行政院國家科學委員會專題研究計畫成果報告

非胰島素依賴型糖尿病病患之生活品質(I)

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主持人：李采娟　　中國醫藥學院 中醫所

摘要

以病人的觀點來偵測醫療照護結果的重要性已漸被認可，改善和健康有關之生活品質已成為健康照護品質重要指標之一。糖尿病為門診常見之診斷之一，且其死亡率近幾十年來漸增，然而有關糖尿病患者生活品質之研究相當有限，要了解生活品質，必須要有良好之測量工具，因此，本研究之主要目的為評估中文版 SF-36 與糖尿病衝擊測量量表在非胰島素依賴糖尿病病人之信度、效度、反應性。

本研究將採橫斷面與縱斷面研究設計來收集相關之資料，橫斷面研究對象將選取 300 名前來中國醫藥學院附設醫院家醫科門診之民眾、500 名一般民眾及 246 名從家醫科健檢及門診、內科門診及住院之糖尿病病人，一般民眾選自戶籍設於台中縣市之市民，抽樣方法為三階段等機率隨機抽樣方法，所收集之資料包括 SF-36、糖尿病衝擊測量量表、中國人健康量表、臨床診斷、生活型態變項、血糖控制情形與人口因子等。

結果顯示糖尿病病人男性佔 36.2%、女性佔 63.8%；年齡分佈為 40~85 歲，平均年齡為 63.1 歲(標準差為±9.05)；糖尿病病史平均為 7.89 年(標準差為±7.39)。血糖值(Hba_1c)控制良好者有 89 人(40.6%)；控制不良者有 130 人(59.4%)。無併發症者佔了 31.7%；有併發症者佔了 68.3%。在控制性別、年齡和血糖值後，發現 SF-36 量表中有併發症者之身體活動功能、自評健康及社會功能較無併發症者的分數為低(p=0.050，0.013 及 0.038)。在糖尿病生活品質量表中顯示有併發症者之糖尿病症狀、社會角色成就及安寧狀態較無併發症者分數低(p=0.011, 0.008 及 0.034)；血糖值控制情形良好者其安寧狀態分數較佳(p=0.014)。至於糖尿病患者和一般民眾與門診民眾之比較則無顯著之差異。

關鍵詞：SF-36 健康量表、糖尿病衝擊測量量表、中國人健康量表、糖尿病

Abstract

Introduction: The objectives of medical care for patients are not only in prolonging the duration of life but also in improving the quality of life, achieving a more effective life, and preserving function and well-being. Hence, it is important to assess the quality of life in clinical settings. Diabetes mellitus is one of the most common outpatient diagnosis with significantly increasing mortality. However, the study of quality of life among diabetic patients is very limited. The current project is therefore designed to evaluate the reliability, validity, sensitivity to change, and interpretation of outcome measures SF-36 and Diabetes Impact Measurement Scales for non-insulin-dependent diabetes mellitus (NIDDM) patients, and to report their quality of life. **Methods:** A cross-sectional study design with 3 samples and a longitudinal study design with one sample will be applied in the present study. The 3 samples for cross-sectional study are NIDDM samples and samples from general population and

outpatients from clinical settings. For cross-sectional samples, SF-36, DIMS, CHQ, clinical diagnosis, sociodemographic factors are measured at the same time point. For the longitudinal sample (NIDDM sample), all measurements along with Hemoglobin A_1C will be measured again one year later. **Results:** Mean age of the DM patients is 63.1 years old and 36.2% of them are male. The average duration of DM history is 7.89. The proportion of Hemoglobin A_1C >7 is 59.4%. The proportion of patients without any complication is 31.7%. After controlling for the effect of age and gender, there is no significant difference of 8 scales of SF-36 between good and poor serum glucose control, but significance differences of well-being and overall score of DIMS were observed ($p<0.05$). We also observed significant differences of physical functioning, role-physical, and social functioning scales of SF-36 and symptoms, social role fulfillment, well-being and overall score of DIMS between DM patients with and without complication. There was no significant difference was observed among different samples.

Keywords:SF-36, DM, DIMS, CHQ

Introduction

The World Health Organization (WHO) declared that "Health is a state of complete physical, mental and social well-being, and not just the absence of disease" (WHO, 1947). Therefore, the objectives of medical care for patients are not only in prolonging the duration of life but also in improving the quality of life, achieving a more effective life, and preserving function and well-being.

It is important to assess the quality of life in clinical settings. The multidimensional nature of the WHO definition indicates that a comprehensive HRQL instrument must have multiple dimensions, using both generic or disease-specific instruments.

Diabetes mellitus is one of the most common outpatient diagnosis with significantly increasing mortality. During the past 30 years, in Taiwan there was a 9.3- and 12.9-fold increase for DM during this period. However, the study of quality of life among diabetic patients is very limited. The current project is therefore designed to evaluate the essential attributes of outcome measures (Chinese-Version SF-36 and Diabetes Impact Measurement Scales) for NIDDM patients, and to report their quality of life.

Method

A cross-sectional study design with 3 samples and a longitudinal study design with one sample will be applied in the present study. The 3 samples for cross-sectional study are NIDDM samples and samples from general population and outpatients from clinical settings. For cross-sectional samples, SF-36, Diabetes Impact Measurement Scale (DIMS), CHQ, clinical diagnosis, sociodemographic factors are measured at the same time point. For the longitudinal sample (NIDDM sample), all measurements along with Hemoglobin A_1C will be measured again one year later.

The questionnaire will be self-administered for primary care sample while face-to-face interview will perform for general population and DM patients. The SF-36 is a short questionnaire with 36 items

which measure eight multi-item variables: physical functioning (10 items), social functioning (2 items), role limitations due to physical problems (4 items), role limitations due to emotional problems (3 items), mental health (5 items), energy and vitality (4 items), pain (2 items), and general perception of health (5 items). DIMS's domains include symptoms, diabetes-related morale (attitude towards managing the disease), social role fulfillment and well-being. The statistical analyses were mean, standard deviation, proportion, t-test, and Chi-square test.

Result

Table 1 shows the distributions of sociodemographic factors and clinical variables among DM outpatients. The mean age of the DM patients is 63.1 years old and 36.2% of them are male. About 40% of them has more than 6 years of education. Most of them (76.2%) are married and not in labor force (74.6%). The average duration of DM history is 7.89. The proportion of Hemoglobin A_1C >7 is 59.4%. The proportion of patients without any complication is 31.7%. Table 2 presents the comparisons of 8 scales of SF-36 by controlling the effects of age, gender, complication between NIDDM patients with good and poor glucose control. After controlling for the effect of age and gender, there is no significant difference of 8 scales of SF-36 between good and poor serum glucose control. The comparisons of 8 scales of SF-36 by controlling the effects of age, gender, glucose control between NIDDM patients with and without complication were presented in Table 3. There were significant differences of physical functioning, role-physical, and social functioning scales of SF-36. Those who have complication have worse health status than those who don't have. Table 4 shows the comparisons of 4 scales of DIMS by controlling the effects of age, gender, complication between NIDDM patients with good and poor glucose control. Significant differences of well-being and total score were observed. Those who have better glucose control have better well-being and overall status than those who have worse glucose control. We also observed significant differences of symptoms, social role fulfillment, well-being and overall score of DIMS between DM patients with and without complication (shown in Table 5). Those who have complications have worse well-being and overall status than those who don't have. There was no significant difference was observed among different samples.

Conclusion

Our study demonstrated that the generic instrument, SF-36, is sensitive enough to identify the differences between DM patients with and without complication, but, it fails to identify the difference of glucose control status. The disease-specific measure, DIMS, can identify the differences of complication status as well as glucose control status.

Table 1: Distributions of Sociodemographic factors, serum glucose control status, and complication status.

		N (%)
Sociodemographic Factors		
Gender	Male	89(36.2%)
	Female	157(63.8%)
Illiterate	Yes	65(27.7%)
	No	170(72.3%)
Level of Education (years)	≤6	85(57.8%)
	7-12	41(27.9%)
	>12	21(14.3%)
Marital Status	Single	2(0.9%)
	Married	176(76.2%)
	Widowed	53(22.9%)
Occupation	In labor force	60(25.4%)
	Not in labor force	176(74.6%)
Age		63.14±9.05

Duration of DM history		7.89±7.39
Clinical Variables		
Serum Glucose Control		
	$Hba_{1c} \leq 7$	89(40.6%)
	$Hba_{1c} > 7$	130(59.4%)
Complication	No	78(31.7%)
	Yes	168(68.3%)
SF-36 Cronbach's alpha=0.73-0.98		
DIMS Cronbach's alpha=0.51-0.84		

Reference

World Health Organization: The constitution of the World Health Organization. WHO Chron 1: 29, 1947.

Table 2: The comparisons of 8 scales of SF-36 by controlling the effect of age, gender, complication between NIDDM patients with good and poor glucose control.

	Glucose Control		Difference of	
	Good	Poor	Adjusted Mean	F-value
Physical Functioning	83.48±2.35	83.02±2.09	0.46	0.03
General Health	58.90±2.39	55.90±2.13	3.00	1.02
Mental Health	80.05±2.18	75.13±1.95	4.92	3.28
Vitality	67.45±2.22	63.17±2.00	4.28	2.38
Bodily Pain	84.81±2.68	78.91±2.39	5.90	3.14
Social Functioning	86.11±2.29	85.79±2.02	0.32	0.01
Role-Physical	74.62±5.24	71.46±4.60	3.16	0.24
Role-Emotional	89.84±3.95	88.09±3.47	1.75	0.13

Table 3: The comparisons of 8 scales of SF-36 by controlling the effects of age, gender, glucose control between NIDDM patients with and without complication.

	Complication		Difference of	
	No	Yes	Adjusted Mean	F-value
Physical Functioning	86.41±2.84	80.09±1.72	6.32	3.72*
General Health	61.60±2.88	53.20±1.77	8.40	6.36**
Mental Health	79.21±2.64	75.97±1.61	3.24	1.12
Vitality	65.71±2.70	64.90±1.64	0.81	0.07
Bodily Pain	83.81±3.24	79.91±1.97	3.90	1.08
Social Functioning	89.27±2.76	82.63±1.66	6.64	4.36*
Role-Physical	77.30±6.35	68.78±3.77	8.52	1.37
Role-Emotional	91.29±4.80	86.63±2.85	4.66	0.72

*:P<0.05; **:P<0.01

Table 4: The comparisons of 4 scales of DIMS by controlling the effects of age, gender, complication between NIDDM patients with good and poor glucose control.

	Glucose Control		Difference of	
	Good	Poor	Adjusted Mean	F-value
Symptoms	3.36±0.05	3.25±0.05	0.11	2.90
Diabetes-related Morale	3.15±0.06	3.16±0.05	-0.01	0.02
Social Role Fulfillment	2.68±0.07	2.53±0.07	0.15	2.91
Well-Being	2.86±0.06	2.67±0.06	0.19	6.20*
Total Score	3.02±0.04	2.90±0.04	0.12	4.72*

*:P<0.05

Table 5: The comparisons of 4 scales of DIMS by controlling the effects of age, gender, glucose control between NIDDM patients with and without complication.

	Complication		Difference of	
	No	Yes	Adjusted Mean	F-value
Symptoms	3.40±0.06	3.21±0.04	0.19	6.63**
Diabetes-related Morale	3.16±0.07	3.15±0.04	0.01	0.01
Social Role Fulfillment	2.74±0.09	2.47±0.05	0.27	7.14**
Well-Being	2.86±0.08	2.67±0.05	0.19	4.58*
Total Score	3.05±0.05	2.88±0.03	0.17	7.67**

*:P<0.05; **:P<0.01