ORIGINAL RESEARCH

The Prevalence of Depression Among Elderly Patients with Type 2 Diabetes in a Tertiary Government Hospital*

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Background: The prevalence of diabetes for all age groups is estimated to be 2.8% globally in the year 2000 affecting more men than women. Based on the 2014-2016 annual census of the Department of Family and Community Medicine at EVRMC, diabetes has been one of the leading causes of consultation at the Out-Patient Department of which 69% were elderly. This disease not only causes both macro and microvascular lesions resulting to psychological and psychosocial impacts leading to depression.

Objective: To determine the prevalence of depression among elderly patients with type 2 diabetes in a tertiary government hospital from January to June 2017.

Materials and Methods: This is an analytical study on the association of the socio-demographic characteristics and adherence to medication among elderly diabetics with depression. Those diagnosed with T2DM who could read and write were screened for depression using the Geriatric Depression Scale.

Results: A total of 110 elderly diabetic patients were seen. Of these, only 75 of them could read and write and selected as subjects. Thirty-one or 41.0% of them turned positive for depression. Socio-demographic characteristics of elderly diabetics with depression showed that 55% were females, mostly belonging to age group 60-69 years old (77%), married (58%), who lived with their spouses(58%), unemployed (42%), mostly with elementary education (45%) and belonging to the lower socio-economic class (97%). Their financial support mainly comes from their children (45%). Twenty or 87% of the subjects with depression were adherent to their medication.

Conclusion: Age is significantly associated with depression in elderly diabetics because as they grow older, they are faced with physical, psychological and social role changes that challenge their sense of self and capacity to live happily. Adherence to medication is important among elderlies with diabetes.

Key words: prevalence, type 2 diabetes mellitus, depression

Introduction

Diabetes has been known to affect 422 million people worldwide and was known to cause 1.6 million deaths in 2015 according to the World Health Organization.[1] A prevalence of 6.7% adults with diabetes or 3.4 million in a population of 51 million has been recorded by the International Diabetic Federation last 2009.[2] It is one of the most rapidly increasing chronic conditions.[3] A quarter of people over the age 65 years have diabetes and this proportion is expected to increase rapidly

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in the coming decades.[4] According to a 9-year cohort study, there is an alarming growth of diabetes, Impaired Fasting Glucose, and Impaired Glucose Tolerance in the country. This warrants early aggressive intervention for prevention and management.[5,6] It has also been stated that the Philippines has been ranked in the top 15 prevalence with diabetes, and is a home with more than 4 million diagnosed to have the disease.[7] Wherein, Type 2 Diabetes has been found out to be the most common type of diabetes with a high prevalence rate found among the richest, those living in urban areas and in the elderly population of both sexes.[8] To date, Diabetes has been one of the leading causes of consultation of elderly patients in the Department of Family and Community Medicine Out-Patient Clinic in Eastern Visayas Regional Medical Center.[9]

The chronological age of 60 and above have been widely accepted to define the elderly in most developing countries. A growth of this population is estimated to increase to 22% within 35 years and expected from 900 million to 2 billion.[10] This age is considered vulnerable as it is associated with lack of support either socially, economically and even physically. The limited abilities of the elderly when it comes to physical activity and functionality make them more frail and susceptible to disease. It is also at this advancing age where they deal with not just one health problem which in turn not only affect the patient per se but the entire family.

We should note that every physical problem has an emotional component, considered as a geriatric giant is depression which accounts on 7% of the general older population.[11] Undiagnosed depression among these population poses a struggle if not identified early and may affect the management of not just diabetes but other co- morbidities as well.

The objective of the study was to determine the prevalence of depression among elderly patients with Type 2 Diabetes in the Department of Family and Community Medicine Out-Patient Clinic of a tertiary government hospital.

Materials and Methods

Study Design

This is a descriptive study with analytical component.

Research Locale

Eastern Visayas Regional Medical Center, Department of Family and Community Medicine, Out-Patient Clinic

Duration of Study

One year

Study Population and Sampling

All elderly patients who were diagnosed to have Type 2 Diabetes Mellitus who could read and write only were included in the study. Excluded were elderlies diagnosed with psychiatric conditions.

A routine consultation on elderly diabetic patients was done at the Family Medicine Out-Patient Department. It included assessment for the presence and absence of depression using the Geriatric Depression Scale (GDS). All patients who screened positive for depression were considered respondents and the patients were automatically informed regarding the study. An informed consent was given and discussed with the patient as he agreed to participate voluntarily. The respondent was given a copy either in English or "Waray-Waray" to voluntarily sign. An interview questionnaire was filled up by the patient. All data extracted from the patient were dealt with utmost confidentiality and used only for this study.

Data Processing and Analysis

The data gathered were processed with the help of the International Business Machines-Statistical Package for Social Sciences (IBM-SPSS) computer program. For the descriptive data, percentages and proportions were used.

For the analytic data, chi-square test for association using the IBM-SPSS.

Results

There were 273 diabetics who sought consultation from January to June, 2017. Of these, 110 were elderlies. Those who could not read and write and those with psychiatric problems were excluded in the study.

A total of 75 elderly diabetics were screened and 31 (41.0%) of them showed positive for depression.

Sociodemographic characteristics of the cases with depression showed that 24 (77%) belonged to age group 60-69, while 7 (23%) were between age group 70-79 years old. Majority of the subjects were female (55%), married (58%), who lived with their spouse (55%), had elementary education (45%), with low socio-economic status (97%), whose main sources of financial support were their children (45%). (Tables 1 & 2)

Table 3 shows that 27 of the 31 subjects (87%) with depression, were adherent to medication while 4 patients or 13% were non-adherent.

Table 4 shows that among the 31 elderly diabetics with depression, only age has significant association with depression computed at a p-value of <0.05. Other socio-demographic characteristics were not significantly associated with depression. There was also no significant association between adherence to medication and depression.

Discussion

Depression according to the World Health Organization is a common mental disorder in late life characterized by sadness, loss of interest or pleasure, feeling of guilt or low self-worth, disturbed sleep and appetite, feeling of tiredness and poor concentration.[12] A study was conducted in one province using the Geriatric Depression Scale where 1/4 of this elderly population showed a 6.6% rate of depression.[13]

Table 1. Socio-demographic characteristic of elderly diabetic patients with depression seen at the EVRMC Family Medicine Out-patient Department from January to June, 2017.

Variables		N	%
Age in years	60-69 years old	24	77
	71-80 years old	7	23
	81 years old and above	0	0
	Total	31	100
Sex	Male	14	45
	Female	17	55
	Total	31	100
Marital Status	Single	1	3
	Married	18	58
	Living-in	4	13
	Widow	5	16
	Separated	3	10
	Total	31	100
Living Arrangement	Living alone	1	3
	Living with child/children	8	26
	Living with Spouse/Partner	17	55
	Others	5	16
	Total	31	100
Occupational Status	Retired	10	32
	Unemployed	13	42
	Employed	8	26
	Total	31	100
Main source of financial support	Self-employed	6	19
	Children	14	45
	Pension	8	26
	Savings	3	10
	Total	31	100
Educational Attainment	Elementary	14	45
	Secondary level	7	29
	College level	4	7
	Post Graduate	5	16
	No formal education	1	3
	Total	31	100
Perceived Socio - Economic Status	Low	30	97
	Middle	1	3
	High	0	0
	Total	31	100

Table 2. Prevalence of depression among elderly diabetics seen at the EVRMC Family Medicine Out-Patient Department from January to June, 2017.

Particulars	No.	%
Elderly Diabetics without Depression	44	58.66
Elderly Diabetics with Depression	31	41.0
Total	75	100

Table 3. Adherence to medications among elderly diabetics with depression seen at the Family Medicine Out-Patient Department from January to June 2017 a t EVRMC.

Elderly Patients with Depression	No.	%
With adherence	27	87
Without adherence	4	13
Total	31	100

In this study, 31 (41.0%) of the elderly diabetics had depression. Majority were females mostly 60-69 years of age. Reports showed that females are more susceptible to depression than males. This is shown in similar findings from meta-analysis about depression in the elderly. This is probably because women have biological, hormonal and social factors that interplay leading one to develop a state of depression.[14,15] The findings of this study showed that majority of the elderlies were either living with their spouse or children, in whom they can find financial support. This depicts a Filipino family who live together to lend support in anything that may come along in their daily life. Children's love and support for old parents are deeply-rooted Filipino values.

A study in Europe showed that there is a high prevalence of depression in the low socio-economic class.[16]

Contrary to popular beliefs, depression is not a rural part of aging that is often reversible with prompt and appropriate treatment. This is common in the elderly

Table 4. Association between socio-demographic factors, adherence to medication and depression among elderly diabetic patients seen at the Eastern Visayas Regional Medical Center, Family Medicine OPD From January to June 2017.

Particulars	No. Elderly DM Patients (N%)	P value (95% CI)
A. Depression and Socio-demographic Factors		
Age in years		.008
60-69 years old	49 (65%)	
71-80 years old	26 (35%)	
81 above	0	
Sex		.122
Male	24 (32%)	
Female	51 (51%)	
Marital Status		.541
Single	5 (6.7%)	
Married	46 (61.3%)	
Live-in	4 (5.3%)	
Widow	14 (18.7%)	
Separated	6 (8.0%)	
Living Arrangement		.590
Living alone	4 (5.3%)	
Living with children	22 (29.3%)	
Living with spouse/partner	41 (54.7%)	
Others	8 (10.7%)	
Occupational Status		.471
Retired	19 (25.3%)	
Unemployed	30 (40.0%)	
Self-employed	26 (34.7%)	
Main source of financial support		.579
Self-employed	23 (30.7%)	
Children	28 (37.3%)	
Pension	16 (21.3%)	
Savings	8 (10.7%)	
Educational Attainment		.260
Elementary	24 (32%)	
Secondary	21(28%)	
College	9 (12%)	
Post graduation	19 (25.3%)	
None	2 (2.7%)	
Perceived Socio-Economic		.333
Status	65 (86.7%)	
Low	7 (9.3%)	
Middle	3 (4.0%)	
High		
B. Depression and Adherence to Medication		
Adherence to Medications		.927
With adherence	65 (86%)	
Without adherence	10 (13.3%)	

because most of them suffer from chronic health conditions. If left untreated, it may result to physical, cognitive and social impairment as well as delayed recovery from mental illness or surgery, increased health care utilization and suicide.[17] Age has a significant association for developing depression among elderly diabetics as shown in the study. Reports from a meta-analysis revealed that depression in the elderly has something to do with decreased cerebral blood flow and reduced whole blood brain glucose metabolic rate.[18] This illness is reported to have 1.4-3 times more likely to result in patients with diabetics compared to non-diabetics.[19]

As to association between depression and adherence to medication, the findings showed no significant relationship between them. This is contrary to a previous study that poor adherence to medication is more likely to occur among those with depression.[20,21] Likewise, the negative effects of depression and diabetes increase the risk of suicide among the elderlies. Though not given much attention in the Philippines, a lack of self-worth and lowered self-esteem may bring about lack of willingness of the patient to cooperate when it comes to health management.

Conclusion

Depression becomes more common as one ages and is often unrecognized or undiagnosed among the elderly population. It poses a struggle if not identified early and may affect the management of not just diabetes but other co-morbidities as well. Among the socio-demographic characteristics of elderly diabetics, only age has shown significant association with depression. Studies revealed that elderlies are faced with numerous physical, psychological and social role changes that challenge their sense of self and capacity to live happily.[22] The presence of a strong support system in the family also results to adherence to medication even among those with depression.

Recommendations

It is recommended that this study be replicated on a bigger sample. It is also recommended that routine screening for depression among elderly diabetics be done so that depression could be detected early and managed promptly.

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