

Mental and Social Health Atlas: An Update, Ministry of Health, Saudi Arabia, 2015

Abdulhameed Abdullah Al-Habeeb¹, Basmah Abdulaziz Helmi¹
and Naseem Akhtar Qureshi^{2*}

¹General Administration for Mental Health and Social Services, Ministry of Health, Riyadh, Saudi Arabia.

²National Center for Complementary and Alternative Medicine, Ministry of Health, Riyadh, Saudi Arabia.

Authors' contributions

This work was carried out in collaboration among all authors. All authors designed the study and wrote the protocol. Authors NAQ and AHAH performed the statistical analysis, managed the literature search and wrote the first draft of the manuscript with assistance from author BAH. All authors read and approved the final manuscript.

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ABSTRACT

Background: Mental health (MH) is an extremely integral component of health and accordingly there is "no health without mental health".

Objective: Based on the concept of World Health Organization (WHO) Mental Health Division Model, this paper updates to the previous published Mental and Social Health Atlas 2007-2008, Ministry of Health (MOH), Saudi Arabia.

Methods: Besides reviewing the MOH health and statistical documents and social reports of Ministry of Social Affairs (MOSA), relevant data was collected from all mental health and social settings using predesigned semi-structured formats.

Results: Over a period of seven years, several gaps earlier found in mental health systems (MHS) were bridged. The infrastructure and human resources developments in line with national MH

*Corresponding author: E-mail: qureshinaseem@live.com;

planning were regularly monitored in order to successfully implement the projects tailored to meet the needs of people with psychiatric disorders and their caregivers.

Conclusion: Overall, tremendous progress has been made in several components of mental health systems, which include infrastructure, human resources, clinical and community services, continuing medical education, legislation and governance, health promotion and research. There is persistent need to further improve mental health systems in Ministry of Health related to community mental health, forensic psychiatry, child and adolescent psychiatry, geriatric psychiatry, addiction, promotion and preventive services, governance and finances, research and training of mental health professionals across the Kingdom of Saudi Arabia.

Keywords: World Health Organization; mental and social health; national planning; mental health systems; research and training.

ABBREVIATIONS

MH=Mental Health; MOH=Ministry of Health; KSA=Kingdom of Saudi Arabia; MOSA=Ministry of Social Affairs; WHO=World Health Organization; MHS= Mental Health Systems; MHA=Mental Health Atlas; CMHAP= Comprehensive Mental Health Action Plan; MHSS= Mental Health and Social Services; MHSA= Mental and Social Health Atlas; GAMHSS =General Administration for Mental Health & Social Services; EMRO = Eastern Mediterranean Regional Office; MHA=Mental Health Act; CMHC = Community Mental Health Care; PHC = Primary Health Care; ID = Intellectual Disability; MCH = Maternity and Children Hospitals; NSP=National Strategic Plan; CLP=Consultation Liaison Psychiatry; CNS = Central Nervous System; MHIRS = Mental Health Information Reporting System.

1. INTRODUCTION

In the year 2000, World Health Organization (WHO) Mental Health and Substance Abuse Division launched World Mental Health Atlas (MHA) with the purpose of compiling and synthesizing mental health (MH) data from each member state of the WHO [1-5]. WHO identified mental and social health needs of mental patients and accordingly recommended ways for stepping up services and improving the conditions of mental patients and their families and caregivers [6]. WHO emphasized that unmet needs of psychiatric populations are larger globally but relatively more in low and middle-income countries. There is a lot to improve from infrastructure to all forms of resources for serving the most neglected psychiatric population of the world. WHO has updated mental health data in year 2005, 2011 and 2014 and accordingly published three Mental Health Atlases [2-4]. WHO also developed Comprehensive Mental Health Action Plan (CMHAP) [2013-2020] that is an ideal tool to gauge the progress of mental health and social services of different member states across the world. The CMHAP has well defined four objectives, action plan targets, indicators and service development indicators / outcomes [7].

1.1 Specific Goal and Rationale

In line with previously published Mental and Social Health Atlas, 2007-2008, and situational

analysis of regional mental health data [8,9], this research paper updates the information on mental health systems [MHS] of Ministry of Health, Saudi Arabia, from 2009 to 2015. The specific goal of this atlas is to describe the current state of the art of mental health and social services [MHSS] in the Kingdom of Saudi Arabia [KSA]. The rationale of Mental and Social Health Atlas [MHSA] is to collect, synthesize, and distribute the data with subsequent follow-up evaluations. This is compatible with updated national strategic plan for MHSS outlined by General Administration for Mental Health & Social Services [GAMHSS] (available from AHAH upon request), MOH. This comprehensive update (2009-2015) will guide health authorities to plan and develop additional services in future for meeting the specific needs of psychiatric patients and their family caregivers in the country.

1.2 Data Collection

Two semi-structured data sheets, designed for collecting relevant information from mental health settings in MOH were faxed to each regional psychiatric hospital and de-addiction units. Any missing information in returned data sheets was completed by a social worker on telephone. In addition, MOH latest documents such as Statistical Yearly Reports, Health Indicators and other regularly published materials were also screened for collecting related data on mental

and social health. Data were also abstracted from published materials of Ministry of Social Affairs [MOSA] that collaborates with MOH in delivering integrated mental and social services to targeted population especially juvenile population with intellectual disabilities and behavioral disorders.

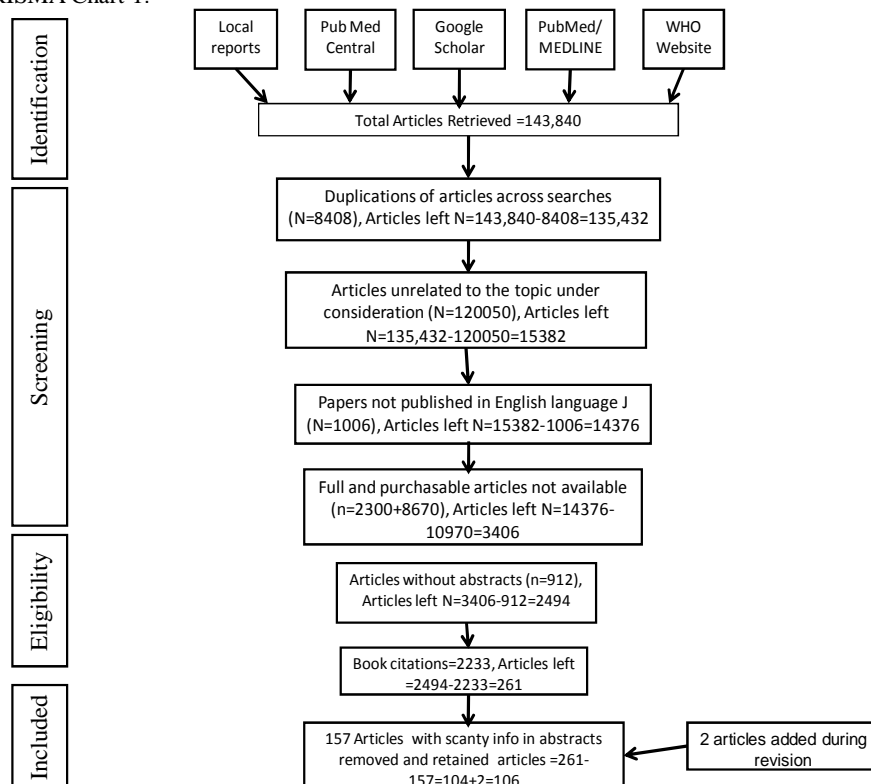
1.3 Ethical Consideration

Under the supervision of two authors (AHAH & NAQ), current data was collected using semistructured sheets from all mental health hospitals, and psychiatric clinics based in general hospitals and primary healthcare centers having psychiatric clinics and other related settings including addiction centers in Saudi Arabia. All managers of these facilities complied with the request of AHAH, Director General of Mental Health and Social Service, Ministry of Health to collect specified data and returned duly filled data sheet to his office in Riyadh. There were no patient participants in this study. This is a risk free study.

1.4 Literature Search

Computer searches (2000-2015) of PubMed / MEDLINE, PMC, Google Scholar and WHO website were also made using mental health atlas as the keyword in order to support our strategic plans, mental health services development, infrastructural and human resources development, and comparison with global mental health statistics. As a corollary, a total of 143,840 references were retrieved. References without abstracts [n=912], articles purchasable and not accessible, [n=8670], published in non-English literature [n=1006], full articles not available [n=2300], article duplications [n=8408], unrelated to the topic [n=120,050], and book citations [n=2233] were excluded from this study. Thus, 261 references were retained for further review. Two of us [NAQ & AHAH] reviewed these articles [n=261] and excluded 157 references due to scanty information available in abstracts. Both of agreed to retain only 104 articles in this work. Two sources of information were added during revision of this paper [total references=106] [Prisma chart 1].

PRISMA Chart 1:



2. RESULTS

2.1 Elements of MHA

Previously we have described several components of mental and social health atlas [8] and this research paper will provide an update on mental health systems followed by a brief description of newly developed programs, and discussion, opportunities, challenges and possible directions and strategies. Notably, Eastern Mediterranean Regional Office (EMRO) countries (21 out of 21, 100%) have reported to WHO on core mental health indicators compared to global (171 countries out of 194, 88%) [4]. However, 5% of EMRO countries did not compile mental health data over the last two years compared at global level (19%) [4]. Overall, EMRO countries follow seriously the WHO mental health initiatives, action plans and programs.

2.2 Mental and Social Health Services

Beginning from the year 1952, twenty mental health hospitals with 50 to 200 bed capacity were opened regionally to meet the needs of psychiatric population in Saudi Arabia. Eighteen projects were approved over a period of the last 10 years and seven of them are completed and operating with full capacity. Three new psychiatric hospitals, each one in Hafr Batan, Dawadimi and Yanbu and three mental health and Addiction hospitals in Riyadh, Kherj and Makkah are under developmental stage. Notably, eight of mental health hospitals are now integrated based on the principles of hybrid model, which means they have combined facilities for the purposes of diagnosis, treatment, outcome and research and will serve simultaneously population with mental and addiction problems in the same settings [10,11] (Table 1). There will be eight integrated mental health and addiction hospitals when all projects are completed over the next 5 years or so. Earlier, there were only four addiction hospitals with two hybrid model serving patients with addictive and mental disorders in KSA [8]. This may suggest increasing problems of alcohol and drug abuse as also shown worldwide [12]. At global level, alcohol and other drug abuse have multiple implications including increasing violence, suicide and homicide, physical diseases, burden of disease, non-adherence to medications, and others and researchers have called for targeted policies and program development to reduce harms associated with

drug addictions [13]. At present, 21 mental health hospitals are fully operational and related six projects are under developmental stage. So there would be 27 mental health hospitals in near future in Saudi Arabia, an increase of 7 hospitals (35%) over 10 year period. Notably, the mental health system in Saudi Arabia has been developed on the basis of increasingly emerging MH and addiction problems rather than based on classical epidemiological research based evidence, and this simply fits into a demand-supply model. Saudi National Mental Health Survey is underway since 2009 and soon it will provide important epidemiological insights into mental disorders that will guide further development of mental health services in Saudi Arabia. Overall, the development of comprehensive MH systems is the first step to provide easy access and good quality care to patients with MH problems.

2.3 Mental and Social Health Policies

All mental health hospitals use independently their own policies and procedures. In addition, quality assurance manual with job descriptions of all staff are also used in all mental health settings. With the support of expert mental health professionals, GAMHSS has been revising mental and social health policies collated from all psychiatric settings for better uniformity across all hospitals. The currently revised manual approved by health authorities has been distributed in all psychiatric and addiction hospitals. At global level, a lower portion of EMRO countries have standalone policy/mental health plan (n=14, responders=67% versus global, n=131, 77%) [4]. This manual includes five main items including national quality indicators. The detailed description of this manual (available upon request from AHAH) is beyond the scope of this MSHA. Evidently, mental health policies and procedures streamline and impact mental health services including diagnostic, access to services, service equality, human rights and coordination, treatment, outcome, legal and law, prison services, quality, finances, insurance, programs development, and training and research [4, 14-17]. It is wise to know that research and policy development have reciprocal relationship [18,19] and both have complementary implications and impact on mental health systems. It is time that priority should be given and hence development of related policy to translate traditional model of services to patient-centered services and patient-oriented research in order to deal with individual needs of consumers with goal-directed recovery

and outcome [20,21]. Mental health and social policies are essential elements underlying mental health system working mechanisms, which help in providing complete set of related services to patients with MH and social problems.

2.4 Mental Health Legislation

Regulatory measures and protocols are in place in all mental health and addiction hospitals for preventing several types of violence and suicide, which are the two major public health problems encountered globally especially in mental health settings [22-24]. However, there was a major regulatory vacuum created by non-availability of Mental Health Act (MHA) in the KSA. A proportion of EMRO countries (n=21, 10%

versus globally, n=165, 31%) have fully implemented the mental health legislation [4], and Saudi Arabia has launched MHA after its approval by the Council of Ministers (Table 2), which is sensitive to its unique socio-cultural and Islamic values. Human Rights Act and Mental Health Act/Legislation is reported to subserve various functions including preserving mentally ill patients' rights and improving morale of mental health staff, infrastructure and human resources service development, delivery of better quality in- and out-patient services, insurance coverage and parity for people with severe mental disorders and substance abuse and efficient governance [4,25-27]. Finally, mental health legislation is a powerful tool and beneficial both to MH providers and users.

Table 1. Distribution of Mental Health Hospitals in the Kingdom of Saudi Arabia

Sr. no	Name of the Hospital	BC	CBC	Remark
1	Taif Mental Health Hospital	690	500	Operational
2	Medina Psychiatric Hospital	200	200	Operational
3	Buraidah Psychiatric Hospital	145	200	Operational
4	Al-Hassa Psychiatric Hospital	100	150	Operational
5	Al-Jouf Psychiatric Hospital	100	100	Operational
6	Abha Psychiatric Hospital (Asir)	100	400	Operational
7	Hail Psychiatric Hospital	60	200	Operational
8	Najran Psychiatric Hospital	50	200	Operational
9	Baljurashi Psychiatric Hospital	100	200	Operational
10	Al-Hudood alshimaliya Psychiatric Hospital (Arar)	100	100	Operational
11	Jazan Psychiatric Hospital	100	200	Operational
12	Al-Qurayat Psychiatric Hospital	100	100	Operational
13	Makkah Psychiatric Hospital (Jeddah)	128	250	Operational
14	Tabuk Psychiatric Hospital	50	200	Operational
15	Hafar Al-Batan Psychiatric Hospital	50	200	Operational
16	Beesha Psychiatric Hospital	50	50	Operational
17	Al-Qaseem Psychiatric Rehabilitation Center (Addiction)	50	50	Operational
18	Riyadh Al-Amal Psychiatric complex (integrated)	625	625	Operational
19	Dammam Al-Amal Psychiatric complex (Integrated)	300	600	Operational
20	Jeddah Psychiatric Hospital – Al-Amal Psychiatric Hospital (Integrated)	200	250	Operational
21	Psychiatric section in king Abdulaziz Hospital, Makkah	30	30	Operational
22	Kherj Psychiatric & addiction Hospital (Integrated)	-	200	Project
23	Riyadh Al-Amal Psychiatric complex (Integrated)	-	500	Project
24	Al-Amal Psychiatric Hospital Holy Capital City Makkah (Integrated)	-	500	Project
25	Jeddah Psychiatric & addiction Hospital complex (Integrated)	-	500	Project
26	Al-Duwadimi Psychiatric Hospital	-	100	Project
27	Yanbu Psychiatric Hospital	-	300	Project
Total	27	3328	6905	

Table 2. Summary of mental and social health policies and budget provision in Saudi Arabia 2015

Theme – Policies					
MH policy	Substance abuse policy	National MH program	MH legislation	Program for special population*	Annual reporting system
Yes	Yes	Yes	Yes	Yes	Yes
Theme- Budget provision					
Specified budget for MH	Payments tax- based	Out of pockets			Disability benefits
Not specified	No	Yes, only in buying drugs if not available in public facilities			Yes

*MH = Mental Health, *for elderly population (Under development process)*

2.5 Mental Health Budget and Financing Mechanisms

Evidently, yearly budget for MOH has been on the increase and 62.34 billion Saudi Riyals is for the year 2015. No finances are earmarked separately for GAMHSS and hence it is rather difficult to present ‘time-year/budget to mental health’ trend. This does not match with Ministries of Health of other Eastern Mediterranean Regional countries. A proportion of 62.2% to 92.6% of those countries specify independent budget for mental health (4). GAMHSS forward all mental health hospitals budget to financial department through Assistant Deputy Minister for Curative Medicine. We have requested financial authorities for a separate budget for GAMHSS. Now many mental health and addiction hospitals are supervised by MOH autonomous organization, and they have their own budget and financial working mechanisms. Researchers have called for investment in mental health especially at community level in low- and middle-income countries, which have the highest burden of mental disorders, and inequity in resources distribution in mental health. Unlike high income countries, focus has been on mental health institutions rather than community services development in low- and middle- income countries. In addition, there is inefficiency in the use of resources that include allocative and technical inadequacy in financing mechanisms and interventions. Beside other policy levers, finance and payment help in the implementation of mental health reforms [19,28]. This scenario does not fit into high-income countries like Saudi Arabia where there is no scarcity of funds for mental and social health development. In summary, a separate budget is call of the time in light of increasing MH and addiction problems not only in Saudi Arabia but also those countries

which do not allocate independent budget for MH provision.

2.6 Community Mental Health Care (CMHC)

Though there are limited CMHC services for mentally ill patients in the KSA, the scenario has been constantly changing. The private psychiatric sector is establishing out- and in-patients MH services in psychiatric and general hospitals and polyclinic centers but with limited admission facilities for nonviolent patients. CMHC comprised of community-based residential and non-residential services in non-hospital domiciliary setting and has multiple components [29] (Table 3). Like PHC model, CMHC centers provide a variety of therapies for mentally ill patients including referrals to specialized hospitals, and counseling. CMHCs tend to reduce stigma and are associated with judiciously increased consultations at community level not only of elderly patients with depression symptoms [30] but also followup of patients with chronic mental disorders. Conversely, CMHC centers are not fully equipped to meet all needs of clients with and without intellectual and developmental disability, and clients with addictions and physical disorders [31] and scaling up such services at CMHCs is needed. From another perspective, lack of CMHC services is the main reason for a vast majority of chronic patients in mental hospitals and hence a priority to develop CMHC not only in Saudi Arabia but also other EMRO countries [32]. This can be achieved by establishing CMHC centers, hybrid model-based PHC services, residential houses, day care units, rehabilitation centers, case management programs, and others [33]. In similar tones, Institute of Health Economics Consensus Statement, Alberta Canada,

regarding improving mental health transitions [2014] advocated to deliver multiple effective community oriented services including support systems and primary healthcare to patients with severe and persistent mental illness [34]. According to some researchers, WHO initiative-global mental health- may be achieved through community-based practice and research compatible with sociocultural structure of the respective country [35]. The standard community MHS needs to contain the following 10 community support components as envisaged by National Institute of Mental Health; responsible team, residential care, emergency care, Medicare care, halfway house, supervised / supported apartments, outpatient therapy, vocational training and opportunities, social and recreational opportunities and family and network attention [36]. Voluntary organizations and self-help groups should also be established. MOH has formed “National Committee for Caring Psychiatric Patients and their Families” with coordination center in GAMHSS along with regional committees. Furthermore, a national committee is also established for promotion of mental health in Saudi Arabia (a review paper on CMHC services is forthcoming soon). Overall, the establishing of CMH services has many advantages; most importantly it dilutes the social stigma attached to mental health and addiction problems.

2.7 Mental Health in Primary Care

There are more than 2259 primary health care (PHC) centers (from 1925 in 2007-2008, an increase of 17.4%) in the KSA [37]. Following the

evidence-based recommendations of WHO to integrate MH into PHC, there have been substantial developments globally for delivering MH services at PHC and in schools as well with better outcomes [38]. This service expansion was essential because, among other reasons, of relatively high magnitude of MH problems, especially depression and anxiety disorder at PHC [39]. Besides other mechanisms for this integration [40], training of general practitioners (GPs) in clinical psychiatry was considered the most significant step. Integration of MH into PHC has many advantages including reduced stigma for MH patients and their families, social integration and improved overall capacity of the healthcare system to deal with mental health problems [40]. Therefore, psychiatric courses for GPs were organized regularly at regional as well as national level together with training of trainers (Table 4). Some related studies were published in national and international medical and academic journals [41-43]. Despite all this, MH services at PHC are still very limited in Saudi Arabia. Trained GPs treat only minor mental disorders by counseling and difficult cases are referred to secondary level and hence they may require an advanced and long-term mental health-training course, focusing on the practical application of identifying mental illness among PHC patients [44]. The new integrating and training strategies on our agenda include mental health promotion, relapse prevention, long-term followup, and early detection and intervention of mental disorders at PHC compatible with international clinical guidelines [45], by introducing some suitable screening scales which are useful in early detection of mental

Table 3. Characteristics of community-oriented care

<ol style="list-style-type: none"> 1. A focus on population and public health needs. 2. Early case finding and detection in the community. 3. Locally accessible services (i.e., accessible in less than half a day). 4. Community participation and decision-making in the planning and provision of mental health care systems. 5. Self-help and service user empowerment for individuals and families. 6. Mutual assistance and/or peer support of service users. 7. Initial treatment by primary care and/or community staff. 8. Stepped care options for referral to specialist staff and/or hospital beds if necessary. 9. Back-up supervision and support from specialist mental health services. 10. Interfaces with NGOs (for instance in relation to rehabilitation). 12. Networks at each level, including between different services, the community, and traditional and/or religious healers. 13. Services nearest to the home and cost-effective
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Table 4. Types of mental and social health care provision, beds and human resource in Saudi Arabia: (year 2015)

Theme – Community services				
Community based-care	MHC in PHC – training & facilities	Therapeutic drugs policy/essential list of drugs		
Limited	Yes, and only referral of patients & counseling	Yes, in place and available		
Theme- Beds and human resources				
*Psychiatric bed, n=4805 and 6905	**Qualified Psychiatrist n=718	**Psychiatric nurse, n=3364	**Psychologist n=424	**Psychiatric social worker N=655
1.6 and 2.3	2.43	11.36	1.43	2.2

MHC= Mental Health Care, PHC= Primary Health Care

*Per 10,000 population and includes psychiatric and addiction beds, ** per 100,000 Saudi Arabia population (Total population of Saudi Arabia =29,612,358)

disorders linked with early intervention and better outcomes [46-49] and will be used by trained MH professionals at PHC. Screening patients with psychiatric problems in PHC is itself a highly important clinical exercise associated with early detection of MH cases and proper referral to secondary level based on the severity index and complexity of the problem.

2.8 Psychiatric Beds

There are 4805 beds (increased from 2886 in 2007-2008, 66.5%) beds in 21 psychiatric hospitals in the KSA and another 2100 beds will be added once 6 other mental health hospitals become operational within the next few years (an increase of 139%) (Table 4). When all MH hospital projects are completed within the next few years (Table 1), the total number of beds would be 6905. The current bed occupancy, i.e., total number of inpatients/number of beds x 100 in most psychiatric hospitals is more than 100% throughout the year; however the ideal figure should be 85% and there are already tested models such as queuing and evolutionary computation which improve hospital bed occupancy and resource utilization [50]. The high bed occupancy is indeed a source of many problems such as deprivation of services to needy patients and overload on staff and attributed to a number of factors including high readmission rate, involuntary admission, long-stay of patients and diversion rate [51]. Taking Saudi population to be 29,612,358 [52], the bed/10,000 population is 1.6. However, within the next 5 years the total number of beds in 27 psychiatric and addiction hospitals would likely to reach 6905 and correspondingly the bed/10,000 would further increase to 2.3/10,000. The trend to establish additional beds in general and

specialist hospitals may start soon. Finally, it is perceived that the proper management of psychiatric beds, available in adequate numbers, solves diverse psychosocial problems not only of mentally ill patients and their caregivers but also healthcare providers, hospital managers and health policy makers.

2.9 General Hospital Psychiatry

There are a total of 415 governmental general hospitals including MOH hospitals and 127 private hospitals in Saudi Arabia [53]. There are now 99 mental health clinics in general and specialist hospitals, which mean 55 psychiatric clinics added over a 7-year period. These outpatient psychiatric clinics in 84 MOH hospitals spread over 20 regions/ governorates and work on the principles of consultation-liaison psychiatry [54]. In year 2014, 11,214 new patients visited these clinics where as the number of repeat visits was 50,461, which reflects that general hospitals share a great burden of psychiatric patients who often present with multiple physical and somatic symptoms reflecting complex problems and multimorbidity [55]. However, there are no fixed beds for patients requiring admission in MOH general and specialist hospitals; however these hospitals provide short transits for acutely serious mentally ill patients to be kept under observation for few days as also suggested by some researchers [32]. We project that more psychiatric clinics would be added to general and specialist hospitals in future. A fixed quota for beds required for temporary admission of mentally ill patients with multimorbidities, violent behavior and suicide intentions needs to be established in general and specialist hospitals [56]. From the perspective of emergency services in integrated

centers, it is reported that most frequent visitors to emergency departments have alcohol-related problems rather than mental health or other drug-related diagnoses and they also need special care and services [57].

2.10 Human Resources

Over the past seven years, there is progressive increase in the number of the health providers and correspondingly the number of health consumers' in- and out-patient visits increased from 16605 and 310848 (year 2007) to 22064 and 508703 (year 2014), respectively. The total number of psychiatrists, psychologists, social workers and nurses per 100,000 people (total population=29,612,358 in 2015) in psychiatric and addiction hospitals has also increased, which is 2.43, 1.43, 2.2, and 11.36, respectively and comparable with global statistics (4) (Table 3). Generally speaking, there is further increasing, variable need of psychiatrists in all countries worldwide that could be met by retainment, training and recruitment [58]. However, their professional background may not be compatible with the concrete definitions of World Health Organization [1-3]. For example, like psychologists and social workers many nurses initially assigned in psychiatric and addiction hospitals do not have any experience in general and addictive psychiatry; however continuing medical education and training tends to enhance their pertinent knowledge and hence delivery of MH services with better quality and safety. Notably, most psychologists and social workers do not have post-graduation degrees and have very limited clinical orientation which further limits their contributions to clinical psychological services to needy patient population. Accordingly, psychologists and psychiatric social staff need advanced training and courses in academic universities that focus on extensive clinical exercises including assessment and treatment of patients including those trapped in natural disasters and victims of different traumas [59-62]. It is subsumed that the development and management of human resources is a skilled, dynamic art to meet the increasing demand of healthcare users in a satisfactory manner and continuous medical education and retention of staff, interalia, are two important tools to sustain human resources.

2.11 Programs for Special Population

The special populations include children and adolescents, elderly persons, and pregnant

women. Children and adolescents with MH problems such as developmental and behavior disorders, attention deficit hyperactivity disorders, physical and mental disabilities, child abuse and neglect and other conditions have special needs and require tailored, stepped up services in different settings including schools [63,64]. Health inequalities related to the special populations need to and could be addressed using innovative interactive atlas [65]. Interactive atlas is a powerful support tool for decision-makers, serving the long term goal of closing the gaps across sub-populations, in terms of prevalence of diseases, access to healthcare, treatments and health outcomes. Special programs and policies were developed to bridge the gap created by inequalities in mental health care. Therefore, Council of Ministers approved the National Program for developmental disorders (autism) and attention deficit and hyperactivity disorder vide numbers 227 and 4 dated 13/09/1423 Hijri (18 November 2002), and 4 dated 08/01/1430 Hijri (5 January 2009), respectively. This program has the following tasks; 1) to develop mechanisms for early detection and diagnosis of developmental and behavioral disorders in children and adolescents at national level, 2) to supervise and follow-up work in centers and clinics providing services to this population, 3) to train mental health personnel and recruit highly qualified professionals in child and adolescent psychiatry, 4) to develop strategic plan to activate the role of the Ministry of Health in the field of developmental and behavioral disorders, 5) to implement the plan and follow-up, 6) to organize campaign for the public awareness about developmental and behavioral disorders, 7) to explain in simple nontechnical language the nature of these disorders and focus on ways how to deal with these disorders, 8) to promote research for identifying epidemiological parameters including risk factors and preventive interventions, and 9) to create datasets and a National Registry of developmental and behavioral disorders. This National Program will target the following groups; 1) children with the above stated disorders, 2) families of children with those disorders, 3) professionals working in maternity hospitals' children clinics dealing with developmental and behavioral disorders, 4) professionals including doctors, specialists, psychologists, social workers, nurses, physical therapists, occupational therapists, and speech therapists consulting children in hospitals, and regional and governorate mental health treatment centers of the Kingdom and they will

provide relevant services to the consultees. The program will perform the following additional tasks: to develop treatment protocols for patients with developmental and behavioral disorders, 2) to develop referral system for transferring patients who require specialized services under the umbrella of Ministry of Education and Ministry of Social Affairs, 3) the preparation and development and codification of the diagnostic tools, 4) continuous medical education of concerned staff for professional building capacity, and 5) organize national and regional conferences and seminars (the copy of this program is available from AAH upon request). Our plan match with broad ideas of World Psychiatric Association plan for 2014-2017 tailored to address the needs of all age group population with psychiatric problems and also with another action plan tailored to address the mental health issues of youth in WHO European region [66,67]. At global level, Belfer reported that up to 20% of children and adolescents have a disabling mental illness, suicide is the third leading cause of death among adolescents, and up to 50% of all adult mental disorders have their onset in adolescence but resources as well as policy for child mental health care are scarce. Belfer called for bridging gaps in economic resources, policy and research, and training in child mental health worldwide [68]. In similar vein, mental health planners and researchers have been advocating research in MHS in order to provide and also scale up services for needy population since more than a decade [69].

Elderly people with cognitive impairments and dementias who often have multiple physical diseases require a variety of medications and psychosocial therapies and their caregivers also need supportive care [70-72]. The special protocol for serving population with cognitive impairment and dementias and their caregivers is underway and soon will be completed. There is a shortage of manpower in geriatric subspecialty and services are very limited. Geriatric patients with multi-comorbidities consult medical clinics and PHC and for behavioral problems, they are mostly evaluated by adult rather than geriatric psychiatrists in Saudi Arabia. The elderly patients rarely rejected by their families are admitted to geriatric homes related to Ministry of Social Affairs. In case of emergency, they are referred to the nearest general/specialist hospitals. Medical internist and psychiatrist also visit geriatric patients for regular follow-up. Geriatric homes create a milieu where family members frequently visit their patients in order to

circumvent solitude which has advantages and many disadvantages in aging demented population [73]. There is a priority need to develop geriatric services in the KSA. Specialist hospitals and medical cities such as King Fahad Medical City has especially tailored program including therapies for geriatric population.

The postpartum period is a risk factor for some women to develop depression, anxiety disorders, and acute toxic psychosis, therefore they need specialized psychiatric services and their children tend to develop different types of MH problems and require followup at least for 4 years [74-76]. The maternity and children hospitals (MCH) are integrated into MH hospitals through referral system. Postpartum patients with mental disorders are now examined by psychiatrists with appropriate treatment intervention. Notably, the population with depression and dementia will increase in the next 20 years with greater disease burden [77] and there needs to be proactive appropriate approaches including promotion of mental health through lifestyle changes, prevention of MH disorders, early detection and diagnosis, effective drug and non-drug interventions, and rehabilitation measures and a variety of supportive community services for serving patients with depression and dementia worldwide.

2.12 Rehabilitation and Day Care Centers

According to WHO-Intellectual Disability (ID) atlas, middle and high income countries which have a relatively high standard of living, persons with intellectual disabilities are very often denied the opportunity to enjoy the full range of economic, social and cultural rights [78]. In line with WHO agenda, services for persons with ID were developed in Saudi Arabia. There are 38 rehabilitation centers for patients with IDs including physical, all under MOSA, which also provides services to juvenile delinquents and orphans. Intellectual disability is a generalized disorder that involves impairments of mental abilities that impact intellectual functioning and adaptive behavior, such as reasoning, learning and problem-solving skills. People with mild / moderate IDs having behavioral problems are managed in 69 day care units with follow-up visits. Among day care centers, 10 are run by the government and 59 by private sector. The children with severe/profound IDs are mostly institutionalized in Rehabilitation centers/juvenile care homes; however they are visited regularly by their parents. Depending on behavioral

oddities and co-morbid conditions, the patients are prescribed psychotropic drugs, antiepileptic medications, and psychological and social interventions [79]. Financial budget and support is available from MOSA for these centers. The rehabilitation and day care centers have sufficient technical and administrative personnel working harmoniously with psychiatric and medical centers for managing patients with excitement and acute medical problem. Mostly, disturbed patients are temporarily admitted to psychiatric ward. Psychotropic drugs for chronic inpatients in rehabilitation centers are supplied by Ministry of Health. Both the rehabilitation center and day care unit staff deal with outpatients impressively with additional counseling and education to comfort caregivers. Many tailored programs for them include carpentry, electrical, binding, sewing, agriculture, painting, computer and electronic central [80,81]. It would be wise to explore the attitudes of health providers and public towards children with IDs, which will help in further planning innovative services in terms of social inclusion and integration and community participation [82-84]. Overall, people with IDs and behavioral/physical problems are complicated cases and require multipronged, coordinated services.

2.13 Chronic Patients in Mental and Addiction Hospitals

The number of chronic patients in mental and addiction hospitals remains more or less same. A patient with a psychiatric disorder staying more than 6 months in the hospital was considered a long-stay patient. Currently, the total number of chronic patients in all psychiatric hospitals is 1235 (10.3% increase from 2007-2008) and most of them (n=1198) are Saudis, males are 1094. Most of chronic patients (n=854) are in the age band of 21-50. Above 50 years are 372. Nine patients are under the age of 20 years. The main reasons for long-stay in decreasing frequency are refusal by caregivers (n=671), unstable condition (n=187), need for rehabilitation (n=168), and patients' dangerousness (n=133) and others (n=76). Lack of community services, stigma and absence of half-way homes were other important factors. A patient with drug abuse staying more than 3 months was defined as a long-stay patient. Currently, the total number of chronic patients with addiction problems is 72 (41.2% increase from 2007-2008) might be attributed to the rising problems of chronic addictions in Saudi society. Most of them are Saudi males (n=68). Majority of them (n=70)

are between 21 to 50 years of age. Their long-stay is due to 1) treatment team recommendations (n=26), orders from higher authorities (n=12), refusal by family (n=4) and dual diagnosis (n=30). 47% of them (n=34) are staying more than 7 months or so. More details about patients' annual visits, inpatient admissions and human resources could be found elsewhere [85]. Table 5 provides overall additional results on mental health system in Saudi Arabia. The mental health professionals supported by administration staff comply with the following policy guidelines in order to decrease the population of chronic patients in the hospitals; 1) the early discharge of acute psychiatric patients once they are stable over 3-4 weeks, 2) discouraging chronic patients with stable conditions to be retained in the hospitals, 3) encouraging family members to accept chronic patients manageable at home, and 4) development of alternative services for chronic patients in the community. We feel that patients with chronic, severe conditions need special MH and social care either at home, community or inpatient settings.

2.14 Revised 4-year National Strategic Plan (NSP)

Matching international trend, the GAMHSS drafted the first ever NSP for improving and developing further psychiatric services in the KSA. This 4-year NSP (available upon request from the authors) approved by health authorities has been distributed to all psychiatric hospitals for implementation since January 2007, whose progress is monitored by GAMHSS. Regional administration for MHSS is responsible for its implementation and to communicate with the GAMHSS in case of any difficulties. The regional Health Directorate will forward the mid-year report to the GAMHSS. The 8 main goals with defined mechanisms for its effective implementation are, 1) development both of modern infrastructure and competent manpower, 2) improving the quality and quantity of MHSS, 3) expansion of de-addiction services, 4) developing innovative CME programs, 5) developing research units in psychiatric hospitals with the aim of conducting applied research. Ten national registries on focal psychiatric disorders were also established that would provide substantial data for analysis and accordingly future improvements in MHSS, 6) establishing national quality indicators and professional development in child and adolescent, geriatric, addiction, forensic, primary care psychiatry, and

CLP subspecialties, 7) development of social service units in general and specialist hospitals, and 8) promoting the defined roles of GAMHSS in overall planning and development of MHSS throughout the KSA. The plan has been revised twice over a period of seven years and main focus is now on developing community mental health services, continuation of CME activities, mental health promotion and preventive services. In addition, we follow the WHO Mental Health Action Plan 2013-2020 [7] to which we have contributed, in developing appropriate mental health services to meet the needs of patients with psychiatric and addiction disorders.

2.15 Psychotropic Drugs, Pharmaceuticals and Mental Health

The pharmaceuticals engage in several MH activities in Saudi Arabia; financial support for CME activities, availability of psychotropic drugs at reasonable costs to governmental and nongovernmental organizations, and support for national and international MH campaigns. The demand-supply ideology that is used by MOH is considered one of the fundamental principles governing an economy [86] distribute drugs through medical supply divisions to all MH settings. Pharmaceuticals also sponsor CME

Table 5. Summary of best approximate results (2015) and comparison with 2007-2008 Atlas (in parentheses)

Items	Remarks
Mental Health Expenditures	4% of total health budget (not specified)
Expenditures for mental hospitals	22% on mental health hospitals (Not specified)
Beds in mental hospitals	1.62 beds/10,000 (1.25/10,000), Distribution: Mental hospitals (90%) & Community facilities (10%) (not mentioned)
Patients treated in mental health facilities	Mental hospitals (40%) and 50% in outpatients facilities, 10% other facilities (not specified)
Female users treated in mental health facilities	Mental hospitals (46%), outpatient facilities (50%) and 4% other facilities. (not specified)
Diagnosis (inpatient versus outpatient MH consumers)	Mood disorders (35%vs20%), Schizophrenia (50%vs13%), neurotic disorders (1%vs36%) and drug abuse (9% vs. 20%), (not specified)
Length of stay in inpatient facilities	Mental hospitals- 30-45 days; Community residential facilities -30 to 60 days or more such as juvenile homes. Mentally ill patients are not admitted in general hospitals in Saudi Arabia (not specified)
PHC staff 2-day training in mental health in the last 7 years	PHC doctors: 80%, PHC nurses: 85% (not specified)
Total human resources in mental health setting	17/100,000 population: 2.43, psychiatrists (0.89/100,000), 11.3 nurses (9.50/100,000), 1.43 psychologists (0.83/100,000) and 2.2 social workers (0.94/100,000)
Average number of staff per bed	In mental hospitals – Nurses, 0.39, Psychosocial, 0.21 and Psychiatrist, 0.09 (not specified)
Professionals graduated in mental health/10,000.	Nurses:18, Psychiatrists: 0.4, Psychologist: 1.9: Social workers: 9.5 (not specified)
Mental health training of special staff	Up to 20% of police officers, and even a few judges and lawyers, have participated in mental health educational activities (not specified)
Consumer Organizations	Five consumer organisations, i.e., people with mental health problems that advocate for mental health. (not specified)
Special National Committees	Formed for promotion of mental health and for caring mental patients and their families (not specified)
National plan for Child and adolescents	The National Program for Developmental and Behavioral Disorders (not specified)

programs for MH professionals at regional, national and international levels. There is an impressive direct and indirect impact of these programs on the quality of mental health and social services offered to mental health consumers. The MOH Drug Formulary [87] has a section on drugs acting on central nervous system (CNS) with 10 subcategories. Notably, the list of CNS medications is reviewed every year. New drugs substitute old drugs from the formulary. After extensive discussions with concerned professionals, the general administration of mental health and social services advise MOH which psychotropic drugs to be added or deleted from the drug formulary. The availability of psychotropic drugs and psychosocial therapies at the point of care are of prime importance in delivering better quality services to patients with MH problems and are associated with better outcome.

2.16 Mental Health Information Reporting System (MHIRS)

A MHIRS has two important components; 1) data collection, its analysis and synthesis and making decision based on this data, and 2) thereafter informing personnel delivering services to MH consumers. Almost all psychiatric hospitals have data collecting mechanisms such as documentation of patient data in hard files and also entering the data in the computer but its analysis that could affect the process of decision making is not done in many hospitals including private sector. However, some yearly reports on health statistics including mortality are published from MOH. Most of regional psychiatric hospitals prepare annual report as well. However, what is the impact of such hospital reports on clinical practice, policy and decision making is yet to be evaluated. Ministry of Health is now engaged in digitalizing all hospitals and primary health care centers and the main IT control is established in MOH headquarter in Riyadh. On wider scale, Middle Eastern Mediterranean countries are lacking comparable data on mental health, though most countries contributed to the development of all WHO MHA-2014 [4]. The neglect of the need for relevant and valid comparable data on MHS is not in agreement with the importance of MH for these countries and the objectives of the WHO 2013-2020 including 'Europe 2020' strategy. There is a need for establishing quality indicators for mental health care. Like elsewhere [88], real leadership in developing harmonized mental health data across these countries is lacking. It is suggested

that a Middle Eastern Mediterranean Mental Health Observatory is urgently needed to lead development and implementation of monitoring of mental health and mental health service provision in this larger region. Overall, mental health information reporting system is important from many perspectives including collecting data for conducting research, improving clinical services by providing feedback to healthcare providers, and training purposes.

3. DISCUSSION

Over the past 5 decades, there has been steady and slow progress in the development of Mental Health and Social Services in the KSA. The infrastructure facilities for inpatients began to improve over the past twenty years. The remaining old rented hospital buildings were replaced by modern hospitals and another six projects would be completed for operation in the near future. The revised psychosocial and quality policies approved by health authorities will streamline the delivery of good quality mental health services to patients with psychiatric disorders. The Saudi Mental Health Act is already approved by the Council of Ministers and officially launched to further regulate mental health and forensic services including development of targeted services for patients who need high and medium security wards, currently lacking in the KSA. Mentally ill patients with major crimes are mostly kept in prisons. Literature supports the admission of severely ill psychiatric patients, men and women with crimes to high to medium secure wards [89-91].

Evidently, community and PHC psychiatric services are relatively lacking in Saudi Arabia but there is now a focus on developing community mental health services worldwide following deinstitutionalization of mental asylums in western world, though this shift met with critical comments and useful criticisms [92-94] as the community services were not developed there before this revolutionary shift. Overall, severely ill mental patients with schizophrenia, intellectual disabilities, antisocial personality disorders and dual diagnosis who require long-term care could be well managed in mental hospitals. Over a period of seven year, MH services have been integrated in PHC in Riyadh region and this developmental trend continued in Eastern regions [95] and will continue in all other regions of Saudi Arabia in future. This trend will reduce huge burden felt by psychiatric hospitals and will also match international focus on

CMH services [33]. Notably, other advantages of establishing community systems of care include both the diversion of acute cases from psychiatric hospitals and support people with chronic MH conditions. MOH would focus mainly on developing CMHC centers, residential homes, CMH teams, juvenile care homes and special service centers for MH services promotion of health, crisis prevention and intervention [29, 96-98]. Evidently, integrated PHC is associated with improved quality and outcomes of medical care [96]. Furthermore, a linkage will be established between community-CLP including PHC psychiatry and psychiatric hospitals including addiction centers. In addition, religious faith healers should also be integrated into MH Systems as many mentally ill patients consult them who use faith-based interventions [99,100]. Overall, MH infrastructural and human resources development that matches three dimensions of mental health including general MH services, public MH programs, and CMHC needs to be developed, which is our well-defined agenda and compatible with other researchers [101]. It is hard to predict that when budget for entire MHSS will be allocated separately to GAMHSS. The advantages of this step would be more focused expenditures on MHSS development including CMHC centers, infrastructural improvements, human resources, organization of CME for improving the skills of professionals including GPs and nurses.

As regard psychiatric beds and the number of MH professionals, the current situation is much better than 7 years before and on the way to improve further. Now GAMHSS has been focusing on to professional development through CME programs in several subspecialties including clinical psychology and sociology in cooperation with academic universities in Saudi Arabia. There is also tremendous emphasis on developing in- and outpatient MH services in general hospitals that may increase further psychiatric beds and human resources. The bed capacity of psychiatric hospitals has increased tremendously over a period of seven years and will continue in this direction in future when six hospital projects completed and become operational. However CMHC needs to be developed rapidly.

Homes and day care centers for children with IDs need appropriate programs for enhancing their quality of life. Printed documents and pamphlets from MOSA suggest that specific programs including medications for such population are in place but what is their impact on patients are not

clear. This area needs intervention research involving patients with IDs.

The miserable conditions of chronic patients need to be addressed by proper CMHC development [29]. For example there is a priority need to establish residential homes for this population which should be supervised by a CMHC team. The roles both of caregivers and family in these homes are much larger than traditional thinking. The integration of chronic mentally ill patients into community is awaited till CMHC is fully developed and before that this strategy will meet failure and criticisms [92-94,96].

The all time availability of psychotropics in psychiatric settings is an important goal of MOH but often their non-availability is a source of constant irritation and problems faced both by the prescribers and patients. Any change in drug prescription tends to cause psychological upset to the patient, increased cost, poor adherence, relapse, and hospitalization [102]. Newer psychotropics with better clinical profile have been added regularly to MOH drug formulary with deletion of old drugs. Notably, there are priorities to develop adverse effects reporting system, to conduct pharmacoepidemiological research, and train physicians in rational e-prescribing that might prevent medication errors and also economize patients' management as demonstrated in medical settings [103,104]. Finally MHAIS in all psychiatric hospitals should be updated regularly for realizing its importance in making better, data-based decisions and policies, and producing comprehensive annual reports. The collected information might also be used in writing manuscript for publication in scientific journals as our team has been doing this task regularly [8,105,106].

4. CONCLUSION

In conclusion, mental health authorities have been progressively developing mental health systems in Saudi Arabia, which are comparable with global developments in mental health.

5. FUTURE DIRECTIONS AND CHALLENGES

According to this update, infrastructural and human resources developments have taken place over the past 7 years yet very limited services are available for special psychiatric populations. Hence, mental health professionals

and planners will meet the following challenges during the next 5 years;

1. To develop preventive, therapeutic and rehabilitative psychiatric services for targeted special population especially child and adolescents, elderly population and women health.
2. To further establish community mental health services including PHC psychiatry and consultation liaison psychiatry in general and specialist hospitals.
3. To initiate CME programs tailored for capacity building and professional development in several subspecialties including addiction psychiatry, child and adolescent psychiatry, geriatric psychiatry and forensic psychiatry.
4. Paramedical staffs especially nursing also need to be developed by training in mental health because they provide mental healthcare services to larger population with MH problems.
5. To be at par with international trend, help boost research in mental health settings in the KSA.
6. Mental health information reporting system need to be updated by advanced information technology as data-based decisions are known to help professionals, managers and policy makers to improve delivery of mental health and social services to health consumers at large.
7. WHO Mental Health Plan 2013-2020 [7] developed with the help of all member states needs to be the guide for achieving all objectives incorporated in this plan.
8. Another challenge is to evaluate these projects' impact on mental health of consumers and outcomes.

CONSENT

It is not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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