COMPARISON OF QUALITY OF LIFE OF TYPE TWO DIABETIC PATIENTS WITH AND WITHOUT DEPRESSION- STUDY IN A TERTIARY CARE CENTRE

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ABSTRACT

BACKGROUND

Depressive disorders are one of the most common mental and behavioural disorders in patients with diabetes mellitus. This is an effort to compare the quality of life of type 2 diabetic patients with and without depression.

MATERIALS AND METHODS

This study was conducted in the diabetic clinic of a tertiary care hospital in Thiruvananthapuram district of Kerala as a hospital-based case control study. The case group consisted of 80 patients aged ≥18 years, with type 2 diabetes mellitus, attending the diabetic clinic and with Hospital Anxiety and Depression Scale (HADS)- depression subscale score ≥ 8 and the control group consisted of 80 patients of the same age group, with type 2 diabetes mellitus, attending the clinic during the same period, with HADS depression subscale score less than 8. Data was collected after taking informed consent. Quality of life was assessed using RAND (Research and Development) 36 item Health Survey (Version 1.0). Mann Whitney test was applied. p value of <0.05 was considered statistically significant.

RESULTS

Statistical analysis showed that the mean scores obtained for patients with depression were lower compared to patients without depression in all the 8 scales of RAND 36 Item Health Survey assessing quality of life.

CONCLUSION

Evaluation of quality of life revealed that depressed individuals with type two diabetes mellitus have a self-reported reduction in quality of life than non-depressed individuals with type two diabetes mellitus. So, screening diabetic patients for depression, and managing depression adequately, will improve the quality of life of diabetic patients.

KEY WORDS

Depression, Type 2 Diabetes Mellitus, Quality of Life

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BACK GROUND

The definition of Quality of life incorporates an individual's physical as well as psychological health, the perception of each individual about their position in life in the context of the social situation and their value systems and social relationships.(1)

It is identified as an important measure of outcome in managing patients, evaluating cost effectiveness, clinical trials and studies of treatment outcome in the field of mental health care.(2)

A study by Surtees et al compared the effect in quality of life of major depressive disorder and generalized anxiety disorder with that of chronic medical conditions.(3) It was found that mood disorders caused a degree of physical functional impairment which was equal to that caused by chronic medical conditions.

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The study used Medical Outcomes Study Short Form 36, which measures health status subjectively and includes the assessment of physical as well as social functioning, limitations in role due to physical or emotional issues, perception of mental and general health, energy and pain.(4)

The role of anxiety and depression in the reporting of quality of life in patients with diabetes mellitus was studied by Kohen D et al(5) The results showed that there was a reduction in self-reported quality of life when patients had depression or anxiety. This study showed that, depressed affect can independently determine the quality of life, in patients with physical illness.

Depression in diabetes is shown to have an impact on every dimension of SF-36 questionnaire.(6) This could be because of the influence of depression on physical outcomes as well as on self-help behaviours like medication adherence, maintenance of diet and lifestyle factors like exercise.

This study is an effort to compare the self-reported quality of life of type 2 diabetic patients with and without depression.

MATERIALS AND METHODS

A hospital based case control study was conducted in the Diabetic clinic of Government Medical College, Thiruvananthapuram, Kerala as part of the study on risk factors of depressive disorder in patients with type 2 Diabetes Mellitus.(7)

Sample Size Calculated Using the Formula Given Below-

$$n = \frac{2 \times p\,q}{(p\,1 - p\,0)2} (Z\alpha + Z\beta)^2$$, Sample size for each group

$$\text{Where } p1 = \frac{p\,0\,R}{[1 + p0\,(R-1)]},$$

$$p = \frac{(p1 + p0)}{2} \;\&$$

q = 1 – p,
R = Odds Ratio.
p0 = Estimated exposure rate among controls.

Prevalence of exposure among controls (P0) was taken as 20 and odds ratio (R) as three.[8]

From the patients attending the diabetic clinic 80 cases and 80 controls were included for the study. The study population was constituted by patients with type 2 diabetes mellitus who were aged 18 years or more. HADS depression subscale was administered. Those scoring more than/ equal to 8 in Hospital Anxiety and Depression scale (HADS)-depression subscale formed the case group with depression. Those scoring less than 8 formed the control group without depression. The evaluation was done consecutively till 80 patients were recruited to both case and control groups. Study was conducted after approval from the Ethical Committee and after obtaining written informed consent in regional language from participants.

Hospital Anxiety and Depression Scale is a self-assessment scale which measures anxiety and depression without confounding by somatic symptoms of physical disorder. Pandey et al validated the Malayalam version of the HADS among cancer patients.[9] This scale has an internal consistency of 0.82-0.90 as measured by Cronbach's coefficient alpha. Olsson I et al showed it has sensitivity 0.80 and specificity 0.88, AUC 0.93.[10]

Both case and control groups were assessed for socio demographic data. Quality of life was assessed using RAND 36 item Health Survey (Version 1.0)[11] The 8 health concepts include physical functioning, role limitation due to physical or emotional problems, emotional wellbeing, social functioning, energy, pain, general health perception and an identification of perceived change in health.

Though the items in this health survey are identical to the MOS SF-36, the scoring method is simpler and straight forward. Hence it is referred to as the RAND 36-Item Health Survey 1.0. We used the Malayalam translated version.

Statistical Package for Social sciences (SPSS) version 11 was used to analyze the data. Baseline qualitative socio demographic factors are summarized as proportions and quantitative variables as means (SD). For comparison of baseline variables which were categorical chi- square test was used. Median scores of the health concepts were compared. Mann Whitney U test was applied to look for the statistical significance of the difference in scores; p value of <0.05 was considered statistically significant.

RESULTS

When the socio demographic profile of both cases and controls were compared, the two groups were comparable in age, sex, educational status and religion (Table 1).The cases had a mean age of 55.14 ± 8.63 years and the controls had a mean age of 53.13 ± 10.31 years (t 1.338 df 158 p0.183)

Diabetic patients without depression had higher mean scores in all the eight scales of RAND 36 item health survey. In RAND 36 item health survey a high score defines more favourable health state in all scales. Scores obtained for type two diabetic patients with depression were lower compared to those without depression in all the 8 scales of RAND 36 Item Health Survey (Table 2, Table 3). In diabetic patients with depression, mean ranks were lowest for role limitation due to emotional health, energy, emotional wellbeing and social functioning.

There is statistically significant difference between the groups in all the scales of RAND36 Item Health Survey as per Mann Whitney test.

Variable	Controls	Cases	p-Value
Sex			Chi square 0.735 df 1 p0.391
Male	27 33.8%	22 27.5%	
female	53 66.3%	58 72.5%	
Religion			Chi square 2.274 df3 p0.518
Hindu	61 76.2%	58 72.4%	
Christian	11 13.8%	11 13.8%	
Muslim	8 10.0%	11 13.8%	
Education			Chi square 7.437 df6 p 0.732
Illiterate	6 7.5%	7 8.75%	
Primary	12 15%	22 27.5%	
Middle School	13 16.25%	18 22.5%	
High School	36 45%	26 32.5%	
Intermediate	6 7.5%	3 3.75%	
Graduate	6 7.5%	3 3.75%	
Postgraduate/Professional	1 1.25%	1 1.25%	

Table 1. Socio Demographic Factors

Rand 36 Item Health Survey Items	Cases	Control
Physical Function	60.00 (50.00)	90 00 (14.00)
Role Limitation Due to Physical Health	0.00 (50.00)	100.00 (25.00)
Role Limitation Due to Emotional Health	33.33 (67.00)	100.00 (0.00)
Energy	45.00 (45.00)	85.00 (19.00)
Emotional Well Being	36.00 (39.00)	92 00 (12.00)
Social Functioning	50.00 (47.00)	100 00 (0.00)
Pain	55.00 (45.00)	90.00 (32.00)
General Health	45.00 (45.00)	80.00 (20.00)

Table 2. Median and IQR

Rand 36 Item Health Survey Items	Median Score in Patients with Depression	Median Score in Patients Without Depression	Significance
Physical Function	54.03	106.97	0.000
Role Limitation Due to Physical Health	53.96	107.04	0.000
Role Limitation Due to Emotional Health	49.78	111.22	0.000
Energy	42.47	118.53	0.000
Emotional Well Being	50.25	110.7	0.000
Social Functioning	51.46	109.74	0.000
Pain	58.96	102.04	0.000
General Health	56.41	104.59	0.000

Table 3. Comparison of Rand 36 Health Survey Items in Patients With and Without Depression

DISCUSSION

Type two diabetic patients with depression were having poor physical functioning, more limitations due to physical as well as emotional problems, more fatigue, pain and emotional distress. They also had poor social functioning and impaired perception of health compared to controls. This effect of depression on quality of life of patients with diabetes, independent of the level of physical illness was shown in previous studies also.[12,13] Goldney et al had shown that there is a significant impact of depression in all dimensions of quality of life.[14]

The presence of an emotional disorder usually adversely influences the physical condition. Supervening depression can make a previously tolerable pain in a disorder intolerable. The capacity to maintain medication vigilance may be adversely affected by co existing depression in diabetes leading to poor control of diabetes. Due to the variable appetite and lack of interest, presence of depression interferes with the maintenance of a balanced diet which is essential in controlling blood sugar levels. Psycho motor retardation and lack of energy can lead to lack of exercise and there is also a high risk of substance abuse. All these factors increase the morbidity associated with diabetes by leading to poorer control and more complications. So the physical functioning is poorer and they can experience more role limitation due to that. Emotional wellbeing, energy, role limitation due to emotional health and social functioning are understandably more affected in patients with depression. Thus, when depression co exists with diabetes the impact on quality of life is severe. This cannot be ignored in the clinical setting. The timely diagnosis and effective management of depression in diabetes mellitus can alleviate suffering and improve quality of life. The management of diabetes itself can be compromised if depression is unidentified.

CONCLUSION

Type two diabetes mellitus patients with depression have significant impairment in Quality of life compared to those without depression.

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