Original Article

Perceived family support and blood glucose control in type 2 diabetes

A A Adetunji, M M A Ladipo, A E Irabor, and J O Adeleye

Abstract

This study aimed to find out if levels of family support are correlated with blood glucose control among Nigerians with type 2 diabetes. One hundred and fifty (150) patients attending the diabetes clinic of the University College Hospital, Ibadan, were assessed for their perception of family support using a validated family support measure. Fasting plasma glucose was used as the index of glycaemic control, and 39% of subjects were rated as having 'strong' perceived family support, while 31% and 11% were rated wth 'weak' and 'no' perceived family support, respectively. Mean fasting plasma glucose was 7.0±2.5 mmol/L, with lower levels of blood glucose in those who perceived their family as supportive, compared with those who perceived their family as unsupportive. Positive family support was found to correlate positively with blood glucose control.

Introduction

The family is the natural and fundamental unit of society.[1] Most people are born into a family, live much of their lives within a family, and consider it to be a high priority in their value system. A healthy lifestyle is usually developed, maintained, or changed within the family context.

There is an emerging epidemic of diabetes in Africa,[2] with Nigeria alone being home to over 1 million cases.[3] In many of these resource-limited settings, there is a silent cry for socio-culturally appropriate strategies to stem the tide of serious diabetes morbidity and mortality risks. Could the answer lie in harnessing our naturally rich family support resources?

Patients and methods

A cross-sectional study was conducted over a 12-week period on 150 tablet-treated adults with type 2 diabetes who had been attending the diabetes clinic of the University College Hospital, Ibadan – a tertiary level healthcare institution in Nigeria – for up to a year or more. Pregnant women, sick patients, and those on treatment with insulin were excluded from participating. Information pertaining to age, sex, marital status, duration of marriage, duration of diabetes, education level, religion, and ethnic group was obtained through interviews.

Subjects were assessed for their perception of family support, using the Perceived Social Support family scale:[4] a 20-item validated measure of family support, by which subjects answered 'yes', 'no', or 'don't know' to questions on their feelings and expieriences with their family. Summated scores were used to arrive at a family support score for each subject, with a possible score range of 0 to 20 points. Higher scores indicated higher levels of family support, rated in descending order as 'strong', 'weak', or 'no' family support. Glycaemic control was assessed by the mean of three previous fasting plasma glucose estimations. Data are presented as frequencies and percentages. Analysis was performed using the Chi-square test and statistical significance was set at p<0.05.

Results

Of 150 subjects, 78 (52%) were females. Overall age was 61±10 years. Mean fasting plasma glucose was 7.0±2.5 mmol/L. Mean duration of diabetes was 8±7 years. The majority of subjects were married (75%), had living offspring (99%), had 10 years or more of formal education (61%), and earned more than US$1 per day (73%). The mean perceived family support score was 9.5±1.8 points.

Perceived family support rating categories were as follows: 'strong' support 49%; 'weak' support 51%; and 'no' support 11%. Chi-square testing showed a statistically significant association (p=0.008) between fasting plasma glucose values and perceived family support scores. One-way analysis of variance (ANOVA) revealed a statistically significant difference (p=0.0001) between the three perceived family support categories. An inverse correlation was observed between levels of perceived family support and fasting plasma glucose levels.

Discussion

Our data indicate that the age and sex structure and the mean duration of diabetes obtained are similar to that reported by previous similar studies in Nigeria.[5,6] Fabiyi et al,[7] in a cross-sectional study of type 2 diabetes patients at a teaching hospital in Ile-Ife, Nigeria, reported a 96% literate rate among their study subjects.

The data on average monthly income suggests that the

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sample observed in this study may not be economically representataive of the average Nigerian adult, given the report by the Federal Office of Statistics (Nigeria)[8] at the turn of the millennium that 67% of Nigerians live below the poverty level.[9]

Significantly, more than half our subjects had been married for 30–44 years. This marital characteristic is thought to hold significant potential for affecting an individual's perception of family worth, with older persons (as observed in the majority in our study) being more likely to reflect feelings of greater appreciation for family,[10] and thereby be more inclined to report better family support perceptions than younger adults.

The overall pattern of blood glucose control in this study inclined towards mild hyperglycaemia, with more than half our subjects recording fasting plasma glucose levels below 7.4 mmol/L. The overall perception of support favoured a positive impression of family support rather than a negative one, with only one-tenth of subjects receiving ratings of 'no' family support compared with one-third of subejcts with 'strong' family support ratings. A statistically significant association was obtained between blood glucose control and perception of family support. Fasting plasma glucose levels were lower in those who perceived their family as supportive, compared with those who perceived their family as unsupportive.

A major limitation of this study is that is is cross-sectional in design, and causality cannot be determined. Additionally, the results of this study may not be generalisable to all adults with type 2 diabetes since insulin-treated patients were excluded from participating. Nonetheless, our findings are in keeping with evidence from previous studies[11,12] that higher levels of family family support perception are significantly associated with better glycaemic control.

Diabetes care providers should take up the challenge of utilising the role of family support as a management strategy. Firstly, by exposing persons living with diabetes, and their family members, to regular health education, which affirms that optimal management of diabetes requires the support and involvement of the family. Secondly, by introducing family assessment protocols into initial and follow-up patient evaluations as a way of determining adequacy of family support levels. Patients with low levels of family support may thereby by identified and referred for structured family-level interventions.

References

1. United Nations General Assembly Resolution 217a (111), 10 December, 1938.
2. McLarty, Pollitt C, Swai A, Alberti KGMM. Epidemiology of diabetes in Africa. In *Diabetes in Africa*. Eds Gill GV, Mbanya J-C, Alberti KGMM. Cambridge UK: FSG Communications Ltd, 1997: pp 1–17.
3. World Health Organization. *World Health Report*. Geneva: WHO, 2004.
4. Procidiano ME, Keller K. Measures of perceived social support from friends and family. Three validation studies. *Amer J Comm Psychol* 1983; 11: 1–24.
5. Adetuyibi A. Diabetes in the Nigerian African III. Socio-economic aspects. *Trop Geog Med* 1976; 28: 155–68.
6. Famuyiwa OO, Edozien EM, Ukoli CO. Social, cultural and economic factors in the management of diabetes mellitus in Nigeria. *Afr J Med Sci* 1985; 14: 145–54.
7. Fabiyi AK, Kolawole BA, Adefehinti O, Ikem RT. The impact of knowledge, attitude, practice and beliefs of type 2 Nigerian diabetic patients on drug compliance. *Diabetes Int* 2002; 12: 15–17.
8. Federal Office of Statistics (Nigeria). *Annual Abstract of Statistics*. 1999.
9. World Bank. *World Development Report*. Washington DC, USA: World Bank, 1990.
10. Atchley RC. *Social Forces and Aging*. California, USA: Wadsworth, 1991.
11. Fukunishi I, Iorikawa N, Yamazaki T, et al. Perception and utilisation of social support in diabetic control. *Diabet Res Clin Prac* 1998; 41: 207–11.
12. Candenas L, Vallbona C, Baker S, Yusim S. Adult onset diabetes mellitus: glycaemic control and family function. *Am J Sci Med* 1987; 293: 28–33.