Asian Journal of Epidemiology

ISSN 1992-1462

science alert
http://www.scialert.net

ANSInet
an open access publisher
http://ansinet.com

OPEN ACCESS Asian Journal of Epidemiology

ISSN 1992-1462
DOI: 10.3923/aje.2020.12.19

Research Article

Prevalence of Mental Disorders and the Use of Mental Health Services among the Adult Population in United Arab Emirates

Ibrahim Mahmoud and Coumaravelou Saravanan

Department of Family Medicine and Community Medicine and Behavioral Science, College of Medicine, University of Sharjah, Sharjah, United Arab Emirates

Abstract

Background and Objectives: Few studies have assessed the prevalence of mental illness and the utilization of formal mental health services in the United Arab Emirates (UAE). The objectives of this study were to estimate the prevalence of mental disorders, assess the use of formal mental health services and identify the reason for not accessing formal mental health services among adults in Sharjah city in the UAE. **Materials and Methods:** A cross-sectional survey was distributed among participants in public places in Sharjah city using convenience sampling methods. **Results:** Overall, 57.2% of participants suffered from at least one mental disorder, with higher prevalence rates in women than in men (62% vs. 52.6%, $p = 0.029$). Anxiety (56.4%), depression (31.5%), post-traumatic stress disorder (15.1%) and phobic disorder (10.8%) were the most prevalent mental disorders among participants. Over 80% of participants sought help for their mental problems, with 57.7% of them consulting a health professional and 42.3% consulting a non-health professional. Participants who consulted a health professional were more satisfied with their treatment (66.2%) compared to those who consulted a non-health professional (48.1%). **Conclusion:** The prevalence of anxiety and depression is higher in UAE compared with other disorders. Overall, women have a higher prevalence than men do, except for substance abuse. Formal mental health services were used more than non-formal services were. These findings indicate that interventions are required in the UAE to improve mental health outcomes. Further research at the national level is needed.

Key words: Formal health services, mental disorders, mental health, traumatic disorder, depression

Citation: Ibrahim Mahmoud and Coumaravelou Saravanan, 2020. Prevalence of mental disorders and the use of mental health services among the adult population in United Arab Emirates. Asian J. Epidemiol., 13: 12-19.

Corresponding Author: Coumaravelou Saravanan, Department of Family Medicine and Community Medicine and Behavioral Science, College of Medicine, University of Sharjah, Sharjah, United Arab Emirates

Copyright: © 2020 Ibrahim Mahmoud and Coumaravelou Saravanan. This is an open access article distributed under the terms of the creative commons attribution License, which permits unrestricted use, distribution and reproduction in any medium, provided the original author and source are credited.

Competing Interest: The authors have declared that no competing interest exists.

Data Availability: All relevant data are within the paper and its supporting information files.

INTRODUCTION

Mental health is as essential as physical health for the general well-being of individuals, societies and nations[1,2]. The global mental health challenge is profound[3]. Better mental health contributes to the promotion of healthy development and to the achievement of educational, social and economic goals, as well as to the avoidance of both communicable and non-communicable health problems and the consequent premature mortality[3]. Adams[4] mentioned in his article that the World Health Organization (WHO) revealed that 1 in 4 adults suffer from a mental or neurological disorder, with approximately two-thirds not seeking treatment. Globally, prevalence rates are estimated to be around 5-15% for common mental disorders and 0.5% for psychosis[5,6]. Some disorders are short-lived while others pursue a chronic course. By 2030, depression alone is expected to rise from the fourth-to the second-leading cause of the global disease burden as measured by disability-adjusted life years[3,7]. Adams[4] found that around 4% of the population of the United Arab Emirates (UAE) was clinically depressed and that mild depression could be affecting approximately 15% of the population. However, many aspects of the epidemiology of mental illness are still poorly understood in the UAE.

The use of formal health care services including mental health causing great concern worldwide[8,9]. There are several factors restricting access to mental health care services. Multiple studies have found that mental illness and stigma are considered to as major barriers for individuals accessing mental health services[10,11]. Worldwide, being male, married, less educated and being older were associated with not seeking mental health treatment[12]. Moreover, other factors might contribute significantly such as a limited awareness of mental disorders, the limited availability and afford ability of mental health care services, a lack of appropriate professional responses and inappropriate referral patterns[13].

In the UAE, only a few studies have assessed the availability of mental health services and attitudes toward these services[14,15]. In the Kingdom of Saudi Arabia (KSA), for example, the cost of treatment, the stigma attached to receiving mental health treatments and seeking faith-healing treatments were identified as reasons for not seeking professional mental treatment[16]. However, comprehensive information about access and patterns of use for the mental health services in the UAE is lacking.

In general, studies on mental health issues such as access, delivery, barriers, knowledge and attitudes are essential to improve policies and programs to address the multiple needs and enhance interventions required to encourage access and treatment initiation. Based on past research, the aims of this study were to estimate the prevalence of mental disorders among adults in Sharjah city in the UAE, to identify the gender differences in the prevalence of mental disorders, to assess the associations between demographic characteristics and the use of mental health services and to identify the reasons behind not accessing formal mental health services.

MATERIALS AND METHODS

Study design and setting: A cross-sectional survey was conducted among Sharjah city's adult residents. Sharjah city is the 3rd biggest city in the UAE. The target population was the non-institutionalized expatriate and UAE national adult aged 18 years and above from Sharjah city.

Data collection: The data collection was conducted over a 3-month period from 27 May, to 28 August, 2018.The data was collected through a self-administered questionnaire that was professionally translated into the Arabic language and piloted. The few items of the questionnaire was based on the latest version of the Composite International Diagnostic Interview (CIDI)[17]. The CIDI is a research instrument designed to assess the presence of mental disorders. The questionnaire was available in both languages: Arabic and English. The inter-rater reliability[18] for the CIDI was >0.94. The questionnaires were distributed to participants by research assistants in public places in Sharjah city using convenience sampling methods. All participants provided their written informed consent before participating in filling in the questionnaire.

The participants were asked to report on their sociodemographic characteristics, lifetime use of formal or informal mental services, level of satisfaction with the provided services and barriers to them not seeking help for any mental disorders.

Ethical considerations: The ethics and research Committee of the University of Sharjah and the Ministry of Health and Prevention approved this study.

Statistical analysis: To describe the demographic, lifestyle and clinical characteristics of the study population, we reported the frequencies with proportions and means with standard deviations (SDs) for the participants. Bivariate analysis (Chi-squared test) were conducted to identify the prevalence of mental disorders by gender and factors associated with the usage of formal mental health services. The statistical significance level was set at $p \le 0.05$.

The data analysis were performed using[19] IBM SPSS Statistics for Windows, Version 25.0. The reporting followed the Strengthening the Reporting of Observational Studies in Epidemiology statement for cross-sectional studies.

RESULTS

Of the 530 subjects, 51.3% (272/530) were males, with a mean age for the entire population of 30.7 years (SD±11.7 years). Table 1 shows the demographic and socioeconomic characteristics of the study participants.

Anxiety (56.4%), depression (31.5%), post-traumatic stress disorder (15.1%) and phobic disorder (10.8%) were the most prevalent mental disorders among Sharjah residents (Table 2). Overall, 57.2% (303/530) of the participants suffered from at least one mental disorder, with higher prevalence rates in women than in men (62 vs. 52.6%, p = 0.029, Table 2). In addition, Table 2 reveals that women had higher prevalence rates than men for depression (36 vs. 27.2%, p = 0 .029), post-traumatic disorders (20.5 vs. 9.9%, p = 0.001), phobic disorders (14.7 vs. 7%, p = 0.004) and somatoform disorders (6.2 vs. 1.8%, p = 0.010).

Table 1: Characteristics of the participants (n = 530)

Characteristics	Number	Percentage
Gender		
Male	272	51.3
Female	258	48.7
Nationality		
Local Emirati	46	8.7
Expatriate	484	91.3
Age, years		
Mean (SD)	30.7	11.7
Age groups, years		
<25	213	40.2
≥25	317	59.8
Education level		
Secondary and below	121	22.8
Tertiary	404	77.2
Marital status		
Married	231	56.4
Not married	299	43.6
Employment		
Employed	282	53.4
Unemployed	246	46.6
Household income/month (AED)		
<10,000	252	62.5
≥10,000	151	37.5

SD: Standard deviation, AED: United Arab Emirates Dirham

From the total number of people with emotional or mental disorders, 81.2% (246/303) sought help for their problem, with 57.7% (142/246) of them consulting a health professional and 42.3% (104/246) consulting a non-health professional (Table 3). Participants who consulted a health professional were more satisfied with their treatment (66.2%) compared to those who consulted a non-health professional (48.1%, Table 3).

Figure 1 lists the various reasons for the participants not seeking help for their emotional or mental problems, with the main reasons reported being that they "wanted to handle the problem on their own" (32%), having "no health insurance" (30%) and that they "thought the problem would get better by itself" (29%).

Table 4 shows the characteristics of participants who consulted a health professional for an emotional or mental problem. Being female, over 25 years old, not married and with a high education level were significantly (p<0.05) associated with seeking help from formal services (Table 4).

DISCUSSION

The present study investigated the prevalence of mental health disorders, reasons for not seeking help for mental health issues, the preferred methods for treatment and the demographic variables associated with the use of mental health services among adults from the UAE residing in Sharjah city. In this study, the prevalence rate for anxiety was the

Table 2: Prevalence of mental disorders by gender

	Total		Female		Male		
Mental disorders	Number	Percentage	Number	Percentage	Number	Percentage	p-value
Anxiety	299	56.4	147	57.0	152	55.9	0.800
Depression	167	31.5	93	36.0	74	27.2	0.029*
Post-traumatic stress	80	15.1	51	20.5	29	9.9	0.001*
Phobia	57	10.8	38	14.7	19	7.0	0.004*
Personality	34	6.4	20	7.8	14	5.1	0.221
Mania	26	4.9	14	5.4	12	4.4	0.589
Somatoform	21	4.0	16	6.2	5	1.8	0.010*
Substance abuse	11	2.1	2	0.8	9	3.3	0.041*
Schizophrenia	5	0.09	3	1.2	2	0.7	0.611

*Significant at <0.05 level

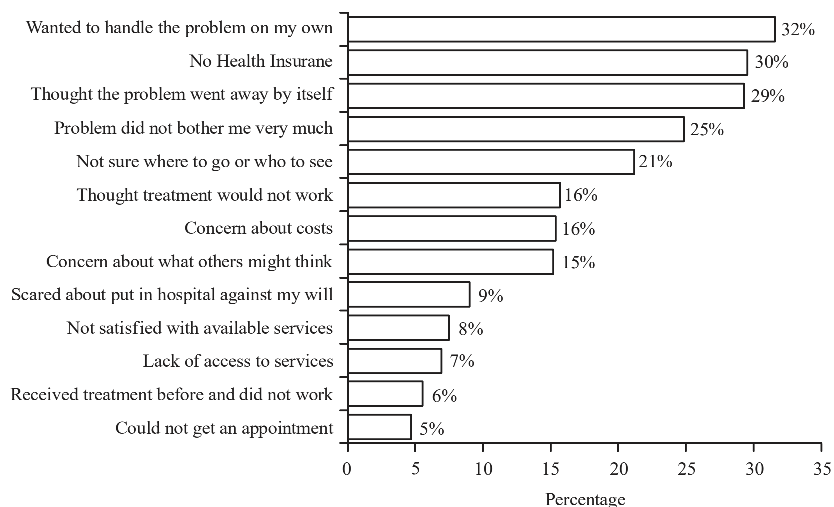

Fig. 1: Participants' reported reasons for not seeking help for emotions or mental problems

Table 3: Description of usage of formal and non-formal mental health services (n = 246)

Parameters	Number	Percentage
Consulted a health professional	142	57.7
Psychological counselling $\geq$15 min	37	26.1
Received a medicine	35	24.6
Satisfaction	98	66.2
Consulted a non-health professional	104	42.3
Received treatment	52	50.0
Satisfaction	50	48.1

Table 4: Characteristics of participants who consulted a health professional for an emotional or mental problem, (n = 142)

Characteristic	Number	Percentage	p-value
Gender			
Male	67	25.0	0.012*
Female	75	35.6	
Nationality			
Local Emirati	8	22.2	0.288
Expatriate	134	30.7	
Age, years			
<25	40	21.7	0.002*
$\geq$25	102	35.3	
Education level			
Secondary and below	23	20.7	0.013*
Tertiary	119	33.1	
Marital status			
Married	63	23.8	0.001*
Not married	79	38.0	
Employment			
Employed	73	28.7	0.492
Unemployed	69	31.7	
Household income/month (AED)			
<10,000	64	28.2	0.526
$\geq$ 10,000	42	31.3	

*Significant at <0.05 level, AED: United Arab Emirates Dirham

highest at 56%, followed by depression, post-traumatic disorders, phobias, personality issues, mania, somatoforms, substance use disorder and schizophrenia. Comparing this study's findings with other countries, the prevalence rate for anxiety in the UAE is almost similar to that of Qatar (56%)[20], is higher in Oman (82.5%)[21] but is less in Egypt (4.75%)[22],

Iraq (13.8%)[23], Iran (15.6%)[24], the USA (33.7%)[25] and the KSA (45.6%)[26]. The second highest prevalence rate was 32% for depression and this prevalence rate was higher than for mood disorders in Egypt (6.43%)[22], Iran (7.2%)[23],but was less than that in the KSA (37.4%)[26]. Anxiety and depression are considered common mental disorders. According to the WHO[27], 4.4% of the world's population experiences depression. In this study, most of the participants were expatriates, which might be one of the reasons for finding such high rates of anxiety and depression in our mixed cohort. Research has shown that expatriates are prone to mental illness more than native people are[28,29].

In the present study, approximately 2% were accepted that they abuse any one of the substances and 1% was suffering from schizophrenia. The prevalence of substance abuse is slightly higher in KSA (2.5%)[30] and lesser than Egypt (0.13%)[22] and Iran (0.2%)[23]. The UAE is an Islamic state and drugs are prohibited by law but people might become addicted to some of the licit drugs prescribed by their doctor such as tramadol or tramal and benzodiazepines[31]. Furthermore, people can be addicted to other nicotine-based substances such as dokha, cigarettes, shisha, etc.[32]. One percent of this study's participants was either currently experiencing or had a past history of schizophrenia. This prevalence rate was slightly higher than for psychotic disorders in Egypt (0.19%)[22]. However, the prevalence rate in our study was approximately consistent with the global prevalence of schizophrenia, which was estimated to be[33] 0.28% in 2016.

In the present study, there was a significant difference between males and females in their prevalence rates for depression, post-traumatic disorders, phobias, somatoforms and substance abuse. This result is consistent with another study conducted in the UAE[34] and with studies from other Middle Eastern countries in that females tend to experience more mental disorders compared with males[22,24,27,35]. Females experience higher levels of depression, post-traumatic disorders, phobias and somatic symptom disorders than males do. The major reasons identified for women experiencing higher levels of mental disorders in the Gulf Region were age-related (being under 55 years old), being divorced with four or more children and those who reported a higher exposure to recent adverse life events[36]. Moreover, ill mental health is also linked to employment stress, poor physical health, social isolation and gender inequality. Physicians working in primary health care centers and hospitals should be made aware of the high prevalence of depression and somatic symptom disorders among the female population in the UAE. A lack of screening for these disorders may lead to detrimental effects such as marital discord, suicidal behavior and poor self- and family care.

In this present study, the majority of participants who suffered from mental disorders indicated that they preferred to handle their problems on their own as the main reason for not consulting mental health professionals. The other reasons were no health insurance, that they thought the problem would go away automatically, that they were not sure who they should consult, they believed the treatment might not work, that the cost of treatment would be expensive, that there was stigma attached to consulting mental health professionals, that they were scared about being admitted to hospital against their will and that they could not get an appointment. A previous study also found that mentally ill people prefer to handle their problems on their own rather than consulting mental health professionals[37]. This could be due to stigma, a lack of insight about the illness, low perceived need and the severity of the illness[37,38]. Residents of the UAE have mandatory health insurance but this insurance may not cover mental health treatment[39]. Thus, mentally ill people either consult another physician for their mental illness or pay money for their consultation, which increases the financial burden. The results from this study are consistent with other studies conducted in the UAE and overseas, indicating that self- and public stigma, cultural barriers, the financial burden, a lack of knowledge and negative attitudes and beliefs about mental health treatments mean that many mentally ill people do not seek treatment[38,40]. There is a need for the Ministry of Health to promote mental health awareness among the public, as many mentally ill people do prefer to handle their problems on their own, which, in the long run, may increase the burden on their doctors and caregivers.

Although the various reasons mentioned in the above paragraph delineate the key reasons behind not seeking mental health treatment, in this present study, out of 246 mentally ill participants, 142 (57.7%) of them received formal treatment and 104 (42.3%) received informal treatment. The prevalence rate for seeking mental health treatments in this study is almost similar to that of the UK[41]. More satisfaction was reported by the participants who received formal treatments than by those who accessed non-formal treatments. This finding is consistent with a previous study conducted in the UAE where 47% of the participants reported no improvement after seeing a faith healer and 7% reported a worsened condition[42]. Globally, more than 70% of people with a mental illness receive no treatment from health care professionals[43]. People sometimes prefer to seek

non-mental health treatments such as Ayurvedic treatments, religious preaching and so on, rather than formal mental health treatments, due to a lack of knowledge and a fear of addiction and side effects from mental health drugs. In addition, many people believe that supernatural powers are a major reason for their mental illness[44]. Thus, they prefer seeking treatment from faith healers rather than accessing formal treatments. Therefore, there is a need to enhance public knowledge and attitudes toward mental illness.

In our cohort, females over 25 years old who have studied at the tertiary level of education and who are unmarried are most likely to seek formal mental health treatments when they experience any mental health issues. Salaheddin and Mason[41] found similar results as females sought more mental health treatments than males did. This may be due to the high prevalence of common mental disorders such as depression and anxiety among the female population. However, a study conducted in Qatar found that men were more willing to visit mental health professionals for their emotional problems than females were[45]. A previous study conducted in Egypt also found that divorced women and widows were more prone to mental disorders than married and unmarried women were but this study has found that unmarried women actually sought more mental health treatments[22]. Educated people consult mental health professionals more so than uneducated people do[45]. This may be due to them having more insight into mental illness and thus it could be one of the reasons for educated people to consult mental health professionals more. This study showed that people are willing to consult mental health professionals and receive formal mental health treatments for their emotional and mental illness but a considerable number of people are still unwilling to seek consultations and prefer receiving informal treatments for their mental illness.

Limitations: This study used standardized tools to measure the prevalence of mental disorders but the participants were not clinically interviewed to confirm their diagnosis. Moreover, due to stigma, some participants may have under-reported the true extent of their mental illness or they may have refused to accept that they had a mental illness. In addition, the study was based on residents in Sharjah city, which might not be representative of the overall UAE population.

CONCLUSION

The prevalence rates for anxiety and depression in the UAE are higher compared with other disorders. People's intention to seek mental health treatments is not adequate. Female participants are more willing to access formal mental health services than males are, however, the prevalence of mental disorders among the female population is higher and this needs to be seriously addressed. Formal mental health services were used more than non-formal services were. The present study findings indicate that interventions are required to improve mental health outcomes. Further research at the national level is needed to explore the true magnitude of mental disorders in the UAE.

SIGNIFICANCE STATEMENT

Mental health is one of the major health problems in UAE. This study screens the prevalence of mental health problems, access to mental health services and awareness about formal and informal mental health treatment as these are the important areas need to be studied. The result of this study will be useful for the Ministry of Health (MOH) to understand the prevalence of mental disorder and people usage of formal and informal mental health services. Based on this study result, MOH will enhance insight about the mental illness and its related treatment.

ACKNOWLEDGMENT

We like to say thank you for University of Sharjah to provided fund (1701090318-P) for conduct this research. We like to say thank you for the participants who participated in this study.

REFERENCES

1. Brundtland, G.H., 2001. Mental health: New understanding, new hope. J. Am. Med. Assoc., 286: 2391-2391.
2. WHO., 2001. Mental health: Strengthening our response. World Health Organization, Geneva, Switzerland. https://www.who. int/news-room/fact-sheets/detail/mental-health-strengthening-our-response
3. Jenkins, R., F. Baingana, R. Ahmad, D. McDaid and R. Atun, 2011. Mental health and the global agenda: Core conceptual issues. Mental Health Family Med., 8: 69-82.
4. Adams, M., 2016. How we can succeed in addressing the mental health challenges in the UAE. http://angloarabian-healthcare.com/2016/09/25/can-succeed-addressing-mental-health-challenges-uae/
5. Institute of Medicine, 2001. Neurological, Psychiatric and Developmental Disorders: Meeting the Challenge in the Developing World. The National Academies Press, Washington, DC., USA., ISBN-13: 9780309071925, Pages: 458.

6. Kessler, R.C. and T.B. Ustun, 2008. The WHO World Mental Health Surveys: Global Perspectives on the Epidemiology of Mental Disorders. Cambridge University Press, New York, USA., ISBN-13: 9780521884198, Pages: 580.
7. WHO., 2008. The Global Burden of Disease: 2004 Update. World Health Organization, Geneva, Switzerland, ISBN-13: 9789241563710, Pages: 146.
8. Al Makadma, A.S., 2017. Adolescent health and health care in the Arab Gulf countries: Today's needs and tomorrow's challenges. Int. J. Pediatr. Adolesc. Med., 4: 1-8.
9. Kronfol, N.M., 2012. Access and barriers to health care delivery in Arab countries: A review. Eastern Mediterr. Health J., 18: 1239-1246.
10. Abu-Ras, W., A. Gheith and F. Cournos, 2008. The imam's role in mental health promotion: A study at 22 mosques in New York City's Muslim community. J. Muslim Mental Health, 3: 155-176.
11. Ciftci, A., N. Jones and P.W. Corrigan, 2013. Mental health stigma in the Muslim community. J. Muslim Mental Health, 7: 17-32.
12. Wang, P.S., S. Aguilar-Gaxiola, J. Alonso, M.C. Angermeyer and G. Borges *et al*., 2007. Use of mental health services for anxiety, mood and substance disorders in 17 countries in the WHO world mental health surveys. Lancet, 370: 841-850.
13. Aloud, N. and A. Rathur, 2009. Factors affecting attitudes toward seeking and using formal mental health and psychological services among Arab Muslim populations. J. Muslim Mental Health, 4: 79-103.
14. Al-Darmaki, F., 2004. Mental Health Care in UAE since the Formation of Al-Itihad. UAE University Publications, United Arab Emirates.
15. Al-Krenawi, A., J.R. Graham, Y.Z. Dean and N. Eltaiba, 2004. Cross-national study of attitudes towards seeking professional help: Jordan, United Arab Emirates (UAE) and Arabs in Israel. Int. J. Social Psychiatry, 50: 102-114.
16. Aljabri, M.K., I.Z. Gadibalban, A.M. Kalboush, H.S. Sadek and H.H. Abed, 2018. Barriers to special care patients with mental illness receiving oral healthcare: A cross sectional study in the Holy City of Makkah, Saudi Arabia. Saudi Med. J., 39: 419-423.
17. Kessler, R.C. and T.B. Ustun, 2004. The World Mental Health (WMH) survey initiative version of the World Health Organization (WHO) Composite International Diagnostic Interview (CIDI). Int. J. Methods Psychiatr. Res., 13: 93-121.
18. Cottler, L.B., L.N. Robins, B.F. Grant, J. Blaine, L.H. Towle, H.U. Wittchen and N. Sartorius, 1991. The CIDI-core substance abuse and dependence questions: Cross-cultural and nosological issues. Br. J. Psychiatry, 159: 653-658.
19. IBM., 2017. IBM SPSS Statistics for Windows, Version 25.0. IBM Corporation, Armonk, NY., USA.
20. Bener, A., S. Ghuloum and M.T. Abou-Saleh, 2012. Prevalence, symptom patterns and comorbidity of anxiety and depressive disorders in primary care in Qatar. Social Psychiatry Psychiatr. Epidemiol., 47: 439-446.
21. Jaju, S., S. Al-Adawi, H.H. Al-Kharusi, M.M. Magdi and S. Al-Riyami, 2009. Prevalence and age-of-onset distributions of DSM IV mental disorders and their severity among school going Omani adolescents and youths: WMH-CIDI findings. Child Adolesc. Psychiatry Mental Health, Vol. 3. 10.1186/1753-2000-3-29.
22. Ghanem, M., M. Gadallah, F.A. Meky, S. Mourad and G. El-Kholy, 2009. National survey of Prevalence of Mental Disorders in Egypt: Preliminary survey. Eastern Mediterr. Health J., 15: 65-75.
23. Alhasnawi, S., S. Sadik, M. Rasheed, A. Baban and M.M. Al-Alak *et al*., 2009. The prevalence and correlates of DSM-IV disorders in the Iraq Mental Health Survey (IMHS). World Psychiatry, 8: 97-109.
24. Hajebi, A., S.A. Motevalian, A. Rahimi-Movaghar, V. Sharifi, M. Amin-Esmaeili, R. Radgoodarzi and M. Hefazi, 2018. Major anxiety disorders in Iran: Prevalence, sociodemographic correlates and service utilization. BMC Psychiatry, Vol. 18. 10.1186/s12888-018-1828-2.
25. Bandelow, B. and S. Michaelis, 2015. Epidemiology of anxiety disorders in the 21st century. Dialogues Clin. Neurosci., 17: 327-335.
26. Mukrim, M.E., N.M.D. Alshammari, W.M.D. Alshammari, M.S.T. Alshammari and Y.N.R. Alshammari *et al*., 2019. Prevalence of depression, anxiety and stress among diabetes mellitus patients in Arar, Northern Saudi Arabia. Int. J. Med. Dev. Ctries., 3: 229-233.
27. WHO., 2017. Depression and other common mental disorders: Global health estimates. WHO/MSD/MER/2017.2, World Health Organization, Geneva, Switzerland.
28. Alkhamis, A.A. and S.S.A. Miraj, 2018. Links between employment-related factors and physical and mental health among uninsured expatriate males in Saudi Arabia. Int. J. Health Sci., 12: 50-58.
29. Saravanan, C., A. Alias and M. Mohamad, 2017. The effects of brief individual cognitive behavioural therapy for depression and homesickness among international students in Malaysia. J. Affective Disord., 220: 108-116.
30. Ibrahim, Y., S.M. Hussain, S. Alnasser, H. Almohandes and I. Sarhandi, 2018. Patterns and sociodemographic characteristics of substance abuse in Al Qassim, Saudi Arabia: A retrospective study at a psychiatric rehabilitation center. Ann. Saudi Med., 38: 319-325.
31. Al Ghaferi, H.A., A.Y. Ali, T.A. Gawad and S. Wanigaratne, 2017. Developing substance misuse services in United Arab Emirates: The National Rehabilitation Centre experience. BJPsych Int., 14: 92-96.

32. Saravanan, C., A. Attlee and N. Sulaiman, 2019. A cross sectional study on knowledge, beliefs and psychosocial predictors of shisha smoking among University students in Sharjah, United Arab Emirates. Asian Pac. J. Cancer Prev., 20: 903-909.
33. Charlson, F.J., A.J. Ferrari, D.F. Santomauro, S. Diminic and E. Stockings *et al*., 2018. Global epidemiology and burden of schizophrenia: Findings from the global burden of disease study 2016. Schizophrenia Bull., 44: 1195-1203.
34. Daradkeh, T.K., R. Ghubash and M.T. Abou-Saleh, 2002. Al Ain community survey of psychiatric morbidity: II. Sex differences in the prevalence of depressive disorders. J. Affective Disord., 72: 167-176.
35. Bener, A. and S. Ghuloum, 2011. Gender differences in the knowledge, attitude and practice towards mental health illness in a rapidly developing Arab society. Int. J. Social Psychiatry, 57: 480-486.
36. Alansari, B.M., 2006. Gender differences in depression among undergraduates from seventeen Islamic countries. Social Behav. Personality, 34: 729-738.
37. Mojtabai, R., M. Olfson, N.A. Sampson, R. Jin and B. Druss *et al*., 2011. Barriers to mental health treatment: Results from the National Comorbidity Survey Replication. Psychol. Med., 41: 1751-1761.
38. Taghva, A., Z. Farsi, Y. Javanmard, A. Atashi, A. Hajebi and M. Khademi, 2017. Stigma barriers of mental health in Iran: A qualitative study by stakeholders of mental health. Iran. J. Psychiatry, 12: 163-171.
39. Chaudhary, S.B., 2018. Insurance to cover mental health in Dubai. Gulf News, October 29, 2018. https://gulfnews.com/uae/health/insurance-to-cover-mental-health-in-dubai-1.2295306
40. Qassim, S., F. Boura and Y. Al-Hariri, 2018. Public knowledge and attitude toward depression and schizophrenia: Findings from quantitative study in UAE. Asian J. Pharm. Clin. Res., 11: 402-412.
41. Salaheddin, K. and B. Mason, 2016. Identifying barriers to mental health help-seeking among young adults in the UK: A cross-sectional survey. Br. J. Gen. Pract., 66: e686-e692.
42. Salem, M.O., B. Saleh, S. Yousef and S. Sabri, 2009. Help-seeking behaviour of patients attending the psychiatric service in a sample of United Arab Emirates population. Int. J. Social Psychiatry, 55: 141-148.
43. Thornicroft, G., 2007. Most people with mental illness are not treated. Lancet, 370: 807-808.
44. Rathod, S., D. Kingdon, P. Phiri and M. Gobbi, 2010. Developing culturally sensitive cognitive behaviour therapy for psychosis for ethnic minority patients by exploration and incorporation of service users' and health professionals' views and opinions. Behav. Cognit. Psychother., 38: 511-533.
45. Ghuloum, S., A. Bener and M.T. Abou-Saleh, 2011. Prevalence of mental disorders in adult population attending primary health care setting in Qatari population. J. Pak. Med. Assoc., 61: 216-221.