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RESEARCH ARTICLE

PREVALENCE OF DEPRESSION AMONG PRIMARY HEALTH CARE ATTENDEES USING PHQ 9 IN AL MADINAH, SAUDI ARABIA

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Abstract

Introduction:-

Depressive disorders defined by WHO as "disorders that characterized by sadness, loss of interest or pleasure, feelings of guilt or low self-worth, disturbed sleep or appetite, feelings of tiredness, and poor concentration". The symptoms of patient can be presented as very mild and escalate to serious symptoms such as suicide.[1] At the period between 2005 and 2008 about 20% of patients who visited the primary health care in the United States had some depressive symptom.[2]

According to WHO the percentage of the people with depression in 2015 globally is estimated to be 4.4% , depression is affecting around 322 million peoplein the worldcommon among females 5.1% than males 3.6%.[1]

Depression is more common among females than males.[1], [3] The prevalence rate of depression varies by age, reaching the peak in older population.[1]The prevalence of depression varies from study to another depending on the characteristics of samepopulation or differences in methodology like in studies conducted in UAE the prevalence varies from12.5–28.6%.[4]

Rationale

Depression is one of the common diseases that increases in each year and affecting more people. Sofollowing this particular topic is important to know what is new and to update old information . The author encountered a number of depression patients in the daily practice.

General Objective

Is to measure the prevalence and associated factors of depression among primary health care attendees using PHQ 9 In AL Madinah .

Specific Objectives

To measure the prevalence of depression among primary health care attendees.
To calculate the different types of severity of depression among primary health care attendees.
To find out the possible association between depression and the different demographic variables .

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Literature Review:-

In Kingdom Saudi Arabia, prevalence of depression has been estimated in many studies, like in 2002, anxiety and depression were about 18% among adults population in central Saudi Arabia.[5]

In Asir, Al Qahtani et al., reported a 27% prevalence of depression in 2008.[6] In the south-eastern region, Abdul Wahid et al. in 2011, reported the prevalence of depression about 12%, with 6% as severe cases[7]. In Riyadh, Al-Qadhi et al., noted prevalence of screened depression to be 49.9% among the adult visitors to primary healthcare, based on PHQ2 and PHQ9, of the screened adult, mild depression was 31%, moderately depression was 13.4%, moderate to severe 4.4% and severe were 1%[8].

In 2016 a study done at Taibah University in Madinah, Saudi Arabia overall prevalence of depression was 28.3% and it was significantly high among males who were not married and had clinical diseases.[9]At the same university a study was comparing the prevalence of Depression and Anxiety among Medical Students and with Non-Medical Students the result was 33% of medical students considered to have moderate from of depression, and 4% of them had severe depression in Comparison to Non-Medical Students the result was 53% of them had moderate depression and 7% had severe depression.[10]

In Tabuk patients who were married had a decreased risk of depression, p 0.001. Patients who said they didn't have any social support were more likely to be depressed than those who said they did, p = 0.041. Patients having a problematic marriage had an almost four-fold increased risk of depression compared to those who did not have a disordered marriage (p = 0.019). Financial problems were a cause of increase the risk of depression two-fold compared to those who did not have financial problems (p = 0.019). In addition, patients who reported sleep difficulties were nearly twice as likely to be depressed as those who did not, p = 0.016.[11]In Al-Damam, a cross-sectional study on 342 hypertensive patientsshowed depression is common among hypertensive patients and associated with multiple risk factors like older age(p= 0.019), low income (p= 0.003), physicalinactivity(p= 0.051), more than 3 years complain of hypertension(p= 0.049).[12]

In Al-Madina, Aljehani Yasmeen et. al., conducted a a cross-sectional study on 216 mothers attending the primary health care centers,the prevalence of depression was 19.4% . Primiparous women were almost twice as likely to develop postpartum depression as multiparous women, there is also increased risk of postpartum depression with vaginal delivery in compare with cesarean section.[13]Another cross-sectional study wascarried out in Al-Madina to know the prevalence of anxiety and depression, study included 79.4% females and 20.6%males, average of the total depression of theparticipants was mild depression and the anxiety level was medium.[14].

Alzahrani et al.conducted a cross-sectional studyamong adult patients with T2DMin five public primary care centers in the western region of Saudi Arabia using depression, anxiety, and stress scale (DASS-21) questionnaire.The prevalence of depression was 33.8%. Female gender,elevated hemoglobin A1c, the presence of comorbidities, and a positive family history of chronic diseases were significant predictors of mental illnesses in comparisonn to adherence to diabetes management and older age which was protective[15] .

A cross-sectional study conducted in AlAhsa, Saudi Arabia. The participants were all patients attending primary health centers, PHQ-9 questionnaires used to assess Prevalence of Depression. 314 patientswere screened79.6% women and 20.4% men, 97 (30.9%) of the participants were found to be depressed. 22% had mild depression, 6.1% had moderate depression, and 2.8% had moderate to severe depression. depression was identified in 75% of the participants due to drug side effects, positive family history was identified in 45.7%, and 36.5% due to stressful events. Other factors such as gender, age, chronic health problems and type of work were not significantly associated with the development of depression.[16]

Methodology:-

Study design:

A cross sectional study.

Study area:

This study was done in Al Madinah Al Munawwarah which is located in the Hejaz region of western Saudi Arabia.[17] The 2020 estimated population of the city is 1,488,782.[18]

Study population:
All patients Who visited primary health care centres the for any medical or dental health problems.

Inclusion criteria:
Both genders who visited primary care for any medical or dental consultation.
Age of the patients must be from 15 to 80 years old.

Exclusion criteria:
Acutely ill patients
Less than 15 years old and who are older than 80 years old.

Sample size:
Sample size was calculated by using Epi info program. Epi Info is statistical software developed by CDC for epidemiology.

The calculation was according to the following:
Population size is the mean total nomber of pateint size
Expected frequency: 50%
Acceptable margin of error: 5%
Confidence Interval: 95%
So the sample size is: 384.
The researcher target is to include 400 participants in the study to avoid loss of cases.

Sampling technique:
One primary health care center was randomly selected from each geographical direction (east , west, north and south) . In each primary health care center ,the Selection of patients was randomly during measuring the vital sings.

Study tool:
Researcher used a validated structured, translated Arabic questionnaire of PHQ 9 which is used for screening of depression.[19] A number of studiesworldwide have been done successfullyto assess the validity of the PHQ 9 questionnaire.It is one of the most common instruments used for depression screening.[20], [21]. Nine criteria are rated according to how much they bothered the patient in the last 2 weeks. Scores for PHQ-9 were used to determine the presence of depression, and their severity depends on the following criteria : 1 - 4 no depression, 5 - 9 mild, 10 - 14 moderate, 15 -19 moderately severe, and 20 - 27 severe.[22]. PHQ-9 appears to be reasonably sensitive and specific for depression in the meta-analysis of 11 studies with 82% sensitivity (95% CI 77%-86%), and 83% specificity (95% CI 76%-88%).[23]

Data collection technique:
A questionnaires was completed by the researcher by interviewing the patients after taking their consent. The questionnaires was completed and collected immediately at the same time . The researcher appled same steps to all selected primary health care centers . After that data was entered by the researcher into a personal computer for analysis.

Data analysis:
Data was analyzed by using SPSS virgin 21 software. As descriptive , univariate and multivariate analysis. Statistical significance will be set at the 5% level (P-value <0.05).

Pilot study:
Preliminary study was conducted on 10 participants who fulfill the inclusion criteria before starting the study by two weeks. All data collected from this study will not be included.

Ethical considerations:
Ethical approval was obtained to conduct this study from the research ethical local committee of al-Madinah health affairs. The consent form, which explains the purpose of this study was obtained from every participants . The confidentiality was guaranteed to all participants.

Limitation:
This study has some limitation like time and limited sample size form PHC

Budget:
This study is self-funded.

Table (1-1):- Prevalence of age, height and wight among PHC attendees in AL Madinah.

	Participants		Missing		Total		Mean	Std. Deviation	P-value
	N	%	N	%	N	%			
Age	320	(94.4)	19	(5.6)	339	(100)	38.12	16.705	.792
Weight	315	(92.9)	24	(7.1)	339	(100)	72.93	19.142	.008
Hight	316	(93.2)	23	(6.8)	339	(100)	169.1	78.859	. 611

Results:-

Sociodemographic characteristics of study population

450 Questionnaire was distributed randomly to every patientvisited the primary healthcare centers, 339 accepted to be screened for depression by using PHQ9 questionnaire . Male were (N=212, 62.9%) and female were (N=125, 37.1%) . The mean age was38.12 with Std. Deviation16.705, and the maximum was 77 years and the minimum age was15 years.

Table 1-1 demonstrates the statistics of age, hight, and weight. The mean weight was 72.93 with Std. Deviation19.142. Age and hight were not significant predictors with depression severity with P-value .792 and . 611respectively , but weight was significantly predictors for depression severity P-value .008 . [For more details please read table 1-1]

The participants were mostly males N=212 (62.9%), while the female were N=125(37.1%). The Saudi population were more common than the non-Saudi, N= 282(86.2%), and N= 45(13.8%)respectively. 58.1% were working and 41.9% were not. The participant who Used medicine regularly were N=76 (23.3%), and the those not were 250(73.7%). The participants most of them were educated N=320 (94.6%) and the non educated N=8 (2.4%) . (Figure 2)

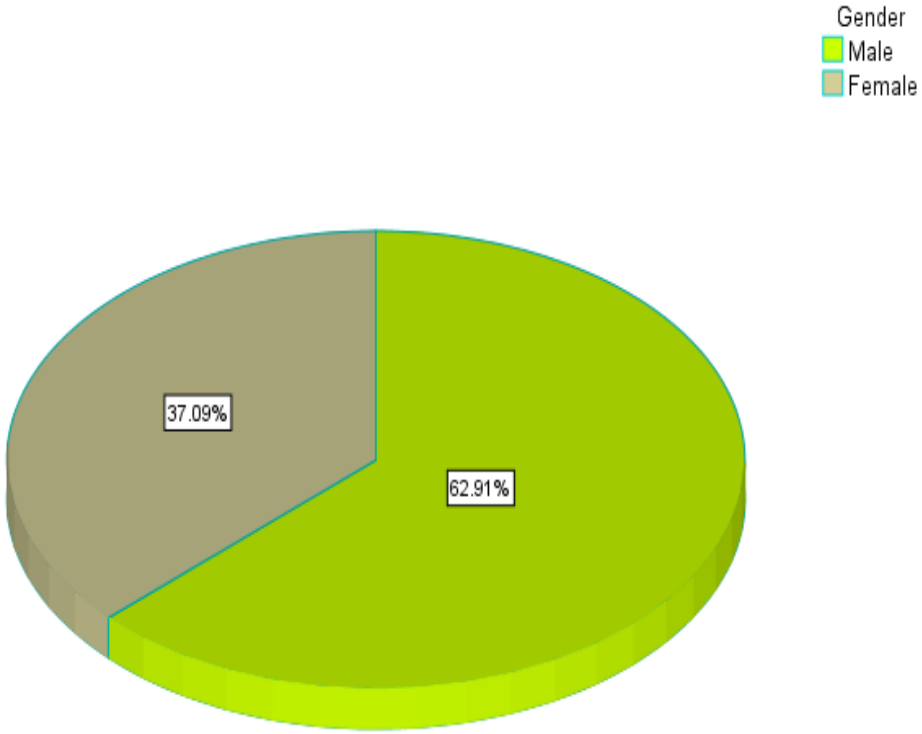
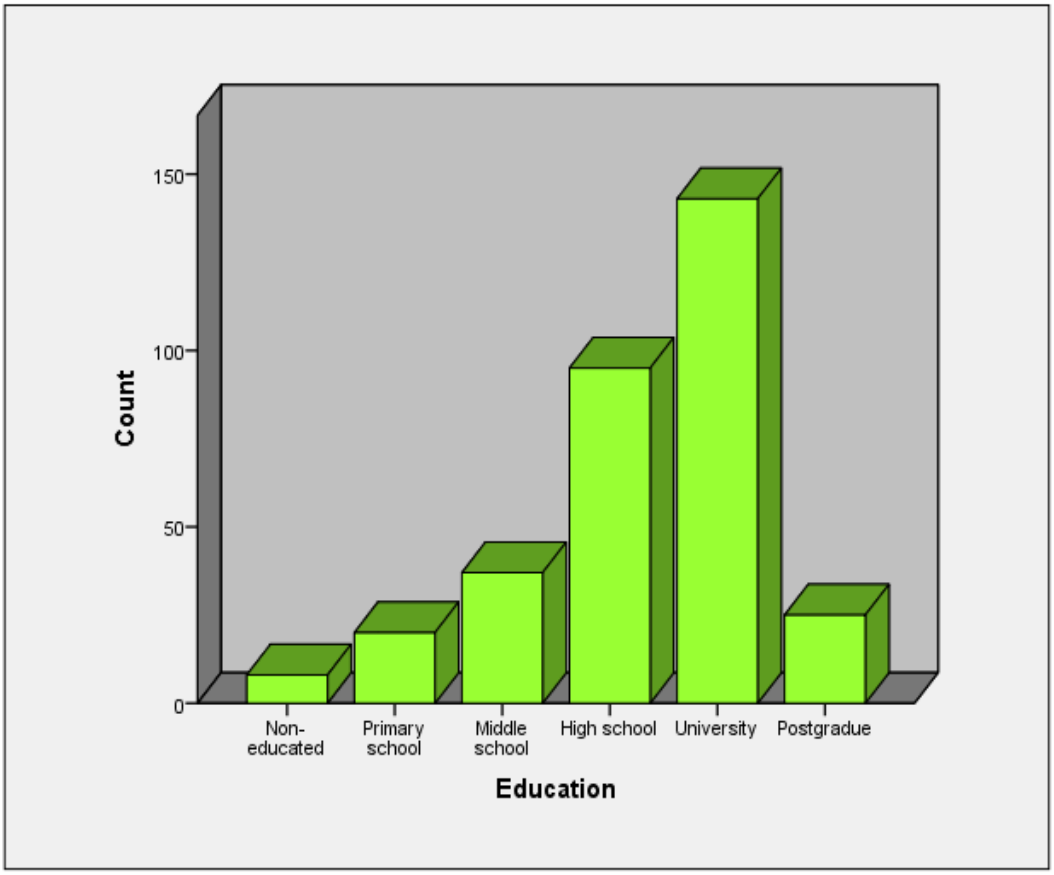


Figure 1:- The prevalence of both gender among PHC attendees in AL Madinah.

Table (1-2):- Sociodemographic characteristics of among PHC attendees in AL Madinah.

	Participants		Missing		Total	
	N	(%)	N	(%)	N	(%)
Gender			**2**	(0.6)	**337**	(**99**.4)
Male	212	(62.9)				
Female	125	(37.1)				
Nationality			**12**	(3.5)	**327**	(**96.5**)
Saudi	282	(86.2)				
Non-Saudi	45	(13.8)				
Level of education			**11**	(**3.2**)	**328**	(**96.8**)
Non-educated	8	(2.4)				
Primary school	20	(6.1)				
Middle school	37	(11.3)				
High school	95	(29.0)				
University	143	(43.6)				
Postgraduate	25	(7.6)				
Work			**10**	(**2.9**)	**329**	(**97.1**)
Working	191	(58.1)				
Not Working	138	(41.9)				
Use medicine regularly			**11**	(**3.2**)	**328**	(**96.8**)
No	250	(73.7)				
Yes	76	(23.3)				

Figure 2



The participants most of them were educated 320 (94.6%) and the non educated 8 (2.4%) .

Prevalence of depression

The study foundthe point-prevalence of screened depression to be N=109 (32.2%) among the adult visitors to primary healthcare centres, based onthe predetermined cut-off limits on screening instruments. The normal prevalence of participant were N=230 (67.8%) (Figure 3), Of the screened depressed, mild were N=83 (24.5%), moderatelydepressed were N=13 (5.6%), moderate to severe were N=3 (0.9%) and severeley depressed were N=4 1(1.2%) (Table 2).

Table (2):- Prevalence of depression among PHC attendees in AL Madinah.

Prevalence of depression	N	(%)
Depression	109	(32.2)
Normal	230	(67.8)
Severity of depression	N	(%)
Mild	83	(24.5)
Moderate	19	(5.6)
Moderateley Severe	3	(0.9)
Severe	4	(1.2)

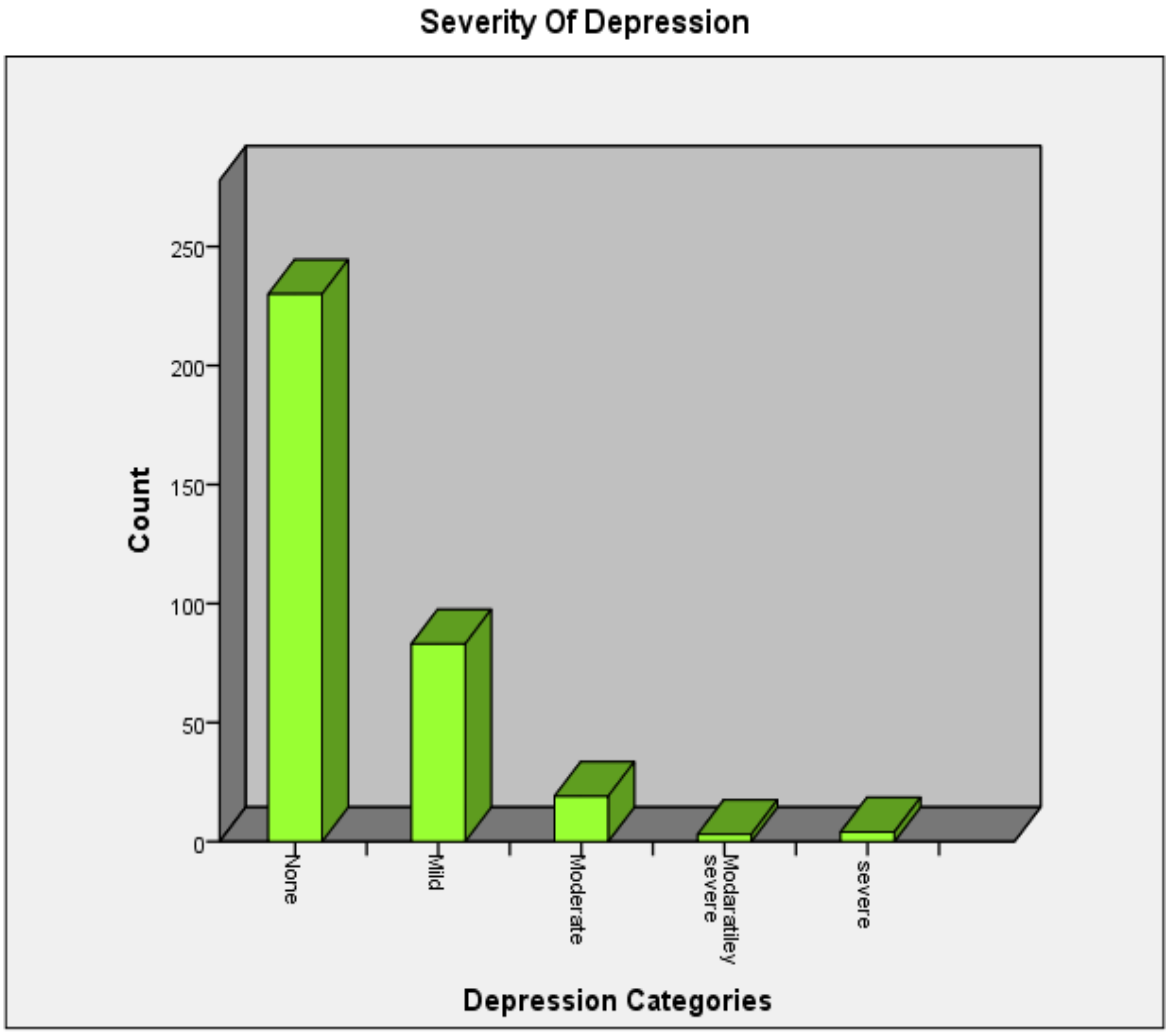


Figure 3:- Level of severity of depression among PHC attendees.

Mild depression was the most common typeN=83 (24.5%).

Associationfactors with depression:

Gender

The prevalence of males who didn't have depression was138 (65.1%), and they who had depression74 (34.9%). In other hand, 72% of female appear they didn't have depression, and 28% had depression. P-value: 0.191 , and results showed no significant association between depression and gender.

Taple 4:- Association between gender and Prevalence of depression among PHC attendees in AL Madinah.

	No Depression		Depression		Total	
Gender	N	%	N	%	N	%
Male	138	(65.1)	74	(34.9)	212	(62.5)
Female	90	(72.0)	35	(28)	125	(37)
Chi-square (1.714) P value (.191)						

Nationality

The Saudi participant in this study were 282, 66.3 % of them they didn't have depression in and about 34% had depression.The Non Saudi population who participate were 45, 33 of them didn't have depression and the 12 of them are depressed. The results showed no significant association between depression and nationality , P value : **.351** .

Taple 5:- Association between Nationality and Prevalence of depression among PHC attendees in AL Madinah.

		No depression		Depression		Total	
		N	%	N	%	N	%
Nationality	Saudi	187	(57.2)	95	(29)	282	(86.2)
	Non-Saudi	33	(10.1)	12	(3.6)	45	(13.7)
Chi-square (.869) P value (.351)							

Education

Non educated who participated in this study, Where eight persons, three had depression and five were normal. The number of patients who Choose primary school was N=20, sixteen of them had no depression, and four of them were depressed. About 11%.Of participant choose middle school, the percentage of high school was 29%, and about.43.6% choose university. The percentage of postgraduates was7.6%. The results showed no significant association between depression and level of education , P value : .630 .

Taple 6:- Association between Education level and Prevalence of depression among PHC attendees in AL Madinah.

Education level	No depression		Depression		Total	
	N	%	N	%	N	%
Non-educated	5	(1.5)	3	(0.9)	8	(2.4)
Primary school	16	(4.9)	4	(1.2)	20	(6.1)
Middle school	23	(7)	14	(4.3)	37	(11.3)
High school	65	(19.8)	30	(9.1)	95	(29)
University	92	(28)	51	(15.5)	143	(43.6)
Postgraduate	19	(5.8)	6	(1.8)	25	(7.6)
Chi-square(**3.459**) P value (.**630**)						

Working

The number of participants who are working were 191 (58.1%), 61 of them (18.5%) had depression, and 130 Of them (39.5%) were normal. The number of working population were equal 138 person, 46 of them(14.0%) had

depression, and 92 of them (28%) appeared to be normal. The result showed no significant association between depression and working , P value : .790 .

Using of medication regularly

The number of participants who use medication regularlywere 76 patients , 46 of them (14.1%) were non depressed, and 30 of them (9.2%) were depressed. The number of participants who were not using medication regularly And the depressed 75 persons (23%). There was no significant association between depression andregular use of medication, P value : .122 .

Taple 8:- Association betweenuse of medication regularly and Prevalence of depression among PHC attendees in AL Madinah.

		No depression		Depression		Total	
		N	%	N	%	N	%
Do you use medication regularly?	No	175	(53.7)	75	(23)	250	(76.7)
	Yes	46	(14.1)	30	(9.2)	76	(23.3)
Chi-square(2.396) P value (.122)							

Comorbidity

The prevalence pf participants who were suffering from one comorbidities or more and had depression were 31 (9.3%), and the participants who were not and appeared to be depressed were 76 (22.8%). There was no significant association between depression and comorbidity, P value : .770 .

Taple 9:- Association between comorbidity and Prevalence of depression among PHC attendees in AL Madinah.

	No depression		Depression		Total	
Do you have Comorbidity ?	N	%	N	%	N	%
NO	164	(49.2)	76	(22.8)	240	(72.1)
YES	62	(18.6)	31	(9.3)	93	(27.9)
Chi-square(.085) P value (.770)						

Discussion:-

Out of three hundred and thirty-nine participants in this study, the estimated rate of depression in patients attending primary health care in Al Madinah city was 32.2%, most of them had mild depression, 24.5%, 5.6% had moderate depression, 0.9% had Moderateley Severedepression and 1.2% had sever form of depression. The estimated prevalence of depression in the same city was taken from a study done at patients with CKD on hemodialysis at King Fahad Hospital 24.6% of them had depression.[24] In 2016 a study done at Taibah University in Madinah, Saudi Arabia overall prevalence of depression was 28.3%[9]. The university student appear to be at high risk of moderate to sever depression in comparison with PHC attendees ,33% of medical students considered to have moderate form of depression, and 4% of them had severe depression. Thenon-medical students had a result of 53% with moderate depression and 7% had severe depression. While the prevalence in this study was5.6% for moderatedepression, 0.9% for moderate to severeand 1.2% severeley depression [10].

In comparison to our study, the prevalence was 32.2%, some local studies had lower prevalence like in Asir city the reported prevalence of depression in 2008 was 27%.[6] In the south-eastern region, Abdul Wahid et al. in 2011, reported the prevalence of depression about 12% [7]. On other study prevalence was higher like in Riyadh, the prevalence of screened depression among adult primary care attendees was 49.9%.[8] Internationally, 8.1% of American adults 20 years and older experienced depression from 2013 to 2016.[27] In South India the prevalence was 28.4% reported among primary care participants, andin Thailand it was 29.2% in primary care setting .[28], [29]

Gender and level of education were both not significant, many researchers found a significant association between female gender and depression. Other studies have also found that depression tends to be associated with a lower level of education.[30][31][8] On the opposite sidealso found significant relationship of depressive symptoms with higher level of education.[8]

In this study, results showed non-significant association between depression and age similar to that research which was conducted in Al Madinah to assess the prevalence of post partum depression in primary health care centersand

found no associationbetween post-partum depression and women`s age[13], on other hand, there were studies found that older age had significant association with depression[32][12], however other study found that depression was significantly associated with young adults those aged 18-29 years[33].

Furthermore, results of current study found that there wasn't significant association between job status and depression, while other studies found depression was higher in unemployed participants[8][31], finally one study showed higher depression rates in employer participants in comparison with unemployed[13].

Wight was associated with depression according to in this study data with p value .008, it is reported that the prevalence of depression in obese individuals is twice as high as in those of normal weight and also in same study data showed that weight loss was associated with an improvement in mood in non-clinically depressed individuals with obesity.[34] Meta-analysis confirms a reciprocal relationship between depression and obesity. Obesity has been found to increase the risk of depression, most pronounced in clinically diagnosed depression. In addition, it has been found that depression is predictive of the development of obesity.[35] About the other factors (using of medication, comorbidity and nationality)included in this study no association between it and depression. While in other studies there was association between depression and using of medication,[16] having chronic diseases,[31]and being migrant in SaudiArabia a cross-sectional study of 400 migrant workers was conducted in the Al-Qassim region of Saudi Arabia, prevalence of depression was 20% and did not vary with length of stay or living conditions.[36]A systematic review and meta-analysis have provided an overview of the mental health impact of migrant workers and there was evidence of an increases in depression and anxiety symptoms.[37]

Conclusion:-

In this study, it was found that depression tended to be widespread among patients attending PHCCs in the Al Madina population. The prevalence of depression was 32%, and depending on the severity, the most common form was mild 24.5%, moderate 5.6%, moderate 0.9%, and severe 1.2%.The factor used in this study were not associated with depression except the weight with p value = .008

Recommendation:-

The author recommend periodic screening of depression in the primary health care centers, as it recommended by the United States Preventive Services Task Force (USPSTF)to screen depression for all adults regardless of risk factors, Also more study need to be conducted to assess the prevalence and any associated factors. About obesity there must be a more studies to assess its severity and complication, also there is needing forgovernmental support to increase the awareness about obesity and its complication.

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