SF-36 AND THE MALAY TRANSLATED AUDIT OF DEPENDENT DIABETES QUALITY OF LIFE (ADDQOL) PERFORMANCES AMONG TYPE 2 DIABETES PATIENTS.

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ABSTRACT

A cross sectional study was done to examine the performance of SF-36 and the Malay translated Audit of Dependent Diabetes Quality of Life (ADDQOL). Univariate analysis showed there was no significant difference in the ADDQOL scores. Ancova showed that Vitality score and Bodily Pain score was different in some areas. Only Mental Health scales were different between sexes among all scales in SF-36. The Malay translated ADDQOL and most of SF-36 performances were mostly not affected by different gender, types of treatments, glycemic controls and presence of complications.

Keywords: Quality of life, Audit of Diabetes Dependent Quality of Life (ADDQOL), Short-Form 36 (SF-36)

INTRODUCTION

Most studies have reported worse Quality Of Life (QOL) for people with diabetes, compared to persons without diabetes, especially in physical functioning and well-being aspects (Rubin and Peyrot, 1999). There are 2 strategies for quality of life evaluation; the measures that address illness-specific issues and the measures that address a wide spectrum of conditions also known as generic instruments (Jacobson et al., 1994). To assess quality of life (QOL) proper QOL measure or instrument is important for many reasons. For example using a health status measure questionnaire despite entirely QOL measures to assess QOL, may give misleading conclusions (Bradley, 2001). Influence of the demographic, medical history and self-management characteristics on the QOL has been studied elsewhere (Glasgow, R.E. *et al.*, 1997). It was found that the more intensive the treatment, the better the chance to delay the onset and progression of complications (Hart, H.E. *et al.*, 2003) but with adverse effects on the QOL. An example was when the type 2 diabetics on insulin reported a greater impact on the quality of life than did those on oral medication (Glasgow, R.E. *et al.*, 1997) . It was suggested that QOL score did not differ significantly between the 'good control' group and 'poor control group'. However the QOL scores between 'insulin treated' group and 'non-insulin treated' group differed significantly in social functioning, mental state and pain (Goddijn, P.P.M. *et al.*, 1999). Apart from that the QOL can be affected by different types of treatments, complications (Jacobson, A.M. *et al.*, 1994) and the presence of symptoms for hyperglycaemia (Goddijn, P.P.M. *et al.*, 1999). Presence of late complications was associated with different scales of QOL (Bott, U. *et al.*, 1998) with the presence of macrovascular complications definitely has large negative impact on the QOL (Hart, H.E. *et al.*, 2003). The development of microvascular complications was also related to decrements in QOL (Ahroni, J.H. and Boyko, E.J., 2000). The objective of the study was to measure the performance of **SF-36** and the Malay translated Audit of Dependent Diabetes Quality of Life (ADDQOL) among type 2 diabetes patients in different gender, types of treatments, glycemic control and presence of complications.

MATERIALS AND METHOD

Design And Respondents

The study was a cross sectional study and the respondents were patients with type 2 diabetes mellitus who were attending diabetic clinics in Kelantan. Altogether 172 subjects were included and were given two self-administered measures (questionnaires) after they had been systematically and randomly selected.

Inclusion And Exclusion Criteria

The respondents should have been diagnosed with type 2 diabetes mellitus at least for 1 year and all of them should be above 18 years of age. They must be able to read and write in Malay language. The respondents would be excluded if

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they have been diagnosed with cognitive impairment or were having suspected substance abuse disorder.

Tools

2 questionnaires, The Malay translated and validated Audit of Diabetes Dependent Quality of Life (ADDQOL) and the Malay translated and validated Short-Form 36 (SF-36) were self-administered by the selected respondents. The ADDQOL has 2 overview items and 18 other specific items (Bradley C *et al.,* 1999). Meanwhile the SF-36 includes one multi-item scale that measures eight health concepts that is Physical functioning (PF), Role limitations due to physical health problems (RP), Bodily pain (BP), General health (GH), Vitality (energy/fatigue) (VITA), Social functioning (SF), Role limitations due to emotional problems (RE) and Mental health (MH) (Ware J E *et al.,* 1993)

STATISTICAL ANALYSES

For univariate analysis, t-test was used. For the multivariable analysis we used analysis of co-variance (ANCOVA) where the duration of being diagnosed as diabetic and age in years of the respondents were adjusted.

RESULTS

Table I shows the characteristic of the respondents and the means, standard deviations and the 95% confidence interval for means. The ADDQOL has shown negative results suggesting the adverse effect on the QOL from having diabetes mellitus. The scores of the scales in SF-36 were also generally lower. They ranged from 47.96 to 68.14. In Table II, the p-values from the t-test or univariate analysis were shown. There were significant different scores between different gender in Mental health (MH), between treatment in Bodily pain and glycemic control in Vitality (VITA) and also Mental health (MH). The presence of complication did not shown significant different in the respondents. The results from the ANCOVA are shown in Table III. After adjustment, the estimated marginal means were significantly different in gender for Mental health. Different treatment has significant effect also on the Mental health. Glycemic control on the other hand significantly affected Vitality. Larger sample size may render the Bodily pain and Mental health status significant in different respondents.

Table I: Characteristics of the respondents and the summary of ADDQOL and SF-36

		Descriptives			
			Statistics		
			95% Confidence Interval for Mean		
		Mean	Lower Bound	Upper Bound	Std. Deviation
Statistic	AGE	52.37	50.92	53.81	9.35
	HBA1C	8.96	8.60	9.33	2.42
	YEARS OF DIAGNOSIS	8.69	7.71	9.67	6.38
	ADDQOL SCORE	-4.24	-4.55	-3.93	2.02
	SF-36 PHYSICAL FUNCTIONING	59.14	54.99	63.30	25.42
	SF-36 ROLE PHYSICAL	47.96	41.04	54.88	42.45
	SF-36 MENTAL HEALTH	67.78	64.88	70.68	17.73
	SF-36 BODILY PAIN	42.37	40.73	44.02	10.07
	SF-36 MENTAL HEALTH	54.13	51.03	57.23	18.82
	SF-36 VITALITY	56.87	53.76	59.98	19.10
	SF-36 SOCIAL FUNCTINONG	68.14	64.42	71.87	22.61
	SF-36 ROLE EMOTIONAL	58.96	51.84	66.07	43.63

Table **2:** p-value of t-test between different gender, treatment,
complication and glycemic control

	Gender	Treatment	Complication	Glycemic control
ADDQOL	0.38	0.71	0.53	0.33
PF	0.25	0.81	0.22	0.41
RP	0.86	0.79	0.75	0.65
BP	0.11	0.03	0.75	0.32
GH	0.90	0.60	0.50	0.28
VITA	0.42	0.47	0.87	0.03
SF	0.35	0.86	0.69	0.21
RE	0.40	0.20	0.33	0.61
MH	0.04	0.69	0.34	0.03

Table **3: F-statistics** and p-value* of ANCOVA between different gender, treatment,
complication and glycemic control with adjustment of duration of being diagnosed
as diabetics and age of respondents

	Gender	Treatment	Complication	Glycemic control
ADDQOL	0.15(0.07)	0.12(0.73)	1.04(0.31)	0.76(0.39)
PF	2.26(0.14)	0.34(0.56)	0.75(0.39)	1.86(0.17)
RP	0.86(0.36)	1.35(0.25)	0.28(0.60)	0.22(0.63)
BP	3.90(0.05)	2.15(0.15)	0.50(0.48)	0.38(0.54)
GH	0.16(0.69)	0.16(0.69)	0.69(0.41)	1.01(0.32)
VITA	0.88(0.35)	0.67(0.42)	0.02(0.89)	5.52(0.02)
SF	3.00(0.19)	0.50(0.48)	0.00(0.99)	0.27(0.60)
RE	0.01(0.94)	0.50(0.48)	0.00(0.99)	0.27(0.60)
MH	5.38(0.02)	0.02(0.89)	0.98(0.32)	3.83(0.05)

* ( ) = p-value

DISCUSSION

In this study, the respondents with good glycemic control have higher vitality score and mental health scores (means not shown) and this was consistent with some. other studies. As expected males respondents have better mental status scores, and this finding was similar with a study elsewhere (Redekop *et al.,* 2002). The score of Bodily pain was significantly better in those with less intensified treatment and this is acceptable as more intensified treatment with insulin may impair the life of the patient. Contrary to some other studies, we did not find significant difference in both the ADDQOL and SF-36 scores for respondents with and without complications. This probably due to our respondents that were almost all being selected from outpatients clinics. We would expect different results if we were to select respondents

from inpatients wards. There are 8 subscales in SF-36, which some may be the unnecessary to assess QOL thus have given inconsistent results in this study. These findings supported the suggestion that proper domains selection and inclusion must be practiced to assess QOL (Bradley, C. *et al.,* 1999). Different information from different instruments (Goddijn *et al.,* 1999) may also explain inconsistent result between ADDQOL and SF-36. Thus researchers must be careful when selecting tools to assess the QOL because some instruments such as the SF-36 were health functional status instruments rather than an entirely a QOL instrument. Treatment intensification from diet only to oral agents to insulin was associated with decrements in quality of life in other study (Rubin, R.R. and Peyrot, M., 1999). Similar result except for Bodily pain was not shown here probably due to different methods of grouping the treatments. This finding

warrant further study to assess whether the bodily pain score was due to the insulin treatment or just the manifestation of co-morbidity. Different aim of measures such as ADDQOL for QOL and SF-36 for functional status or 'health status' may give rise to conflicting results (Fayers and Machin, 2000). However the inconsistency was small between the SF-36 and ADDQOL suggesting that both instruments can complement each other in such that the SF-36 for perceived health and the ADDQOL for individual QOL (Woodcock et al., 2001). The limitations of the study were that this was a cross sectional study where causal relationship could not be established. The secondary information about the clinical aspects that were collected may be incorrect or insufficiently documented. There was possibility that some patients might have not been examined properly. The complication is best divided into microvascular and macrovascular and the number of complications counted. Different setup and clinics work process may have given rise to different treatments regimes and may have influenced the measurement. The treatment should be best grouped into diet, oral only, insulin and oral and insulin which were not done here because of small sample size.

CONCLUSION

ADDQOL as a specific diabetes questionnaire for QOL measure may complement SF-36 as a functional status measure to give more accurate information of a well-being in type 2 diabetes patients.

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