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Research Article

The Covid-19 Pandemic and Mental Health: Saudi Arabia's Policy Challenges and Way Forward

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ABSTRACT

Objective: Mental health disorders are considered as a major public health problem. This articleaims to provide an overview ofthe impact of Covid-19 pandemic on mental health care system in the Kingdom of Saudi Arabia(KSA) andmajor policy implications and challenges.

Methods: This study is based on desk research and secondary data. Key words "Covid-19", "mental health", "mental health system", "mental health policy" and "health system in Saudi Arabia" were used to select peer reviewed articles and documentsfrom Medline, Google Scholar, Scopus and PubMed databases. Many of the country specific and reports and papers were also abstracted using Google search engine.

Results: The Covid-19 pandemic has seriously affected the mental health of population of all ages, including health care providers. Mental health care system in KSA is likely to face a huge challenge due to increasing burden of mental disorders, particularly among adult population. KSA allocates 4% of its health budget on mental health care, of which 78% goes to hospital based care, leaving primary mental health services inadequate and ineffective.

Conclusion:KSA needs to adopt a rigorous approach to mental health care delivery that address all aspects including the number of mental health care facilities and providers;appropriate skill mix, reducing regional imbalance, improving awareness of population, andsustainable community-basedapproach.

Key Words: Covid-19, mental health, Saudi Arabia,mental health policy, mental health care

INTRODUCTION

The Covid-19 (Coronavirus Disease of 2019) pandemic has created unprecedented impact on socio-economic and mental health of millions of people worldwide**.** Historically, there have been many outbreaks over the time such as the SARS epidemic, swine flu outbreak, Ebola, MERS all showed an adverse impact on mental health of population including depression, anxiety and stress [1-7]. Studies in countries across the globe have documented the impact of Covid-19 pandemic on different

segments of population. Evidences in China[8-13] and other countries [14-21] showed that Covid-19 has left a severe psychological impact on population of all ages, Health professionals and frontline workers are at significant risks of adverse mental health outcomes and several studies have shown that health providers who had increased workload, less sleep, discrimination and fear had more chances of experiencing mental health disorders [17,19,21].Disruption of healthcare system due to Covid-19 has affected healthcare services of people with chronic health problem and their inability to access timely care. Likewise, there are disruptions in the continuity of care of patients with preexisting mental health problems like bipolar disorder or schizophrenia which results in worsening of both mental and physical health. Few studies have noted that Covid-19 resulted in mental health problems in women more than men because they are more vulnerable to adverse effects of the pandemic and stress attributed to multiple roles both domestically and professionally [10,11,14].

In Saudi Arabia, many studies have highlighted the mental health impact of Covid-19 in the population. During the early stage of disease outbreak, Alkhamees et al showed that 23.6% of the population had moderate or severe psychological impact of the outbreak, 28.3% moderate to severe depressive symptoms, 24% anxiety and 22.3% had moderate to severe stress symptoms respectively [22]. Elhessewi et al reportedpsychological distress among 35% of study population, particularly among youths and unmarried [23].Alamri et al reported depression, anxiety and stress among 17.1%, 10%, 12% respectively among study population. These symptoms were higher among, younger respondents, females and health care providers [24]. Zakout et al showed a higher prevalence rate of depression, anxiety and stress among expatriate population were 50.4%, 34.2% and 59.7% respectively as against 30.4%, 13.5% and 27% among Saudi nationals [25]. Astudy by Alfawaf et al among academic community of King Saud University from May 11 to June 6, 2020 at the peak of nationwide lock down showed that 58.1% of respondents suffered from anxiety, 50.2% depression and 32.2% insomnia [26].Therefore, an understanding of the impact of Covid-19 pandemic on mental health problem provides a basis for timely interventions directed toward vulnerable populations and to implement appropriate mental health strategies at the early stage of the pandemic.

METHODS

This article was based on desk research and secondary data. In exploring the impact of Covid-19 on mental health of population in Saudi Arabia, researcher used key words “Covid-19”, “mental health”, “mental health system”, “mental health policy” and “health system in Saudi Arabia” to identify peer reviewed articles and documents.All research articles and documents were collected from Medline, Google Scholar, Scopus and PubMed databases. Many of the country specific and reports and papers were also abstracted using Google search engine. All articles collected from peer reviewed

journals, and data from official reports of Saudi Ministry of Health, publications of international organizations including the data collected from the reports of World Health Organization were reviewed to present an overview of the impact of Covid-19 on mental health problems in Saudi Arabia and its implications for health policy and planning. The exploratory investigation was conducted between January – March 2021 to collect relevant scientific articles and documents published in English that helped in understanding the policy implications and challenges of Covid-19 and mental health in Saudi Arabia. The relevant information, thus collected from various sources was used as a way of triangulation to provide integrity to the analysis.

IMPACT OF COVID-19 ON HEALTH CARE PROVIDERS

Health care providers are at greater risk of developing mental health issues during the pandemic. Many studies have assessed depression, stress and anxiety among health care providers during the pandemic. Alteeq et al found that 55.2% of health providers in the MOH had depressive disorder and generalized anxiety disorder was reported by 51.4% [27]. Almater et al showeda higher prevalence of depression (50.5%) and anxiety (46.7%) among ophthalmologists [28].Zaki et al showed 19.3% of armed force hospitalstaff in the Kingdom had depressive symptoms, 27.3% of them reported that Covid-19 has impacted their official duty and 40.6% were financiallyaffected [29]. Alzaid et al in eastern province of KSA showed that one-third of respondents experienced anxiety disorder and factors like being females, those living with family, and history of Covid-19 in the family increased risk for anxiety disorder [30]. Alenazi et al reported high level of anxiety among 32.3% of health providers, and the problem were likely to be higher among unmarried, nursing staff, those working in department of radiology and pulmonary medicine [31]. Further, health care providers living with elder persons, having history of chronic diseases, immune deficiency, engaged in treating covid patients are likely to have high anxiety levels. Al-Ammari et al in different regions of KSA showed that a majority of health workers experienced normal to mild depression (76.9%), anxiety (78.8%) and insomnia (85.8%). Risk factors for these symptoms are likely to be higher among females, Saudi nationals, living with family, isolated at home, and frontline workers [32]. Al Sulais, Mosli and Al Ameel in their study among physicians across KSA showed that worry, isolation and fear reported by 67.5%, 56.9% and 49.7% respectively [33]. A study by Temsah et al prior to outbreak of Covid-19 in KSA showed that anxiety level from Covid-19 was much higher among 41.1% of health workers compared to MERS-Cov and were mostly concerned with transmission of infection to themselves and family [34].

GOVERNMENT INITIATIVES

KSA has initiated number of programs to overcome depression, fear and anxiety inflicted by the crisis. National Centre for Mental Health Promotion (NCMH), in partnership with other agencies launched many initiatives like free psychological

counseling through a smartphone application. Another program called 'Qareebon' provides counseling services through well trained psychologists and other social workers. In line with the Saudi Vision-2030, that aims to improve efficiency and productivity of human resources, NCMH also launched a program to improve mental health awareness among government employees by imparting them with appropriate stress management skills. In order to provide psychological and moral support services to health care workers who were affected by the pandemic, special programs are established by the Royal Commission in Jubail and Eastern Province Health Affairs. The Saudi Centre for Disease Prevention and Control published a preventive guideline for mental and social health which provides awareness messages to vulnerable population during the pandemic. In orderto raise awareness prevention and treatment of mental health problems, the Saudi Sustainable Development Association started initiatives like 'your mental health comes first'.

Information technology plays a significant role in prevention of covid-19 pandemic. Existing web based application 'mawid' and 'sehhaty' were updated to respond to the Covid-19 pandemic services. Health Electronic Surveillance Network (HESN) has been used as reliable source of data to monitor patients with covid-19. Smart phone apps are used to restrict movement of individuals during lockdowns and information to those who were in contact with confirmed cases. Other apps include 'tabaud' to track coronavirus spread, 'tawakklna' to track health status of users through coloured codes at highest degree of safety and privacy and 'tataman' used for isolation and quarantine. Besides, on-line medical consultations services through doctors at MOH hospitals are provided through 'seha' aps.

MENTAL HEALTH CARE SYSTEM IN KSA

In KSA, Ministry of Health (MOH) is the major providers of mental health services, with hospitals run by other government agencies deliver mental health services to their employees and families. The private sector also runs few hospitals and clinics offering services on fee-for service basis. Currently, KSA has 22 specialty psychiatric hospitals (19 in the public sector and 3 in the private sector); 1170 mental health care specialists (811 in MOH, 203 in other government agencies, and 156 in private sector); 4490 mental hospital beds (4105 in MOH, 187 in other government agencies, and 198 in private sector) [35]. The evolution of mental health services in KSA began with the establishment of the Taif Mental Hospital in 1952; subsequently another hospital was established in the city of Medina in 1960. Till 1980, these were the facilities available for treating mental illness in the Kingdom, and most of mental health services were delivered by expatriateconsultants[36, 37]. There were evidences of underutilization of mental health services, and evidences suggest that many patients sought care from traditional healers [38, 39]. In 1983, the government decentralized mental health services by establishing psychiatric hospitals at regional

levels including permission to set up psychiatric clinics in the private hospitals in the Kingdom [36].

In 2006, KSA approved a national mental health policy, which encompassed specialized programs for the elderly, children, adolescents, and people with addictions [37]. One of the greatest developments was the establishment of Saudi Arabian Mental and Social Health Atlas (SAMHA) in 2007, in line with WHO's Mental Health Atlas established in 2000 [38]. The major objective of SAMHA was to establish a national strategic plan for the development of quality mental health services in KSA through strengthening mental health infrastructure, increasing number of mental health providers, establishing continuing education programs and conducting research on mental health issues. In order to implement these plans, a Mental Health Act was passed by the government in 2012, which guides all policies and procedures for delivering mental health care delivery in the Kingdom [36]. Despite the increase in the number of psychiatric outpatient clinics at general and specialty hospital, a well-developed community mental health system (CMHS) was not developed, as most of the patients with serious mental health issues are treated in specialty hospitals and most of community mental health needs were met by doctors at primary health care centres. There are many barriers in primary health care settings with regard to detection and treatment of mental illnesses. Many times, patients present mental health issues mixed together with medical symptoms, or they often seek help from traditional or spiritual healers as they attribute the cause of diseases to the will of God [40].

In 2014, KSA passed its first mental health law by adopting many of the international standards recommended by the WHO which sets out definitions of mental illnesses, qualifications of care providers, standards for treatment facilities and rights of patients and their relatives [37]. Although the legislation does not adequately meet the standards promoted by the WHO including establishment of an autonomous review body, but it had achieved key milestones in terms of budget allocation to mental health care and enhancing availability of mental health providers in the Kingdom [36, 37]. KSA allocates about 4% of national health budget on mental health care compared to less than 2% worldwide, which resulted in increased number of mental health infrastructure and mental health providers including psychologists, nurses and social workers with psychiatric qualifications has increased over a period of time [41]. Currently, KSA has 19.4 providers per every 100, 000 population, compared to the world average of 6.6. However, this rate is much below the average rate of 64.3 among high income countries [42] (**See Table 1**). A comparison of availability of mental health workers in the GCC countries reveals that number of mental health workers per 100, 000 population in KSA is far behind the member state Bahrain (**Table 2).**Currently KSA has a total number of 1172 mental health specialists employed in the public and

private sector hospitals, out of which public sector employs a total of 1016 specialists (811 in MOH hospitals and 205 in hospitals managed by other government agencies. Private sector employs only 13.3% of all mental health specialists in the country(**Table 3).**In terms of budget allocation within mental health care system, the Kingdom allocates a higher proportion of its budget (78%) to mental hospitals, which is comparable to the allocation in developing countries (100%), but higher than developed countries (44%). However, almost 93% of out-patient mental health visits are in the clinics of hospitals compared to an average of 47% in developed countries [42,43].

Table 1: Availability of mental health professionals per 100, 000 population in KSA and other regions

Category		World Bank Income group		WHO region		
	KSA	High	Low	EMR	EUR	Global
Psychiatrists*	1.3	13.1	<0.1	1.2	10.5	1.3
Other specialist doctors	1.4	1.5	-	0.2	1.4	<0.1
Mental health nurses	10.7	23.5	0.3	3.0	23.2	3.5
Psychologists	2.0	9.0	<0.1	0.8	4.6	0.9
Social workers	4.0	2.6	<0.1	0.5	0.8	0.3
Other mental health workers	-	14.6	<0.1	< 0.1	12.2	0.5
Total Professionals	19.4	64.3				

Source: World Health Organization (2018), Mental Health Atlas 2017 Member States Profile; World Health Organization Regional Office for the Eastern Mediterranean (2019) Mental Health Atlas 2017; World Health Organization Regional Office for Europe (2019) Mental Health Atlas 2017.

* Includes child psychiatrists. Other mental health workers include occupational therapists, speech therapists, any other paid mental health workers.

Abbreviations: KSA – Kingdom of Saudi Arabia; EMR –Eastern Mediterranean Region; EUR – European Union Region.

KSA has on an average 167 psychiatric beds per hospital, compared to average 44 beds across high-income countries, which indicates that available beds are concentrated in few large hospitals rather than large number of small hospitals as seen across high income countries [41,42]. WHO advocates integration of mental health care into primary healthcare system, with the goal of improving access to services and overall capability of health system to deal with mental health disorders [44]. In view of this, KSA provides training of general and primary healthcare physicians to enhance their ability to identify and treat mental

health problems at community level. Trainings were also introduced for psychologists and social workers to recognize emotional problems in the population; and for pharmacists to monitor the use of psychotropic drug use and educate patients about these drugs. Despite the progress made in training of primary care physicians, the detection rate at primary health care centres remains low [46]. Studies have also shown that primary health care doctors had missed up to 50% of patients with psychiatric problems [39].

Table 2: Availability of mental health professionals per 100, 000 population in the GCC countries

Category	KSA	Qatar	Oman	Kuwait*	Bahrain	UAE
Psychiatrists	1.3	2.9	1.7	2.6	5.98	1.7
Other specialist doctors	1.4	-	-	-	0.58	-
Mental health nurses	10.7	9.9	3.0	13.8	27.92	4.4
Psychologists	2.0	1.4	0.79	2.3	1.24	0.8
Social workers	4.0	0.1	-	0.7	1.46	0.4
Other mental health workers	-	3.8	-	0.2	1.31	0.1
Total	19.4	17.1	5.52	19.6	38.49	7.25

Source: Mental Health Atlas 2017 Member State Profiles -World Health Organization; * Mental Health Atlas 2011 – Member State Kuwait, World Health Organization.

Table 3: Distribution of Specialist doctors in the public and private sector hospitals in KSA

Category	Ministry of Health	Other Government Agencies	Private Sector	Total
Resident doctors	309 (83.3%)	50 (13.5%)	12 (3.2%)	371 (100%)
Registrars	335 (70.8%)	58 (12.3%)	80 (16.9%)	473 (100%)
Consultants	167 (50.9%)	97 (29.5%)	64 (19.5%)	328 (100%)
Total	811 (69.2%)	205 (17.5%)	156 (13.3%)	1172 (100%)

Source: Annual Year Book 2018Ministry of Health, Kingdom of Saudi Arabia

Until 1997, residency training in mental health care was not officially established in KSA. Since then, four year programs in psychiatry were initiated in Riyadh, Dammam and Jeddah with 6-10 residents every year [36]. By 2009, there were 700 psychiatrists, 1126 psychologists and occupational therapists working in mental health system [36]. By 2014, there were eight departments of psychiatry at various universities, although only three of them had residency programs. With the increase in demand for mental health care professionals, many universities have introduced undergraduate and post graduate training programs in psychology, and counseling. Further, many medical colleges offer post-graduate and allied health disciplines for nurses, psychologists, social workers and counselors [36,37].

MENTAL HEALTH SERVICES UTILIZATION IN KSA

Comprehensive information on prevalence of mental disorders and care seeking behaviour in the population is crucial for development of a national mental health plan. However, most of the information related to mental disorders in KSA were available from studies conducted at regional level or on special population groups. The first study based on a national sample was conducted by Al-Shammari and Al-Subaie among Saudi population of 60 years and above reported significant depressive symptoms among 39% of persons, with women representing a higher percentage (49%) compared to men (33%) [46]. Another study in the Kingdom reported that 87% of respondents were unaware about various mental health services available in the Kingdom [47]. While 50% were ashamed of seeking services for mental illnesses, 25% reported they would not avail such services. Regional studies of young persons have also reported relatively high rates of emotional symptomsparticularly among youth and school children[48,49]. Few studies have also examined the prevalence of emotional symptoms in health care settings including primary health care [39,50]. Studies have also found higher rates of undiagnosed, untreated mental illness in primary health care settings in the country [45].

Most of the previous studies on mental health problems have mainly focused on specific group of population like hospital patients, users of primary healthcare centres, students, region specific community samples in specific regions or specific problem. Prior to the Saudi National Mental Health Survey (SNMHS) conducted in none of the studies focused onthe prevalence of mental disorders in Saudi population. SNMHS was the first comprehensive and scientific survey of the prevalence of mental disorders from the Gulf Cooperation Council countries. This survey is a part of the World Mental Health Survey Initiative, undertaken in partnership with Harvard University in more than 30 countries with the objective to bridge the gap in demand for and supply of mental health services. This was a cross sectional community based psychiatric epidemiological household survey of Saudi nationals' age 15-65 years conducted between 2011-2016[51]. SNMHS shows that mental health disorders are highly

prevalent among more educated people (35%) and youth in the age group of 15-34 years (40%). Separation anxiety, hyperactivity, depression, social phobia and post-traumatic disorders are common across life time. Utilization of mental health services reveals that 8.9% patients with severe mental health disorders visited general physicians, 6.8% of patients availed treatment from specialists, 8.9% resorted to spiritual / non-medical treatment and 20.2% utilized any of these sources [52].

DISCUSSION

Good mental health state is fundamental to overall health and well-being of people. Mental health disorder is a significant public health problem and the social cost of mental illness due to its impact on physical health is extremely high for individuals, families, communities and the economy.KSA's commitment to provision of mental health services to its population is reflected in higher allocation (4%) of its overall health budget to mental health, while most countries spend less than 2% of their national health budgets on mental health. This allocation is higher than the budget of 0.61% and 3.1% of health budgets by Qatar and Bahrain respectively [53,54].

About 34% of Saudi population suffers from a mental health problem some time in their lifespan, which is compatible with developed countries like New Zealand (39.3%), France (37.9%) and Netherland (31.7%) [52]. However, the prevalence is found to be higher (40%) among youth populationin the age group of 15-34 years, which is higher than countries like Australia (26%) and average for European countries (13.7%). Studies have revealed that children, adolescents, old people were more vulnerable during the pandemic and mental health burden is likely even higher for those with pre-existing health problems. A survey across 13 countries during the lockdown showed that more than 90% of children and adolescents developed emotional symptoms; and 71% reported feeling isolated, concerned about their future and loss of social connections due to closure of educational institutions [55]. As most of mental health disorders develop in early life, and students with such problems are likely to have adverse academic performance, it is essential to conduct training programs for teachers in mental health issues along with provision of appropriate mental health resources to schools for healthy development in children [56]. Organizing online entertaining and cultural programs including storytelling, music, drawing, painting, humour and magic have proven as effective interventions to reduce psychological burden among children during the pandemic [57].

Health care providers, particularly nurses and frontline workers have higher risk of infections due to the frequent close contact with patients and long hours of work. Compared to other health providers, they are at higher risk of developing stress, depression and anxiety; and are also scaredof transmitting the virus to their family members [58]. In KSA, studies during the pandemic also revealed that nurses were more vulnerable to Covid-19. Another study has shown that lack of physical activities and divorced or widowed

status are likely to increase anxiety and depression [59]. Shift timings also reported to be a reason for depressions and anxiety [60]. The anxiety was higher for people who had contacted with Covid-19, who were quarantined, having chronic health problems. Other factors like shortage of medical equipment, chances of infecting family members, coping strategies and support system [27,61]. A study among Chinese nurses shows that over-commitment to the job, unfavorable nurse-patient relationship, and lower rank are likely to increase the risk of developing mental distress [62].. Anxiety and psychological disorders among young health professionals are higher, therefore they should be provided with adequate time for rest, protective equipment and psychological skills training for dealing with the emotional problems of patients.

Non-treatment for mental disorders has become a major challenge in KSA. SNHMS revealed that a majority of people (80%) with mental health problems do not avail any treatment for mental disorders [52]. The causes for low treatment seeking behavior highlighted by studies include low awareness on treatment facilities, low perceived need, attitudinal and access barriers. There is unmet need for treatment of mental disorders as majority of those who have perceived need (98.9%) reported attitudinal barriers [63]. Therefore, it is paramount to address poor mental health literacy and improve the knowledge and awareness about various symptoms of mental disorders and facilities for treatment of mental disorders among the people. SNHMS also shows that 8.9% of Saudis with severe mental health disorders seek treatment from a religious or non-medical healer. The acceptance of traditional healers is high among people with low education level, and those with lack of knowledge and awareness about various symptoms of mental disorders, their consequences and method of treatment [64-65]. A recent study in Southern region of KSA also showed 55.3% of respondents had poor knowledge related to mental health issues, while only 3.6% of them have a positive attitude toward people with mental health problems [66].

Another challenge is the non-availability accurate information on mental health providers including psychiatrists, psychologists, mental health care training received by nurses and social workers in the Kingdom although such information is critical for planning training programs necessary to meet the mental health care needs of the population. In KSA, the ratio of mental health workforce to population has improved over the last few decades, but the increase is not remarkable while comparing with some GCC countries. Currently, KSA has 19.4 mental health providers per 100,000 population, the corresponding figure for Bahrain is almost two times (38.49). Likewise, number of psychiatrists per 100,000 population of KSA (1.3) is much below compared to Bahrain (5.9), Qatar (2.9), Kuwait (2.6), Oman (1.7) and UAE (1.7). Another challenge is the uneven allocation mental health resources across various regions in KSA. There is high concentration of mental health resources in cities like Riyadh and Jeddah. While Riyadh

region has 168 mental health specialists per 100,000 population the corresponding figure for regions like Qunfudah (1), Bishah (13), Qurayyat (14), Al-Jouf (15) are negligible. Likewise, regions like Riyadh (700) and Taif (670) have a higher number of mental hospital beds per 100, 000 population compared to none in Bishah and Qunfudah. About two-thirds of all mental health specialists in the Kingdom's private sector (156), is concentrated in Riyadh (60) and Jeddah (39) respectively [35].

With regard to mental health education, in the past, psychology was not a preferred specialty by medical students. A study by King Khalid University found only 2% of students was planning to pursue a career in psychiatry, with females outnumbering male students [67]. Until 1997, there was no residential training program in psychiatry in the Kingdom, and this year a 4 year program was established in three cities Riyadh, Jeddah and Dammam with 6 to 10 residents per year. By 2014, there were 8 psychiatry departments in universities in KSA [36]. In order to practice in the Kingdom, these residents after their graduation have to pass the psychiatric board exam [68]. Despite increase in number of residency programs, sub-specialty programs in psychiatry remain under-developed and apart from trainings provided by the Saudi Commission for Health Specialties, a few Saudi specialists' availed fellowship training in psychiatry from western countries mainly US, Canada and UK. However, the effectiveness of these trainings in providing mental health services in the existing socio-cultural and religious context of KSA remains unclear. In view of these challenges, more realistic mental health workforce development strategies need to be formulated by the MOH, which should address the future requirements, appropriate mix of mental health providers and imbalances in distribution across regions.

Although mental health research has received special attention as a national research priority, but in terms of number of research, KSA still remains far behind most of the developed countries. Out of the total number of 52699 research publications related to medical specialties published from 1975 to 2017, only 670 (1.3%) were related to mental health issues [69]. There could be number of reasons for this state of affairs including lack of funding, attitude of faculty towards research, perception about obtaining funding, teaching load and administrative responsibilities. More emphasis should be given on research in mental health problems, particularly in determining the social, demographic, behavioral factors that affect mental disorders in the future, for which there is a need for simplifying research grant procedures, financial incentives for conducting research, professional development in psychiatry research. Emphasis should also be given on longitudinal research studies with the aim to follow up patients with mental disorders, and for evidence based interventions.

Evidences suggest that an effective health care system with adequate preparedness for providing timely and accurate information related to the pandemic can reduce the level of stress, depression and anxiety. Availability of trustworthy health providers

is likely to reduce risk of infecting Covid-19 as they provide adequate information about the diseases and appropriate precautionary measures. Further, countries providing digital treatment and prevention services are likely to reduce the exposure to Covid-19 at health facilities. China used social media platform to share all communications related to the pandemic, including psychological counseling services for those in need of such services. Application of artificial intelligence during the pandemic play a major role in early warning, prediction and detection of disease outbreak, spread of disease, and quick treatment decision[70].

Saudi Vision-2030 embarks on digital transformation in all spheres of activity including health care. Technology and digital inventions played a crucial role in delivering services during Covid-19 pandemic. In order to enable provision of services during the pandemic, the government, in partnership with private sector, has launched 19 apps and platforms. In this context, MOH should make use of artificial intelligence in incorporating various data sources during future pandemic needs to be explored. Besides, introducing e-mental health solutions, it is also important to explore the provision of safe and effective e-treatments by specialists to patients at home. Internet-based interventions can be successfully implemented to prevent or treat mental health disorders, especially among adolescent age group considering their familiarity with digital applications.

Mass media including social media is a powerful tool that spread misinformation and promotes fear and confusion among the public to stay safe; hence, the government is bound to control the spread of such misinformation including myth and misconceptions about the pandemic and share credible source of information related to the pandemic using appropriate media. False reporting of information and opinion on mental health issues often influence stigma and significantly influence the perception of people with mental health problems, particularly, societies where social and religious norms play a key role. In the context of KSA, there is need to improve media coverage related to mental disorders in the Kingdom, for which programs need to be designed, implemented and evaluated. Anti-stigma campaign and evidence based mental health education programs should be implemented. Awareness campaign and mental health education to service providers is likely to shift the landscape of mental health care in KSA. Implementation of special interventions to improve mental well-being of risk groups such as females, people living alone, people suffering from chronic diseases, and health care providers are necessary.

Global evidences suggest that primary care provide wide range of support to people affected with mental disorders. However, the present primary health care system in KSA does not serve the interest of people with mental disorders due to significant gaps in mental health services which do not meet the requirements of population, particularly, children, adolescents and old people. The potential increase in demand for mental health care due to Covid-19 has further

widened this gap, which results in increased pressure on both primary care and mental health services. Although, there has been a clear direction for improving mental health care services by primary health care facilities, but notable progress has not occurred in this direction. Saudi vision-2030 provides an opportunity to develop a more comprehensive strategy to meet the mental health care needs of the community by integrating mental services into primary health care which can address the significant gaps and challenges in delivering mental health services to all segment of population.

Enhanced access to mental health care needs of population in KSA should be a primary goal of the policy agenda. Government should consider building an effective system for national emergency preparedness for future pandemics with more emphasis on training, research and capacity building in public health emergencies, for which a legislation or act to deal with pandemic like Covid-19 is the need of the hour. The policy should also stimulate private sector's participation in emergency management during the pandemic. There is also a need to include public health and emergency management in policies of non-health ministries and involve themin the development and implementation of policies related to pandemic control. The present mental health care system in KSA has demand-supply gap. Innovative solutions to improve access to mental health care, such as e-mental health strategies, collaboration with private sector, risk prevention strategies to make optimal use of health resources are required. Strategies like task shifting, primary health care based interventions, and use of non-medical health workers to treat depression in primary care setting are helpful.

Conclusion

Mental health disorders are a key public health challenge in Saudi Arabia. The Covid-19 has affected psychological health and well-being of population of all ages including health providers. Existing studies provide evidences of non-treatment for mental disorders, poor utilization of mental health resources, non-availability of accurate information on providers, regional imbalances in distribution of mental health resources and lack of primary health care approach to mental health care. In view of increasing burden of mental health problems, KSA needs to identify requirements of mental health care providers in different regions, long term plan for development of mental health care professionals, skill development of existing workforce, encouraging medical students to take up psychology as specialty, encouraging research on mental health issues and evidence-based interventions.Further, innovative strategies need to be developed to meet the mental health care requirements of population, as per the existing socio-cultural and religious context.

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