group [40]. People with a history of chronic illness or medical/psychiatric conditions showed a deviation from psychological health, whether due to rescheduling of appointments, inaccessibility of medical services and treatments due to partial closure of hospital units to prevent the spread of illness. Participants who have a family member with a chronic medical/psychiatric condition also showed

more stressors, such as social isolation. This is in line with a study conducted in Singapore [41]. The review paper also noted that frequent exposure to social media/news related to COVID -19 is a cause of depression, anxiety and stress symptoms and a study also mentioned that 80% of the population trust information from local health authorities, which is in line with a cohort study from Singapore which reported that 99.1% of the population trust COVID 19 related information from official government sources [42]. It may be due to possible fake news about the mode of transmission, lack of accurate information with the impulsive situation and much indecision about the novel coronavirus; constant watching of news also leads to fear and anxious feelings [43].

Individual motivational activity also relieves their mental stress. For example, engaging with their children through play or shared activities has been shown to be effective in preventing symptoms of depression or stress. The results also showed that parental activities with children were significantly positively correlated with parents' coping strategies. This means that parents who develop and implement activities with children are more likely to have coping strategies that enable them to deal with stressful circumstances. A study in the Netherlands also found a positive relationship between parent-child activities and children's mental health. The Positive Mental health of both children and parents may be attributable [44]. In one study, university students recommended a mobile app for coping with mental health issues, and a review paper identified a stress management app available in the iOS app store that provides critical guidance and health-related self-management apps for the future [45].

The strength of our work is, this is the first rapid review that summarizes the existing literature, relevant to the mental health of the MENA population during the COVID19 outbreak and highlights its potential risk factors to provide suggestions for addressing the mental health crisis among the population of the MENA region, although this review has certain limitations. The findings of the studies were qualitative and narrative and due to the lack of time, the reviews were not peer reviewed. In addition, all studies were conducted virtually and the questionnaire was only completed by participants who had a basic knowledge of using the internet and the required application. Due to the lack of studies conducted in each of the MENA countries, it was difficult to conduct a rapid review covering all MENA regions. In addition, the number of articles used in this review was smaller; this affects the generalizability of the findings. Crucially, the mental health problems caused by social isolation and disengagement, and ways to overcome them, need to be comprehensively highlighted

CONCLUSION

This rapid review surveyed the psychological status of the MENA region population during the COVID-19 pandemic and emphasized the related risk factors. An increased incidence of adverse symptoms of psychiatric was stated in most studies. The COVID-19 pandemic represents a unique threat to mental health globally irrespective of the socio-economic status. Hence, priority needs to be given to the prevention of mental disorders (e.g. major depressive disorder, anxiety, and stress). An integration of government policy that focus on viral risk mitigation and mental health strategies during pandemic is urgently needed for MENA region.

Authorship contribution statement -Ms. Sophia Cyril contributed to the overall design, article selection, review, and manuscript preparation. Ms. Shima Shaima Salim Nasser and Ms. Azza Zahran Sulaiman Ms. Asma Saif, and Ms. Mabrouka Faraj contributed to the study in preparation of the study matrix, result from analysis, discussion. Ms. Shama contributed to reviewing the article, Ms. Sophia in editing, and submission. Declaration of Competing Interest None. It is a non-funded study

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Rfno	Authors & Year	Place	Research Design	Sample size	Instruments	Sample characteristics	Outcome prevalence	Associated Risk factors	Precautionary measures
23	Arafa, A., <i>et al</i> 16-30 April 2020	Egypt	Cross-sectional Online survey	N= 1629	DASS-21 - Cronbach's α =0.88	Male=690 (42.4%) Female =939(57.6%) Age- 18-> 45yrs Education- 80.4% Higher education, Marital status- 54.3% married Employment Income -middle income, 58.4% lived in Villa with 6 or more people in the same household Occupation – 20% were working in the health sector and almost same were not working.	DASS score 67.1%: mild to moderate 44.6% depression and 22.5% severe to very severe anxiety 53.5%: mild to moderate 30.6% and severe to very severe 22.9%), stress (48.8%: mild to moderate 33.8% and severe to very severe 15.0%), Inadequate sleeping 23.1% <6 hrs.	Females, higher education back ground, lower income, people working in non-health sectors, lackemotional support from family and society, Living with elder Age more than 30yrs Further, watching/reading COVID-19 news \geq 2 h/day Exposure to social media and thinking about the pandemic for a long time	
22	Alkhamees <i>et al.</i> , October 2020	Saudi Arabia	Cross-sectional survey	N=1160	IES-R DASS21 Cronbach's α is 0.88	Female=741 Male =419 Age- 18-60 yrs Education-23%, bachelor's degree 61.2%, Marital status- 54.3% married Employment- 35.0% and 29 % student Income -middle income, 58.4% lived in Villa with 6 or more people in the same household Occupation – 11.7% in medical field 27.9% family members working in medicalfield.	IES-R Score -59.7% had normal 16.6% the mild range, and 17.9% severe. DASS-Score 13.7%, sever stress 13.9% severe anxiety and 16.4% severe depression 17.3% chronic disease and 10.5% psychiatric disorder. Having a chronic disease was only significantly associated with lower scores on the stress subscale of the DASS 1.5% were tested positive for COVID 19 (95%) excellent level of knowledge on the mode of transmission of the coronavirus (contact, droplet)	Female gender age group 18-30 years with high school degree, had higher IES-R and the three subscales of the DASS. Earning less significantly associated with IES-R and higher depression. Employment significantly associated with lower scores on the IES-R and Being a student as significantly associated with higher scores across all three subscales of the DASS with B Medical field worker or the family member who working in the field was associated with higher scores on the DASS.	Avoidance of sharing of utensils during meals No Handshaking, cough etiquette (covering mouth when coughing and sneezing), hand hygiene, wearing a mask Not going out unnecessarily

27	26	25	24
<p>Drissi, N <i>et al.</i> UAE Cross-sectional Online survey N= 154 GHQ-12 Attitude on m-Health apps Cronbach's α is 0.82</p> <p>Female=113 (74%) Male=41 University students Science back ground (57.8%)</p> <p>50/154, 32.5%- had sleep issue. 11.7% worse sleep 32.5% elevated states unhappiness and depression 30.5% reported feeling constantly under strain 33.1% high depression and Anxiety. 49% total GHQ-12 score. 42% social dysfunction. weak correlations between the age, gender 74.0% never used an mobile mental health care app. 10.5% un willing to use it. Stigma was among the expressed reasons for preferring mental health care apps.</p> <p>Students lack of enjoyment of daily activities. lack of a sense of playing</p>	<p>Al Zabadi et.al Palestinian Cross-sectional N= 2819 (DASS)</p> <p>Female -2051 Male-768 > 18yrs 72.6% were females. (51.4%) were single. (78.4%) were collage or graduated recently. Residence Smoking</p> <p>High anxiety / stress prevalence. High-risk at home knowing or being in contact with confirmed cases Females gender. Age -30.06yrs Fear of transmission Living in Urban area Working on site Not enough food supply Social media staying alone noted more stress</p> <p>High levels of stay at home commitment, commitment to inside home precautions and understanding of quarantine;</p>	<p>Abdelrahman <i>et al</i> <i>June 11 and July 10, 2020</i> Qatar Cross sectional Online questionnaire N= 308 Mental Health Continuum Scale</p> <p>Female= 205 Male= 103 Respondents were parents aged 24-64 years 95% with college degree and higher.</p> <p>Parents activity (play) enhances mental health of both children and parents.</p> <p>significant positive correlation between social distancing and parents' activities with children parents' mental health with parents' activities with children Children's mental health and parents' coping strategies Parents' activities and children's mental health parents' coping strategies and children's mental health</p>	<p>Alsalmán, A. <i>et al</i> 2020 Bahrain Cross-sectional N=1115 DASS-21</p> <p>1081 Bahraini -33 non-Bahraini Age 18 - >70 Education - Primary to college COVID19 Status Location Chronic Illnesses Information Source Smoking</p> <p>30% depressive symptoms, 18.2% anxiety symptoms, and 30.8% stress symptoms.</p> <p>Depression, anxiety and stress higher in Bahraini. Depression is highly and significantly association with age. (> 40 yrs) Depression & anxiety in Female gender but no stress., secondary and college education, chronic mental illnesses, social media as the main source of information were more depressed work type, Nationality, Covid-19 status, smoking. students and people with the lowest income reported more depressive features.</p>

30	El Hayek, S. <i>et al.</i>	Arab countries MENA Regions Clinical Review Article N= 13 psychiatrists from Arab countries of the MENA region Interview method using semi-structured guide	Egypt, Lebanon, Kingdom of Saudi Arabia (KSA), United Arab Emirates (UAE), Jordan, Libya, Morocco, Oman, Qatar, KSA, Sudan, Syria, Tunisia Egypt, Lebanon, Kingdom of Saudi Arabia (KSA), and UAE mostly tackle old age depression high prevalence of depression Prevalence of depression between 10% and 46%. Depressive symptoms .Also in 46% in those with Parkinson's disease and 57% to 86% in dementia of Alzheimer's type and vascular dementia respectively. Algeria, Libya, Sudan, and Syria, have less exposure no geriatric clinic. In Syria geriatric medicine remains a foreign discipline. UAE limited facilities. Jordan, Lebanon, Morocco, Oman, KSA, and Tunisia, Jordan has less than ten geriatricians. Alzheimer's Association Lebanon Alzheimer's Association of Morocco Alzheimer's Association of Oman providing support for patients with dementia and their caregivers throughout the country.	29	El-Gimati, Y. <i>et al.</i> (July 2020) Libia Online questionnaire N=902 Self-administrate questionnaire Cronbach's $\alpha = 0.717$ to 0.792	28	El Keshky, M. <i>et al.</i> 2020 Saudi Arabia cross-sectional N= 200 ERQ SWLS MSPSS HADS Females = 152(76%) Males. = 48(24%) 2% aged 0-19 years, 42.5% 19-29 years, 31.5% ,30-39 years, 14%, 40-49 years, 10% older than 50years. 10.5% were non-Arabic, 89.5% were Saudi Arabian. In the sample, 38% full-time work, 9.5%-part time. 6% retired, 46.5% unemployed.66% of them from outside of the KSA. 40.5% of participants as having anxiety, 57.5% as having depression, and 55.5% as having stress. (need further refer for result)
			Depression and stress due to long being at home family violence Children's behavior in the family A change in the parents' behavior towards their children.	74.0% .Boredom and depression 72.2%Family stress from	Anxiety -Female residents Younger age group, low emotional control Depression -female, lack of expression of their feeling .and Staying at home, losing their jobs, and the fear of serious health issues. Increased family support from family increased depression and friends support decreased depression. Stress. - Stigmatization. Financial loss		

32.	Madani, A. <i>et al.</i> May 2020 Algeria	31 Maliki, I. <i>et al.</i> (April 2020) Morocco
Cross-sectional Online questionnaire	N=678	Quantitative transversal study N= 263.
Global questionnaire Social impacts Psychological impacts Impacts on Mobility Cronbach's α is 0.831	405 men, (59.7%), 273 women, (40.3%).	BDI-II PSS -10 Cronbach α 0.58- 0.93
50.3% anxious 48.2% stressed, 46.6% feeling in a bad mood, and 47.4% negative attitude about disease. 87.9% of found it difficult to follow the confinement instructions.	Female= 128. (48.67%) Male= 135 (51.33%) Age 18 to >60 yrs. 42.2% married, 57.8% single 65% graduate and above 45.6% working 2/3 rd non-smokers, non-alcoholic,.	55.9% of the respondents were in a normal state of stress and 36.1% in a moderate state. 0.4% severe stress. 38.4% and 27.8% exhibited minimal and severe depression respectively.
Female population is more affected by coronavirus The lack of awareness through the dissemination of specialized information new organization of daily life treatment for Virus.	Men generally exhibits slightly higher stress scores than women, Unpredictability situation, misinformation Preventive measure. Quarantine leading to lose personal relationships and traditional, social interventions, Somatic sadness/despair, low self-esteem and negative thoughts	High rate of hand washing watch television for around 15 h. reading books for 2 h a day. In mobile for 5hrs 10 and 15 h of Facebook and Twitter and that of YouTube,

Depression, Anxiety, and Stress Scale (DASS-21) Event scale Revised (IES-R), Emotional regulation scale (ERQ), Satisfaction with life scale (SWLS). Multidimensional scale of Perceived Social support (MSPSS), Hospital Anxiety and Depression Scale (HADS), Beck Depression Inventory second edition (BDI-II), Perceived Stress Scale (PSS) -10 mental health score (MCS) Short form Health Survey (SF-12).

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