Prevalence of Depression and Its Associated Risk Factors in the Primary Care Setting in Kuantan

Mohd Aznan Md. Aris[1*], Noor Azlina Halim[1] and Ramli Musa[2]

[1]*Department of Family Medicine, Kulliyyah of Medicine, International Islamic University Malaysia, Indera Mahkota, 25200 Kuantan, Pahang, Malaysia.*
[2]*Department of Psychiatry, Kulliyyah of Medicine, International Islamic University Malaysia, Jalan Hospital, 25150 Kuantan, Pahang, Malaysia.*

Authors' contributions

This work was carried out in collaboration between all authors. Author MAMA carried out all of the works for this research. Author NAH managed the data collection and entering. Author RM contributed to final data analysis and review the final manuscript. All authors read and approved the final manuscript.

Original Research Article

ABSTRACT

Aims: To determine the prevalence of depression and its associated risk factors among adults attending primary care clinics in Kuantan.
Study Design: Cross-sectional.
Place and Duration of Study: Public primary care clinics in Kuantan, Pahang between July 2008 and September 2008.
Methodology: The respondents were selected through simple random sampling among adult attendees of public primary care clinics in Kuantan, Pahang. The Malay validated version of Brief Patient Health Questionnaire (PHQ-9) was administered as a screening tool for depression. A part from social-demographic data, we also obtained information on medical illnesses and history of substances abuse. A total of 502 patients were approached and 452 respondents agreed to be enrolled in the study.
Results: The study found that 10.6 percent of them were having depression, 0.7 percent had history of drug abuse, 2.4 percent had consumed alcohol and 21.7 percent suffered from chronic illness. The study revealed that depression was significantly associated with chronic illness (OR: 2.702, 95% CI [1.409, 5.184]), and drug abuse (OR: 39.152, 95% CI

_____

*Corresponding author: Email: draznan@yahoo.com;

[1.662, 992.291]).

Conclusion: Adults with history of drug abuse or those who suffered from chronic illnesses have higher risk of suffering from depression and need greater attention from primary care providers.

1. INTRODUCTION

Many psychiatric morbidities including depression are seen at the primary care clinics [1,2] but almost one third of the cases remain undetected [3,4]. One of the contributing factors to this problem is that patients tend to present at primary care clinic with physical symptoms and overt psychological symptoms [5]. This makes the diagnosis of psychiatric morbidity difficult. The ability to identify risk factors related to depression helps doctors to identify and treat the illness.

Depression is characterized by persistent feeling of low mood, inability to experience pleasure, a sense of helplessness, hopelessness, guilt and inhibition of behavior and thinking [6]. It is reported that a lifetime prevalence of depression is between 8-16% [7] and the prevalence of depression in primary care settings is between 5-10% [8]. In any conditions, women suffer from depression more common than men [9].

In Malaysia, the overall prevalence of psychiatric morbidity among adult population in Malaysia was 11.2% [10] and the prevalence of depression among the post-partum women, adult community, elderly and nursing care have reported ranged from 6.3 to 22% [11-16].

This study was conducted to determine the prevalence of depression and its associated factors among adults who attended health clinics in Kuantan, Pahang.

2. METHODOLOGY

Five clinics were selected based on random sampling among all available government clinics in Kuantan namely: Health Clinic Jaya Gading, Health Clinic Beserah, Health Clinic Balok, Health Clinic Gambang and Health Clinic Bandar. The target populations for this study were adults (18 years till 59 years) in Kuantan district who attended the Primary Care Clinics from 2nd July to 30th September 2008.

Data were collected from using a self-administered questionnaire. The questionnaires were administered by a team of investigators headed by a family physician who is the principal researcher. A need-based training was conducted by the investigators to standardize administration of the questionnaire. The team went to these clinics twice a week in rotation.

The Patient Health Questionnaire (PHQ-9) which was developed by Robert L Spitzer and colleagues was used as a screening tool for depression. . It was developed from the Primary Care Evaluation of Mental Disorders Patient Health Questionnaire (PRIME-MD PHQ). It is a self-reported questionnaire and consists of nine questions that help to identify depressive symptoms. The PHQ Depression Severity Index score is used to calculate for the presence of depressive symptoms [17].

The Malay validated of PHQ-9 was used in this study. This PHQ-9 contains nine items and has a maximum computed score of 27 points. A review of study in 2004 by Azah confirmed that the optimization of sensitivity and specificity of the PHQ-9 for screening cases was achieved at a case cut-off score of 5 or more for depression with sensitivity of 69.0%, specificity of 60.5%. The best cut-off score for severe depression was 10 with sensitivity of 60.9%, specificity of 80.7% and positive predictive value of 38.6% [18]. In this study, the cut-off score of 10 or more had be selected as the cut-point of depression.

3. RESULTS

A total of 502 patients were selected through simple random sample and 452 respondents agreed to be enrolled in the study. The inclusion criteria were literate and aged between 18 years to 59 years old. Those refused to give consent or illiterate were excluded from the study.

Table 1 shows the characteristics of the respondents. There were 207 (45.8%) females and 245 (54.2%) males respondents. A majority of them were Malays (84.5%) and married (69.7%). Only 12 (2.7%) out of 137 of single respondents were divorced or widow among them. Most of them had formal education background at least at secondary school level (85.4%). Their income per capita ranged from RM 200 to RM 4000 per month with median income per capita of RM 332.67 per month.

One hundred and five (23.2%) of them were current smoker, three (0.7%) had history of drug abuse and eleven (2.4%) had history of recent alcohol consumption. Among the respondents, women were more likely to be younger, unemployed, nonsmokers, not involved in drug abuse and not consumed alcohol.

In this study, only 21.7% of them suffered from chronic health problems such as Diabetes Mellitus and Hypertension. Screening of depression using the Patient Health Questionnaire (PHQ)-9 revealed that 48 respondents were depressed which showed a prevalence of depression as 10.6 percent. Of these 48 respondents, 26 (54.2%) were males and 22 (45.8%) were females.

Tables 2 shows the association between depression and others factors. Majority of the depressive respondents were married, had secondary or higher educational background and self-employed/private sector. The depression also was found significantly associated with history of chronic illness and social life events such as consumed alcohol and drug abused.

Table 3 shows the multivariate analysis between social and health-related factors with depression. Multiple logistic regression tests found that two factors are significantly associated with depression. Adult with history of drug abused have 39.2 times risk to suffer from depression {OR: 39.152, 95% C.I. (1.662, 992.291)} and those who suffer from chronic illness, have 2.7 times risk to suffer from depression. {OR: 2.702, 95%C.I (1.409, 5.184)}

Table 1. Respondent Characteristics (n=452)

Characteristics	All persons (N= 452)	Male (n= 245)	Female (n=207)	p-value[+]
Age (years) [a]	33 (19)	35 (21)	32(18)	.100
Gender				
Male	245(54.2)	-	-	
Female	207 (45.8)			
Ethnicity				
Malay	382 (84.5)	210 (85.7)	172 (83.1)	.443
Non-malay	70 (15.5)	35 (14.3)	35 (16.9)	
Marital status				
Married	315 (69.7)	168(68.6)	147 (71.0)	.573
Single	137 (30.3)	77 (31.4)	60 (29.0)	
Education level				
Primary or less	66 (14.6)	37 (15.1)	29(14.0)	.743
Secondary or higher	386 (85.4)	208 (84.9)	178 (86.0)	
Income per capita [a]	332.67 (432.14)	333.75(452.8)	285.71(340.0)	.057
Occupation				
Not working	115 (25.4)	30 (12.2)	85 (41.1)	
Government	125 (27.7)	62 (25.3)	63 (30.4)	<.001
Self-employed / private	212 (46.9)	153 (62.4)	59 (28.5)	
Smoker				
Current smoker	105 (23.2)	103 (42.0)	2 (1.0)	<.001
Non-smoker	347 (76.8)	142 (58.0)	205 (99.0)	
Drugs Abused				
Yes	3 (0.7)	3 (1.2)	0 (0)	.110
No	449 (99.3)	242 (98.8)	207 (100)	
Consumed Alcohol recently				
Yes	11 (2.4)	11 (4.5)	0 (0)	.002
No	441 (97.6)	234 (95.5)	207 (100)	
Chronic Illness				
Present	98 (21.7)	51 (20.8)	47 (22.7)	.627
Absent	354 (78.3)	194 (79.2)	160 (77.3)	
Depression				
Present	48 (10.6)	26 (10.6)	22(10.6)	.996
Absent	404 (89.4)	219 (89.4)	185 (89.4)	

Data presented are number (%) or [a]median (interquartile range), as appropriate for variable
[+]P value for the difference in characteristics by gender, based on chi-square test or t-test, as appropriate

Table 2. Factors associated with depression among the respondents

Factors	Depression (n=48) n (%)	No Depression (n=404) n (%)	p-value[+]
Age [b]	32(18-58)	33(18-59)	.788
Gender			
Male	26 (54.2)	219(54.2)	.996
Female	22 (45.8)	185 (45.8)	
Ethnicity			
Malay	39(81.3)	343(84.9)	.509
Non-Malay	9(18.8)	61(15.1)	
Marital Status			
Married	34(70.8)	281(69.6)	.855
Single	14(29.2)	123(30.4)	
Education Level			
Primary or less	7(14.6)	59(14.6)	.997
Secondary or higher	41(85.4)	345(85.4)	
Income per capita [b]	284(20-4000)	333(29-3200)	.783
Occupation			
Not working	13 (27.1)	102(25.2)	.733
Government	15 (31.3)	110(27.2)	
Self-employed/private	20(41.7)	192(47.5)	
Smoker			
Smoker	11(22.9)	94(23.3)	.957
Non smoker	37(77.1)	310(76.7)	
Drug Abused			
Yes	3(6.2)	1(0.2)	.004
No	45(93.8)	403(99.8)	
Consumed Alcohol			
Recently	4(8.3)	7(1.7)	.005
Yes	44(91.7)	397(98.3)	
No			
Chronic Illness			
Yes	18(37.5)	80(19.8)	.005
No	30(62.5)	324(80.2)	

[b]Median (min-max); [+]significant level at p=<0.05, based on chi-square test or t-test, as appropriate

Table 3. Multivariate analysis between socio-health related factors and depression (n = 48)

	B	S.E.	Wald	df	p	OR	95.0% C.I. OR	
							Lower	Upper
Chronic Illness	0.994	0.332	8.943	1	.003	2.702	1.409	5.184
Drug	3.667	1.612	5.176	1	.023	39.152	1.662	992.291
Alcohol	-0.088	1.113	0.006	1	.937	0.916	0.103	8.112
Constant	-2.481	0.200	153.282	1	.000	0.84	-	-

4. DISCUSSION

Results of the present study show that 48 respondents were having depression which made the prevalence of depression in primary care as 10.6 percent. This percentage is comparable with previous local studies using PHQ screening instrument in which, the past studies the prevalence of depression were 8.3 %[16] and 14.4%[15].

Furthermore, the prevalence of depression in the community under study is almost similar to previous studies done in 15 countries in the world which reported to have a prevalence of 10.4% [19]. However this is lower than the prevalence of national psychiatric morbidity of 11.2% [10].

In this study, there is a significant association between presence of depression and chronic illness among the respondents. There are 37.5% depressive patients among those suffered from chronic medical illness which majority of them suffered from Diabetes Mellitus and Hypertension. This study also has proven that chronic illness is a significant risk factor for depression with a 2.7 times risk to develop it.

Studies in the past showed that the prevalence of depression was higher among females compared to males with an estimated relative risk of 1.93 [20,21]. However, in our study it shows that there is no significant difference between genders and the prevalence of depression. This could be due to selection bias as we could see the number of male participants participated in this study were higher as their counterpart. Generally, we know females have higher tendency to use the primary health facilities.

The same study it is also noted that there is a significant relationship between ethnic groups and depression [21]. Our recent study shows no significant difference between the non-minority and minority ethnic groups in relation to depression. This could be due to skewness in the distribution of subjects according to their race and gender.

In a study done in United States, there were a significant relationship between unemployment and low education level with depression [21] but there are no significant associations between depressions and both factors in our study.

This study had noted that there is no significant association between marital status and depression among the population. As compared to previous study, separated or divorced couples have a significant association with depression [21]. This could be due majority of depression in this study was among married participants which contribute to no significant association with depression in marital status.

It has been widely accepted that substance abuse such as smoking, drug abused and alcohol abused can lead to depression as it involves not only the person himself, but it can also affect other family members and the society. Substance abuse may also affect the socioeconomic status and further deteriorates the mental status of an individual. A significant of relationship is also seen in this study between alcohol and drug abuse with depression. However this is not seen with smoking. The prevalence of smoking and alcohol consumption in present study are lower than expected (23.2% and 2.4% respectively).

Among the various risk factors studied, chronic illnesses, history of recent alcohol consumption and active drug abuse have significant association with depression. On further multivariate analysis shows only those with recent alcohol consume or presence of chronic

illness has a significant association with depression with high risk to develop depression of 39.1 times and 2.7 times respectively.

5. CONCLUSION

The prevalence of depression in this study was 10.6% and the presence of chronic illness and social factors such as history of drug abuse and recent history of alcohol consumption in this study are identified as the risk factors for depression among adults attending the primary care clinics in Kuantan, Pahang. Therefore, those with those histories and presence of chronic illness should be given more attention by the health workers and the community. Identifying risk factors for depression may help primary care providers to improve the early detection of depression, which is a critical first step towards effective management.

6. STUDY LIMITATION

We identified a few limitations in this study. Firstly the distribution of subjects is not according to actual Malaysian population according to their races and gender. Malays and male gender are overrepresented in this study. Secondly, although the questionnaire used has been validated, but depending on a single self-rated measurement is subject to recall bias. It is good if the cases could be screen based on clinical judgment by a few qualified psychiatrists. However the selection and recall bias have been addressed by using simple random sampling and standardization among the raters.

CONSENT

The agreement of consent was obtained in all patients.

ETHICAL APPROVAL

The authors hereby declares that this study was approved by the Research and Ethics Committee of Kulliyyah of Medicine, International Islamic University Malaysia and it has been performed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki.

ACKNOWLEDGEMENT

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Barrett JE, Barrett JA, Oxman TE, Gerber PD. The Prevalence of Psychiatric Disorders in a Primary Care Practice. Arch Gen Psy. 1988;45:1100-1106.

2. Halverson J, Chan C. Screening for Psychiatric Disorders in Primary Care. Wisconsin Medical Journal. 2004;103(6):46-51.

3. Badamgarav E, Weingarten SR, Henning JM, Knight K, Hasselblad V, Gano AJ, Ofman JJ. Effectiveness of disease management programs in depression: a systematic review. Am J Psy. 2003;160(12):2080-2090.

4. M. Parameshvara Deva. Psychiatry for General Practitioner. Med J Malaysia. 1997;52:99-101

5. Scicchitano J, Lovell P, Pearce P, Marley J, Pilowsky I. Illness Behavior and Somatization in General Practice. J Psychosom Res. 1996;41(3):247-254.

6. Ronald C. Kessler, Patricia Berglund, Olga Demler, Robert Jin, Doreen Koretz, Kathleen R. Merikangas, A. John Rush, Ellen E. Walters, Philip S. Wang. The epidemiology of major depressive disorder. Results from the national co-morbidity replication (NCS-R). JAMA. 2003;289(23):3095-105.

7. Zainab AM, Pereira XV. Depression in primary care, Part 1: Screening and Diagnosis. Mal Family Physician. 2007;2(3):95-101.

8. Katon W., Schulberg H. Epidemiology of depression in primary care: Developing guidelines for treating depressive disorders in the primary care setting. General Hospital J. 1992;14(4):237-247.

9. Bland RC. Epidemiology of affective disorders: a review. Can J Psychiatry. 1997;42:367-377

10. Ministry of Health Malaysia. Psychiatric Morbidity, a Report of the Third National Health and Morbidity Survey, 2006. Institute of Public Health 2008.

11. Afiah SN, Azhar S. Factors associated with depression among elderly patients in a primary health care clinic in Malaysia. Asia Pacific Family Medicine. 2003;2:148-152.

12. Azidah AK, Shaiful BI, Rusli N, Jamil MY. Postnatal depression and socio-cultural practices among postnatal mothers in Kota Bahru, Kelantan, Malaysia. Med J Malaysia. 2006;61(1):76-83

13. Aznan MMA, Samsul D. Physical and Mental Health Problems of the Elderly in Nursing Homes in Kuantan, Pahang. 2007.The Int Med J Mal. Vol.1.

14. Aznan MMA, Samsul D, Jamal AR, Niza S. Functional Disabilities and Its Associated Factors among Elderly Patients in Primary Care Clinic. Int Med J. 2009;16(4):251-256.

15. Ruzanna Z, Maniam T, Marhani M,Khairani O, Pervesh K. Psychiatric morbidity among adult patients in a semi-urban primarycare setting in Malaysia. Int Journal of Mental Health Systems. 2009;3:13.

16. Sherina MS, Rampal L, Azhar MZ. The Prevalence of depressive Symptoms and Potential Risk Factors That May Cause Depression among Adult Women in Selangor. Mal J of Psychiatry e-journal. 2008;12(22).

17. Spitzer RL, Kroenke K, Williams JB. Validation and utility of self-report version of PRIME-MD: the PHQ primary care study. JAMA. 1999;282:1737-1744.

18. Azah MNN, Juwita S, Bahri S. A Study on Validation of Brief Patient Health Questionnaire (PHQ-9) Among Adult Attending Family Medicine Clinic. Int. Med. J. 2005;12(4):259-263.

19. Parameshvara Deva M. Depressive Illness - The Need for a Paradigm Shift in Its Understanding and Management. Med J Malaysia. 2006;60(1).

20. Stephen M. Stahl. Essential Psychopharmacology of Depression and Bipolar Disorder (first edn.). Cambridge University Press, Cambridge; 2000.

21. Gallo JJ, Royall DR, Anthony JC. Risk Factors for the Onset of Depression in Middle Age and Later Life. Soc Psychiatry Epidemiol. 1993;28:101-108.

Peer-review history:
The peer review history for this paper can be accessed here:
http://www.sciencedomain.org/review-history.php?iid=542&id=12&aid=4747