Prevalence of Depression among patients attending the Primary Health Care Clinics in Kuwait

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Abstract

Background: Depressive disorder is one of the most severe mental problems, characterized by mood lowering under the influence of which there are changes in thinking, perception, physical condition, behavior and social functioning of a person.

Objectives: To determine the prevalence of depression and its association with socio-demographic characteristics among patients attending mental and Primary Health care clinics in Kuwait.

Materials and Methods: A cross-sectional study was conducted in five primary healthcare regions in Kuwait for screening of adult consumers for depression between September 2017 and September 2018. The data were collected by interviewing a sample of 800 (326 male and 474 female visitors, response rate 91.4%) by using the Arabic and English versions of Patient Health Questionnaire 9.

Results: Based on the interpretation of PHQ-9 scores, it was found that out of 800 (326 males and 474 females) there were 262 (32.7%) patients who had no depression, 171 (21.4%) suffered from mild depression, 105 (13.1%) suffered from moderate depression, 58 (7.2%) suffered from moderate to severe depression, and 33 (4.1%) suffered from severe depression.

Conclusion: The prevalence rate of moderate to severe depression among PHC consumers in Kuwait was relatively high (24.4%) and its occurrence was more in Kuwaiti 's older than 35 years, married, females, working participants, low educated individuals and having low monthly income. Trained primary health care physicians in mental health clinics should be responsible for screening, treatment and appropriate referral to hospital.

Key words: depression, primary healthcare centers

Introduction

Depression is a significant contributor to the global burden of diseases and affects people in all communities across the world (1). It is considered as a major public health issue and as the fourth leading cause of the world diseases burden (2). In 2020 the World Health Organization (WHO) in their global prediction considers depression as the second highest cause of disability after ischemic heart disease (2-3). The word "depression" comes from the Latin word deprimere–suppressed, dent or crush (4). Depression is an emotional disturbance that leads to deterioration of abilities and daily activities; and a leading predictor of functional disability and mortality (5-6). Depression if unrecognized and undiagnosed can contribute to high medical utilization in the primary care setting (7).

Depressive disorder is a highly prevalent condition among Kuwaiti patients attending the PHC setting in one study published in 2007 (8). The integration of Mental Health Services into the Primary Care Setting may significantly enhances the number of people who are actively engaged in treatment of depression as well as improve care for other medical problems (9) . Efficacious and cost-effective treatments are available to improve the health and the lives of the millions of people suffering from depression around the world (1).

A review of published studies suggests that PHC physicians fail to detect depression, which remains undiagnosed in one third to one half of the cases (8,10,11). The failure of Primary Care Physicians (PCPs) to detect depression and its causes can delay potentially life-saving treatment, therefore, they should improve their knowledge and skills for appropriate diagnosis and management of depression(10).

The Patient Health Questionnaire (PHQ-9) has been widely used in primary care to improve the recognition and treatment of depression and anxiety disorders (10,12, 13,14), It consists of nine questions designed to correspond to the nine diagnostic criteria for major depressive disorder covered in the Diagnostic and Statistical Manual of Mental Disorders (DSM–IV). Items are rated from 0 to 3 according to increased frequency of experiencing difficulties in each area covered. Scores are summed and can range from 0 to 27. The score can then be interpreted as indicating either no depression, minimal, mild, moderate, moderately severe, or severe depression (15).

The aim of this study is to determine the prevalence of depression and its association with socio-demographic characteristics among patients attending mental and Primary Health care clinics in Kuwait and to assess the existing infrastructure providing the mental health services in primary health care and importance for the need of establishing more mental clinics in the Primary Health Care in the future.

Methods

Study design, setting, and duration:
This descriptive cross-sectional study was conducted over a period of one year (September 2017 to September 2018) in five Primary Health Care regions in Kuwait by using a designed self-administered questionnaire whereas semi-structured interviews were conducted with directors. The researcher was personally responsible for the distribution and collection of all questionnaires.

The infrastructure data regarding number of doctors, nurses, social workers, number of mental health clinics, number of working hours, appointment system, referral policy and training in the mental health clinics in Primary care centers was taken from the health statistic section in primary health care, central department of the MOH.

Sample:
The study sample consisted of 800 adults male and female, Kuwaiti and non-Kuwaiti, above 18 years attending the PHCCs for any reason during the period of study.
Inclusion and exclusion criteria:

The inclusion criteria were all patients 18 years and above at the PHCs who were available at the time of the study and willing to participate, and the exclusion criteria were all patients less than 18 years and the patients who decided not to participate in the study.

Data collection Tool:
Components and details of the instrument:
Following permission from the MOH Kuwait to conduct the study with ethical approval, the questionnaire was sent to the PHC centers through the principal investigator who obtained informed verbal and written consent from eligible participants after explaining the purpose of the study and assuring them about the confidentiality of collected information, supervised by an experienced PHC physician and nurse to assist the patients.

Data was collected using validated English and Arabic versions of Patient Health Questionnaire (PHQ-9) for screening of depression. The questionnaire consisted of the socio-demographic characteristics of the patients (age, gender, nationality, occupation, education level, marital status, monthly income and the name of health region) and the scale DSM-IV criteria consisted of nine questions and additional six questions regarding (difficulties regarding any problems, any depression medication, previous hospital admission for depression, any previous attempt of suicide, any referral to psychiatric casualty and any follow up in any psychiatry clinic).

The depression severity was calculated by assigning scores of 0, 1, 2 and 3 to the response categories of "not at all", "several days", more than half the days", and "nearly every day" respectively. The depression total score for the nine items ranges from 0 to 27 points. The scores for PHQ-9 were used to determine the presence of depression and its severity and depends on the following score ranges :

(1-4) minimal depression, (5-9) mild, (10-14) moderate,(15-19) moderate to severe, and (20-27) severe. The PHQ scoring system was used to drive severity scores for each question for the presence of depression symptoms over the last 2 weeks. Each participant was given a code number instead of their names and the privacy of their information given was secured.

Data analysis:
The collected data were reviewed, coded, verified and statistically analyzed using Statistical Package for Social Sciences (SPSS) software version 25. Descriptive statistics and appropriate tests were applied according to the types of variables. For categorical variables, frequencies and percentages were used. P-value of <0.05 was considered significant.

Results

The total number of patients who were screened for depression was 875. Out of the 875 participants, 800 responded to the questionnaire and the other 75 had incomplete questionnaires and refusal to participate in the study.

The participants ages ranged from 18-24 years (5.5%), 25-34 years (31%), 35-44 years (29.6%) and 45years and above (33.9%), 474(59.3%) of the participants were females and the rest were males (40.8%).

Regarding the nationality, 481 (60.2%) were Kuwaiti and 318 (39.8%) were non-Kuwaiti. The majority of them were married (74.8%) and the rest were either single, divorced or widowed (25.3%).

Regarding their educational status, the majority of participants had Bachelor certificate (34.5%) and secondary school certificate (34%), Master (5.6%), PHD (35%) and 21.6% of them were illiterate. Out of 800 screened participants 632 (79%) were employees and 168 (21%) were non-employees. Approximately 62% of the participants had monthly income less than 1000 K.D while the rest of the participants had between 1000-3000 K.D (38%) and 5 of the participants refused to respond to this question.

According to the distribution of the participants to the health regions, (22.9%) of participants belonged to the Capital region, (16.8%) to Hawaly region, (17.8%) to Farwaniya region, (25.6%) to Ahmadi region and (17%) to Jahra region. (Table 1).

Depression was found in 45.8% (n=367) of the screened population by using the PHQ9. Based on the interpretation of PHQ-9 scores, it was found that out of 800 patients, 262 (32.7%) participants had no depression, 171 (21.4%) suffered from mild depression, 105 (13.1%) with moderate depression, 58 (7.2%) with moderate to severe depression, and 33 (4.1%) with severe depression. (Table 2).

It was found that the most common symptom was tiredness(68.2%) that happened several days to nearly every day followed by sleeping problems (63.2%), hopelessness (58.3%), little energy (55%) and eating problems (51.7%) while suicidal thoughts were reported by (17.1%) of the participants. (Table 3).

The effects of participant problem difficulties of work , taking care of things at home, or getting along with other people about (41.1%) rated from somewhat difficult to extremely difficult. The participants who had follow up at PHC centers' psychiatric clinic was around (4.4%), those who were on anti-depressant medication were (7.2%) those who attempted suicide were around (2.9%), the participants who referred to psychiatry casualty were (3.3%) and those who were admitted to hospital (2.1%) (Table 3).

The mean depression score of PHC consumers older than 35 years was significantly higher than that of the younger age groups. The age group 18-24 years had (6%) for the category of 0-4 depression score. Similarly 25-34 years had (26.4%), 35-44 years had (25.9%) and ≥45 years had (41.8%). The age group 18-24 years had(6.4%) for the category of 5-9 depression score. Similarly 25-34 years had (32.7 %), 35-44 years had (26.3%) and ≥45 years had (34.5%). The age group 18-24 years had no participants for the category of 10-14 depression score. Similarly 25-34 years had (31.4%), 35-44 years had (37.1 %) and ≥45 years had (31.4%). The age group 18-24 years had (3.4%) for the category of 15-19 depression score. Similarly 25-34 years had (31%), 35-44 had (43.1%) and ≥ 45 years had (22.4%) .The age group 18-24 years had (3%) for the category of 20-27 depression score. Similarly 25-34 years had (24.2%), 35-44 years had (27.3%) and ≥ 45 years had (45.5%) (Table 4).

It was also significantly higher among Kuwaitis than non-Kuwaitis; (56.2 %) of Kuwaitis and (43.8%) for the category of 0-4 depression score, (66.7%) of Kuwaitis and (33.3%) non-Kuwaitis for the category of 5-9 depression score. (61.9%) of Kuwaitis and (38.1 %) of non-Kuwaitis for the category 10-14 depression score and (75.9%) of Kuwaiti and(24.1%)of non-Kuwaiti for the category 15-19 depression score and (60.6%) of Kuwaitis and (39.4%) of non-Kuwaitis for the category 20-27 depression score (Table 5).

The mean depression score was significantly higher among females than males; (55.7%) of females and (44.3%) of males for the category of 0-4 depression score, (66.7%) of females and (33.3%) of males for the category of 5-9 depression score, (61.9%) of females and (38.1%) of males for the category 10-14 score , (75.9%) of female and (24.1%)of male for the category of 15-19 depression score and (60.6%) of females and (39.4 %) of males for the category 20-27 score. (Table 6)

The mean depression score was significantly higher among working participants compared with non-working; (81.1%) of the participants who were currently working,

(8%) who were a house wife, (10.4%) of those who were retired and (0.5%) of the others had 0-4 depression score. (78.4%) of the current working, (14.6%) of the house wives ,and (7%) retired had 5-9 depression score. (77.1%) of the current working,(13.3%) of the house wives and (9.5%) of the retired had 10-14 depression score. (75.9%) currently working (12.1%) for the house wives (8.6%) for the retired and (3.4%) of the others had 15-19 depression score (60.6%) for the current working, (30.3%) for the house wives and (9.1%) for the retired had 20-27 depression score (Table 7).

It was the highest among low education level than higher levels of education; (29.9%) for the high school educated, (34.8%) for the Bachelors, (6%) for the Masters (4.5%) for those with PHD and (24.9%) for the others had 0-4 depression score; (31.6%) for the high school educated, (36.3%) for the Bachelors, (5.3%) for the Masters, (4.7%) for those with a PHD and (22.2%) of the others had 5-9 depression score; (39%) for the high school educated, (31.4%) for the Bachelors,(6.7%) for the Masters, (5.7%) for those with PHD and (17.1%) for the others had 10-14 depression score. (45.6 %) for the high school graduates, (33.3%) for the Bachelors,(1.8 %) for the Masters, (1.8 %) for the PHD holders and (17.5%) of the others had 15-19 depression score. (39.4%) for the high school educated, (24.2%) for the Bachelors, (6.1%) for the Masters, no one with a PHD and (30.3%) of the others had 20-27 depression score (Table 8).

The mean depression score was significantly higher in married than non-married participants; (11.4%) of the single, (82.6%) of the married, (3%) of the divorced, (3%) of the widowed had 0-4 depression score; (16.4%) of the single, (77.2%) of the married, (3.5%) of the divorced, (2.9%) of the widowed had 5-9 depression score. (12.4%) of the single, (81%) of the married, (2.9%) of the divorced and(3.8%) of the widowed had 10-14 depression score. (25.9%) of the single(63.8%) of the married(5.2%) of the divorced and (5.2%) of the widowed had 15-19 depression score. (15.2%) of the single(72.7%) of the married, (6.1%) of the divorced and (6.1%) of the widowed had 20-27 depression score (Table 9).

The mean depression score was significantly higher in low income than in middle or high income; score 0-4 for the salary less than K.D; 1000 (61.5%), 1000-2000 (56.7%),2000-3000 (6.7%),>3000 (3.4%), Score 5-9 for the salary less than 1000 K.D; (56.7%), 1000-2000 (34%), 2000-3000 (6.7%), > 3000(2.7%), Score 10-14 for the salary less than 1000 K.D (61.5%), 1000-2000 (26 %), 2000-3000(9.4%), > 3000(3.1%), Score 15-19 for the salary less than 1000 K.D (66%), 1000-2000 (30.2%), 2000-3000 (3.8%), > 3000(0%), Score 20-27 for the salary less than 1000 K.D (63%), 1000-2000 (29.6%), 2000-3000 (3.7%), > 3000(3.7%). (Table 10)

The difficulties of these problems for the participants who work, taking care of things at home or getting along with other people ranged from not difficult at all to extremely difficult. (84.3%) of the participants did not have any difficulty at all, (15.7%) had somewhat difficulty and no one had very difficult or extremely difficult for the 0-4 depression score . (58%) had no difficulty at all, (40.8%) had somewhat difficult, (1.2%) had very difficult and no one had extremely difficult for the 5-9 depression score. (46.7%) did not have any difficulty at all, (48.6%) had somewhat difficulty, (4.8%) had very difficult and no one found it extremely difficult for the 10-14 depression score. (31%) had no difficulty at all, (53.4%) had somewhat difficulty, (13.8%) very difficult and (1.7%) extremely difficult for the 15-19 depression score. (39.4%) did not have any difficulty at all, (33.3%) had somewhat difficulty, (18.2%) very difficult and (9.1%) extremely difficult for the 20-27 depression score (Table 11).

The association between participants who received medication for depression and depression severity scoring was as follows: (3.5%) of patients who were on depression medication had 0-4 depression severity score, (4.7%) of them had 5-9 depression severity score, (9.5%) of them had 10-14 depression severity score, (15.5%) of them had 15-19 depression severity score and (12.1%) of them had 20-27 depression severity score (Table 12).

The association between participants admission to psychiatric hospital and depression severity score were as follow: (0.5%) of patients who were admitted to psychiatric hospital had 0-4 depression severity score, (0.6%) of them had 5-9 depression severity score, (3.8%) of them had 10-14 depression severity score, (8.6%) of them had 15-19 depression severity score and none of patients had 20-27 depression severity score (Table 13).

The association between participants who had attempted suicide and depression severity score was as follows: (0.5%) of patients who attempted suicide had 0-4 depression severity score, (0.6%) of them had 5-9 depression severity score, (2.9%) of them had 10-14 depression severity score, (3.4%) of them had 15-19 depression severity score and (6.1%) of them had 20-27 depression severity score. (Table 14)

The association between participants who referred to psychiatric casualty and depression severity scoring was as follow :(1%) of patients who referred to psychiatric casualty had '0-4' depression severity score, (0.6%) of them had '5-9' depression severity score, (5.7%) of them had '10-14' depression severity score, (10.3%) of them had '15-19' depression severity score and (9.1%) had '20-27' depression severity score. (Table 15)

The association between participants who had follow up to primary care psychiatric clinic and depression severity scoring were as follows: (2%) of patients who had follow up to primary care psychiatric clinic had 0-4 depression severity score, (1.8%) of them had 5-9 depression severity score, (5.7%) of them had 10-14 depression severity score, (8.6%) of them had 15-19 depression severity score and (12.1%) of them had 20-27 depression severity score. (Table 16)

Table 1: Association between socio-demographic characteristic of primary care attendees and presence of depression

Socio-demographic characteristics	Depression score				P-value
	frequency	valid %	Mean	SD	
Age in years					
18-24	44	5.5%	66.1%	45.4%	
25-34	248	31%	82.7%	49.3%	0.002
35-44	237	29.6%	78.8%	56%	
45 and above	271	33.9%	96.2%	55.3%	
Gender					
Male	326	40.8%	90.3%	56.9%	0.001
Female	474	59.3%	81.7%	51.4%	
Nationality					
Kuwaiti	481	60.2%	79.8%	54%	0.001
Non-Kuwaiti	318	39.8%	93.5%	52.6%	
Occupation					
Currently working	632	79%	81.5%	52.3%	
House wife	90	11.3%	95.4%	54.5%	0.001
Retired	73	9.1%	105.2%	59.7%	
Others	5	0.6%	84.6%	71.9%	
Academic qualification					
High school	271	34%	82%	53.9%	
Bachelor	275	34.5%	83.9%	51.1%	0.001
Masters	45	5.6%	96.4%	56.8%	
PHD	35	4.4%	78.1%	56.1%	
Others	172	21.6%	90.5%	54.5%	
Marital status					
Single	145	18.1%	75.4%	54.6%	0.001
Married	598	74.8%	86.9%	53.4%	
Divorced	31	3.9%	84.6%	53.1%	
Widow	26	3.3%	102.6%	55.8%	
Monthly income(KD)					
≤ 1000	437	62%	82.8%	50.7%	
1000-2000	203	28.8%	85.7%	56.9%	0.006
>2000-3000	41	5.8%	83.5%	57.4%	
≥ 3000	24	3.4%	78.9%	61.9%	
Refused to respond	5	0.62%			
8. Health regions					
Capital	183	22.9%	102.4%	62.8%	1.00
Hawaly	134	16.8%	63.7%	41.4%	
Farwaniya	142	17.8%	78%	41.9%	
Ahmadi	205	25.6%	100.4%	58.4%	
Jahra	136	17%	67.9%	39.8%	

Table 2: Distribution of primary care attendees according to their depression

Diagnosis of Depression	Total (n= 800)	
	Frequency	Valid %
A. No depression(0-4)	262	32.7%
B. Level of depression severity:		
- Mild depression (5-9)	171	21.4%
- Moderate depression (10-14)	105	13.1%
- Moderately severe depression (15-19)	58	7.2%
- Severe depression (20-27)	33	4.1%

Table 3: Distribution of depressive symptoms experienced nearly every day during the last 2 weeks by gender among depressed PHC consumers according to PHQ-9 questionnaire.

(PART 1: The Second half of this table is on the following page)

Symptoms	Depression score				P value
	frequency	valid %	Mean	SD	
Little interest					
-Not at all	360	45%	83.7	55.6	0.001
-Several days	273	34.1%	88.5	50.2	
-More than half the days	124	15.5%	80.6	56.4	
-Nearly every day	43	5.4%	90.5	53.9	
-Total	800	100%	85.2	53.8	
Hopelessness					
-Not at all	334	41.8%	86.6	57.1	0.001
-Several days	296	37%	85	52.07	
-More than half the days	127	15.9%	79.1	48.08	
-Nearly every day	43	5.4%	93.7	56.5	
-Total	800	100%	85.2	53.8	
Sleeping problems					
-Not at all	295	36.9%	87.9	56.4	
-Several days	248	31%	84	54.7	0.001
-More than half the days	170	21.3%	82.3	51.4	
-Nearly every day	87	10.9%	85.3	47.2	
-Total	800	100%	85.2	53.8	
Little energy					
-Not at all	254	31.8%	82.8	58.7	
-Several days	314	39.3%	86.4	52.2	0.001
-More than half the days	154	19.3	86.5	51.8	
-Nearly every day	77	9.6%	85.3	48.3	
-Total	799	100%	85.2	53.8	
Poor appetite or overeating					
-Not at all day	387	48.4%	87.7	55.7	
-Several days	207	25.9%	88.8	52.7	
-More than half the days	146	18.3%	75.3	50.3	0.001
-Nearly every day	60	7.5%	81.1	51.5	
-Total	800	100%	85.2	53.8	
Feeling bad about yourself					
-Not at all	506	63.2%	85.5	55.2	
-Several days	166	20.8%	85.4	48.6	0.001
-More than half the days	78	9.8%	76.6	52.5	
-Nearly every day	50	6.3%	95.1	58	
-Total	800	100%	85.2	53.8	

(TABLE 3: Distribution of depressive symptoms experienced nearly every day during the last 2 weeks by gender among depressed PHC consumers according to PHQ-9 questionnaire. PART 2)

Trouble concentrating					
-Not at all	449	56.3%	85	55.7	
-Several days	214	26.8%	83	52.2	
-More than half the days	95	11.9%	91.8	47.8	0.046
-Nearly every day	40	5%	87.6	54.1	
-Total	798	100%	85.4	53.8	
Moving or speaking slowly or fidgety					
-Not at all	561	70.2%	86.6	54.8	
-Several days	138	17.3%	82.2	49.5	
-More than half the days	73	9.1%	81.9	56.1	
-Nearly every day	27	3.4%	83	51.7	0.281
-Total	799	100%	85.3	53.9	
Suicidal thoughts					
-Not at all day	663	82.9%	85.7	54.9	
-Several days	85	10.6%	82.3	47.4	
-More than half the days	37	4.6%	83.4	52.7	
-Nearly every day	15	1.9%	86	48.5	0.927
-Total	800	100%	85.2	53.8	
Difficulty of problems on patient's life					
-Not difficult at all	467	58.8	84.6	56.3	0.002
-Somewhat difficult	286	36%	85.2	49.3	
-Very difficult	34	4.3%	82.4	56.8	
-Extremely difficult	7	0.9%	97.1	45	
-Total	794	100%	84.8	53.7	
Anti-depressant medication					
-No	58	7.2%	85.8	53.8	
-Yes	742	92.8%	77.6	53.7	0.001
-Total	800	100%	85.2	53.8	
Hospital admission					
-No	783	97.9%	85.5	54.1	
-Yes	17	2.1%	72	36.5	0.290
-Total	800	100%	85.2	53.8	
Any suicidal attempts					
-No	777	97.1 %	85.3	54	0.803
-Yes	23	2.9%	81.7	48.9	
-Total	800	100%	85.2	53.8	
Psychiatry casualty referral					
-No	774	96.8%	85.4	54.2	
-Yes	26	3.3%	80.7	42.1	0.038
-Total	800	100%	85.2	53.8	
PHC psychiatric clinic FU					
-No	35	4.4%	84.8	54.4	
-Yes	765	95.6%	95.3	37.7	
-Total	800	100%	85.2	53.8	0.032

Table 4: Association between Age in years of primary care attendees and depression severity

Age in years	Depression severity										(p-value)
	'0-4'		'5-9'		'10-14'		'15-19'		'20-27'		
	n	%	n	%	n	%	n	%	n	%	
18-24	12	6	11	6.4	0	0	2	3.4	1	3	0.062
25-34	53	26.4	56	32.7	33	31.4	18	31	8	24.2	
35-44	52	25.9	45	26.3	39	37.1	25	43.1	9	27.3	
≥ 45	84	41.8	59	34.5	33	31.4	13	22.4	15	45.5	
Total	201	100	171	100	105	100	58	100	33	100	

Table 5: Association between participants' genders and depression severity

Patient gender	Depression severity										(p-value)
	'0-4'		'5-9'		'10-14'		'15-19'		'20-27'		
	n	%	n	%	n	%	n	%	n	%	
Male	89	44.3	66	38.6	38	36.2	16	27.6	12	36.4	0.001
Female	112	55.7	105	61.4	38	36.8	42	72.4	21	63.6	
Total	201	100	171	100	105	100	58	100	33	100	

Table 6: Association between participants' nationality and depression severity

Nationality	Depression severity										(p-value)
	'0-4'		'5-9'		'10-14'		'15-19'		'20-27'		
	n	%	n	%	n	%	n	%	n	%	
Kuwaiti	113	56.2	114	66.7	65	61.9	44	75.9	20	60.6	0.017
Non-Kuwaiti	88	43.8	57	33.3	40	38.1	14	24.1	13	39.4	
Total	201	100	171	100	105	100	58	100	33	100	

Table 7: Association between participants' occupation and depression severity

Patient job	Depression severity										(p-value)
	'0-4'		'5-9'		'10-14'		'15-19'		'20-27'		
	n	%	n	%	n	%	n	%	n	%	
Currently working	163	81.1	134	78.4	81	77.1	44	75.9	20	60.6	0.573
House wife	16	8	25	14.6	14	13.3	7	12.1	10	30.3	
Retired	21	10.4	12	7	10	9.5	5	8.6	3	9.1	
Others	1	0.5	0	0	0	0	2	3.4	0	0	
Total	201	100	171	100	105	100	58	100	33	100	

Table 8: Association between participants' education level and depression severity

Academic qualification	Depression severity										(p-value)
	'0-4'		'5-9'		'10-14'		'15-19'		'20-27'		
	n	%	n	%	n	%	n	%	n	%	
High school	60	29.9	54	31.6	41	39	26	45.6	13	39.4	0.383
Bachelor	70	34.8	62	36.3	33	31.4	19	33.3	8	24.2	
Master	12	6	9	5.3	7	6.7	1	1.8	2	6.1	
PHD	9	4.5	8	4.7	6	5.7	1	1.8	0	0	
Other	50	24.9	38	22.2	18	17.1	10	17.5	10	30.3	
Total	201	100	171	100	105	100	57	100	33	100	

Table 9: Association between participants' marital status and depression severity

Marital status	Depression severity										(p-value)
	'0-4'		'5-9'		'10-14'		'15-19'		'20-27'		
	n	%	n	%	n	%	n	%	n	%	
Single	23	11.4	28	16.4	13	12.4	15	25.9	5	15.2	0.001
Married	166	82.6	132	77.2	85	81	37	63.8	24	72.7	
Divorced	6	3	6	3.5	3	2.9	3	5.2	2	6.1	
Widow	6	3	5	2.9	4	3.8	3	5.2	2	6.1	
Total	201	100	171	100	105	100	58	100	33	100	

Table 10: Association between participants' marital income and depression severity

Monthly income	Depression severity										(p-value)
	'0-4'		'5-9'		'10-14'		'15-19'		'20-27'		
	n	%	n	%	n	%	n	%	n	%	
<1000	110	61.5	85	56.7	59	61.5	35	66	17	63	
1000-2000	51	28.5	51	34	25	26	16	30.2	8	29.6	
2000-3000	12	6.7	10	6.7	9	9.4	2	3.8	1	3.7	0.992
>3000	6	3.4	4	2.7	3	3.1	0	0	1	3.7	
Total	179	100	150	100	96	100	53	100	27	100	

Table 11: Association between participants with difficulty of problems and depression severity

Difficulties of problems	Depression severity										(p-value)
	'0-4'		'5-9'		'10-14'		'15-19'		'20-27'		
	n	%	n	%	n	%	n	%	n	%	
Not difficult at all	166	84.3	98	58	49	46.7	18	31	13	39.4	0.001
Somewhat difficult	31	15.7	69	40.8	51	48.6	31	53.4	11	33.3	
Very difficult	0	0	2	1.2	5	4.8	8	13.8	6	18.2	
Extremely difficult	0	0	0	0	0	0	1	1.7	3	9.1	

Table 12: Association between participants who take anti-depressant medication and depression severity

Anti-depressant medication	Depression severity										(p-value)
	'0-4'		'5-9'		'10-14'		'15-19'		'20-27'		
	n	%	n	%	n	%	n	%	n	%	
Yes	7	3.5	8	4.7	10	9.5	9	15.5	4	12.1	0.001
No	194	96.5	163	95.3	95	90.5	49	84.5	29	87.9	

Table 13: Association between participants who were admitted to psychiatric hospital and depression severity

Admission to psychiatric hospital	Depression severity										(p-value)
	'0-4'		'5-9'		'10-14'		'15-19'		'20-27'		
	n	%	n	%	n	%	n	%	n	%	
Yes	1	0.5	1	0.6	4	3.8	5	8.6	0	0	0.001
No	200	99.5	170	99.4	101	96.2	53	91.4	33	100	

Table 14: Association between participants who attempted suicide and depression severity

Suicide attempts	Depression severity										(p-value)
	'0-4'		'5-9'		'10-14'		'15-19'		'20-27'		
	n	%	n	%	n	%	n	%	n	%	
Yes	1	0.5	1	0.6	3	2.9	2	3.4	2	6.1	0.001
No	200	99.5	170	99.4	102	97.1	56	96.6	31	93.9	

Table 15: Association between participants who referred to psychiatric casualty and depression severity

Referral to psychiatric casualty	Depression severity										(p-value)
	'0-4'		'5-9'		'10-14'		'15-19'		'20-27'		0.001
	n	%	n	%	n	%	n	%	n	%	
Yes	2	1	1	0.6	6	5.7	6	10.3	3	9.1	
No	199	99	170	99.4	99	94.3	52	89.7	30	90.9	

Table 16: Association between participants who had FU to primary care psychiatric clinic and depression severity

FU to primary care psychiatric clinic	Depression severity										(p-value)
	'0-4'		'5-9'		'10-14'		'15-19'		'20-27'		0.001
	n	%	n	%	n	%	n	%	n	%	
Yes	4	2	3	1.8	6	5.7	5	8.6	4	12.1	
No	197	98	168	98.2	99	94.3	53	91.4	29	87.9	

Discussion

According to this study about 24.4% of PHC consumers had moderate to severe depression (using the PHQ9 as a screening tool) and about 17.1% of depressed patients had suicidal thoughts from several days to nearly every day. By reviewing the literature, it was found that the rate was higher than that reported in Saudi Arabia (16-20%) (2-11) , Riyadh (20%) (14), Kuwait (20.5%) (8-10) ,Qatar (13.5 -27.8%) (2-16) , Bahrain (19.3%) (2) and European countries (16.5%-22.8%) (11-17-19) . Comparing our study results with a study done in the United States, we found our rates to be higher: mild cases (21.4% vs 9.9%), moderate (13.1% vs 3.7%), moderate to severe (7.2% vs 1.4%), severe (4.1% vs 0.5%) (23).

In this study, the significant factors associated with depression among primary care attendees were age, gender, nationality, working participants, marriage, low education and low monthly income.

Regarding the age in the present study, a high prevalence of depression was observed in middle age/older (above 35 years) comparable to other studies that reported the highest prevalence in young adults as in Qatar (18-34 years) (20), US general population (15-24 years) (21).

All over the world, depression is much more common in women than in men. From the results of our study females were more likely to suffer from depression. This finding is consistent with many previous studies (5-16). However, many attributed this disparity to the various stresses women face as a result of their gender and different responsibilities within their families.

With regard to the association between marital status and prevalence of depression, the majority of depressed participants were among the married group. Our result is similar to the previous other studies (5-8). One explanation may be due to marital disharmony, increased marital responsibilities and their consequences. This result was not similar to previous studies (21).

The significant correlation between depression and nationality could be attributed to the higher number of participants of Kuwaiti nationality, in comparison to the non-Kuwaiti.

79% of the participants who are working were more prone to depression than the non-working as p value is highly significant (0.001). The work stress to which the participants may be exposed may be responsible for this result. The highest prevalence of depression was among the working population, with a lower prevalence for non-working and lowest for the retired. Our result is similar to the previous results of other studies (8-14). A possible explanation may be due to the work stress in which people are faced with numerous physical, psychological and social roles which changes their sense of self capacity to live happily and the employees may be exposed to the possibility of lack of job satisfaction.

The association between level of education and prevalence of depression shows that the prevalence of depression increases with low level of education. This goes along

other studies, in which patients with lower educational levels were more likely to have clinically significant depressive symptoms (22). This however differs in results that found the opposite, that depression was more likely to be associated with higher educational level(3).

The prevalence of depression among adults decreased as family income levels decreased similar to the previous other studies (24).

The symptoms of depression that were highly significant were little interest, hopelessness, sleeping problems, little energy, poor appetite and feeling bad about themselves, with a p value (0.001).

The referral rate from Primary care centers to psychiatry hospital casualty was found to be low (2.25%) with least significant p value (0.038) and for hospital admission (1.3%) with non-significant p value (0.290) compared with other studies (14- 19).

This study showed that the estimated number of moderately to severely depressed patients was 196 (24.5%), and those having suicidal thoughts (17.1%) and about (1.12%) of depressed patients had suicidal attempts. As the report mentioned it might take only 10 minutes or less between the suicidal thoughts and actual suicidal attempts in about half of the depressed patients (21).

Participants with depressive symptoms report greater impairment in function in doing work, home duties or taking care of things or getting along with other people with a significant p value (0.002), which is similar to the previous other studies (24).

As depression is a disease that can be reliably diagnosed and treated in primary care, now, the question is ‘‘Are we ready to deal with such a burden of disease?’’ The Ministry of Health established a National Mental Health Committee in Kuwait for integrating mental health in primary care. There are 17 mental health clinics in PHC centers in Kuwait distributed in the 5 health regions (10 in Capital, 3 in Farwaniya, 2 in Ahmadi, 1 in Jahra and 1 in Hawaly); working 7 hourly, each mental health clinic is run by a trained physician and a trained nurse. There was continuous training of primary care physicians on mental health issues and diagnosis of common mental disorders, enabling physicians to identify and treat people with common and severe mental disorders, aiming to provide at least one trained physician in each primary care center.

Importantly, all antidepressants were exempted from the controlled drug list and available for those clinics so that they could be prescribed by primary care physicians. Each mental health clinic had an appointment system and referral policy.

Conclusion

We conclude from this study that prevalence rate of depression among primary care attendees in Kuwait was relatively high. Gender, marital status, nationality, occupation, and academic qualification, were the main significant predictors for depression. Therefore, it is recommended that screening and early detection of mental health problems, in general, and depression in particular, should be implemented by PHC physicians during their routine daily activity.

This study highlights the importance of primary care physicians as a cornerstone in screening for underlying depressive disorder and initiating appropriate referral or treatment and proper communication between the primary care referral source and the psychiatrists to allow for better understanding and follow-up of patients from the primary care referral sites (10).

However, a body of evidence suggests that the quality of primary care can be enhanced through better integration of services and encouragement of patient self-management and concordance with evidence-based treatments. Approaches such as collaborative care, stepped care and case management offer improved outcomes which consider the clinical implications of depression comorbidity including increased risk of suicide, increased risk of psychiatric hospitalization, increased disability, decreased compliance with treatment of medical illness, and markedly increased utilization of medical services.

Further investigations and studies need to be done to ascertain the association between depressive symptoms and chronic diseases in the studied population and to assess other comorbidities (anxiety/somatoform disorders) in primary care (17).

Recommendation

1. Identify the real underlying causes of such an increase in the prevalence of depression in Kuwait.
2. Improve the recognition and management of depression in primary health care by:

-Developing a practice guideline which is accompanied by a range of interventions to implement them along with educational strategies.
-Improving knowledge and attitudes of PHC physicians in depression management.
-Train nurses in depression management, ongoing support, and brief medication counseling.
-Introduce support workers such as case managers, actively follow up treatment, support through joint consultation and follow up.
3. Collaborative and stepped care with improved and integrated working relationships between primary care and secondary services by incorporation of patient education and shared care between the primary care physician, psychiatrists and psychologists.

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