AN EXPLORATION OF DIETARY MANAGEMENT PRACTICES OF DIABETES MELLITUS PATIENTS

R.D.C. Ranasinghe[1,4],E.A.I.T. Ekanayake [2,4], W.L.B.P. Jayathilaka[3,4], and S.L.H. Vithanarachchi [4]

[1] *Siyasi Hospital, Kuliyapitiya, [2]North Colombo Teaching Hospital,[3]School of Nursing, [4]Department of Health Sciences, OUSL*

INTRODUCTION

Today, major threat to health is non communicable diseases. Diabetes Mellitus has become one of the most common non communicable diseases. It is a group of metabolic diseases with multiple etiologies, characterized by hyperglycemia together with disturbances of carbohydrates, fat, and protein metabolism resulting from defects in insulin secretion, insulin action or both (Frank 2003). Despite the age, people all over the world are suffering from the Diabetes Mellitus. Individuals are expected to incorporate major changes in diet which is the cornerstone of treatment. However, this is the most difficult component of self management. Out of the self management activities of diet and exercises, the priority should be given to dietary management.

Diabetes Mellitus has potential for serious complications and often results in significant financial burden, decreased quality of life and major lifestyle changes for patients and their families (Coffey et al. 2002). Most individual are likely to come across barriers to care which create major challenges in adhering to self management programmes (Aljasem et al. 2001, Clark & Hampson 2001, Schoenberg & Drungle 2001). In addition, research shows that those with multiple barriers are less attached to their plans of care (Glasgow 1994). The most frequently reported barriers are time constraints, knowledge deficit, limited social support, inadequate resources, limited coping skills, poor patient – provider relationship and low self - efficacy (Tu & Morrison 1996, Whitmore et al. 2002). Thus, extent of dietary management of these diabetic patients should be thoroughly examined and encouraged.

Diabetes Mellitus is a real burden to the patient and the family. Further, there is an increasing trend of recurrent hospital admissions of diabetic patients due to uncontrolled blood glucose level and associated complications. This is a large cost for the government. At the same time, it decreases the number of healthy population and affects on the development of the country. So, prevention and control of the disease is essential. Even though, diet control is more effective in controlling the blood sugar level, most of these patients are less prone to use this practice. Therefore, this study explores the extent of dietary management used by the type two diabetic patients in urban and sub urban settings.

METHODOLOGY

Quantitative descriptive design has been employed in this study to assess the dietary management of diabetic patients. The study was conducted in natural settings of diabetic clinics, at North Colombo Teaching Hospital at Ragama and Siyasi Private Hospital at Kuliyapitiya with a purposive sample of 150 diabetic patients (50 diabetic patients from North Colombo Teaching Hospital and 100 diabetic patients from Siyasi Private Hospital). Diabetic patients who had other diseases, such as Hypertension, Heart diseases has been excluded from the sample and those without any other diseases and with fair knowledge of reading and writing in Sinhala has been included. Voluntary participation was invited and informed

[1] Correspondence should be addressed to S.L.H.Vithanarachchi, email: hemamalavithanarachchi323 @gmail.com

consent was obtained. Ethical approval and permission to gain access was sorted from both hospitals.

Data collection was conducted by the research team using a self administered questionnaire which was prepared in English and translated in to Sinhala. The Sinhala version was back translated to check the accuracy. The questionnaire was pre tested for reliability and understandability with a small sample of ten patients who did not participate in the study. Edited version was distributed. Data collection was done within a period of 25 days. Descriptive analysis was conducted using Microsoft excel package.

Lack of experience of researchers and time constraints were identified as limitations. In addition, the quantitative nature of the data collection tool and closed ended questions has limited the collection of in depth data and expressions of individual experiences on dietary management. Patients' personal factors such as anxiety, fatigue, tiredness and hunger might have an impact on the responses and most probably the answers could be superficial. A busy clinic environment could also have an impact on the findings.

RESULTS AND DISCUSSION

Out of the 150 questionnaires, 145 were returned. Thus, the response rate was 97%. According to the demographic data, 60% of the sample was from urban areas and 40% were from rural areas. Regarding the age of participants, 27.5 % was below 40 years, 37.9% were between 41 to 50 years and the rest, 34.5% were over 51 years. In relation to employment, 40.6% of the participants was private institutional employees, 24.8% were government employees, 6.8% were self employees and 27.6% were unemployed. Monthly income of 71% of the sample was higher than 25,000 rupees. Another 14% had 20,000 to 25,000 rupees and the rest, 16% had a monthly income below 20,000 rupees. Only 40% of the sample had completed GCE Advanced Level thus the educational level was fairly good.

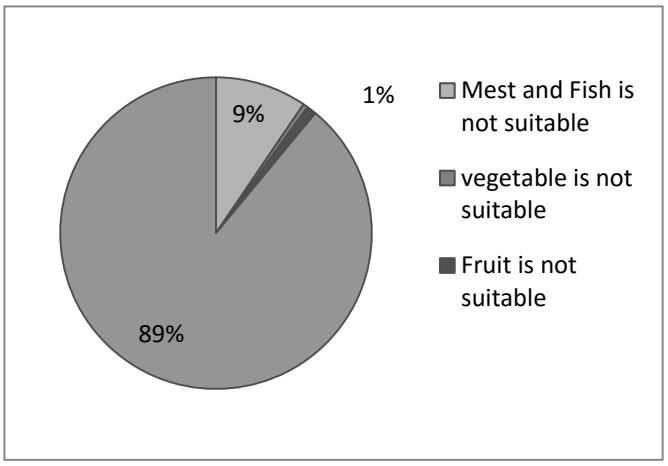

Figure 1: Knowledge on food consumption

Although this group should concern about their weight, 65.3% of the sample were above 66 kg. and 63.3% did not attend to health education classes during their clinic visits. Rosenstock et al. (2008) identified the effect of lifestyle modification on body weight and glucose tolerance. The figure 1 below illustrated that 89% of the sample had sufficient knowledge about consuming carbohydrates in their meals. But, only 7% (10) of participants correctly defined what a diabetic diet is. Data also revealed that 72.4% of the sample had a habit of taking fast food. Rice consumption was varied among the sample and 45% had two cups per meal. Another 48% had three cups per meal which is more than the recommended quantity. Consumption of sweets was high with 19% of the sample. These findings are consistent with other studies that reported, despite the diet is the most challenging aspect of diabetic care, 48% to 75% of respondents do not correctly adhere to dietary recommendations (Glasgow et *al*., 1984, Whitemore *et al*. 2002, Anderson & Justafson 1998, Lipscomb *et al.,* 2002). The study revealed that fruit consumption of diabetic patients is at moderate level. But, this level should be higher than current consumption, because fruits contain high fibers and it increases the filling effect of the stomach. This helps to reduce the carbohydrate consumption of diabetic patients.

Patients were worried about the loss of their usual lifestyles and many struggled with reframing their eating habits to promote a healthy body and lifestyle. Changing eating habits

is often difficult because it requires routine mealtimes, changes in the amount and types of food, loss of spontaneity in eating, and changes in relational behaviors. As 30% had an income less than 20,000 rupees this is an additional burden and reported high cost of buying healthy foods in order to maintain recommended diet. Anderson et al. (2001) and Rubin et al. (2004) identified that helplessness, frustration and the lack of success in achieving optimal glyceamic level, leads to ineffective coping methods such as denial or indifference.

However, 93% of the sample knew that diet control helps to maintain blood sugar level. Among the participants, 92.4% (134) knew faintishness as a symptom of hypoglycemia. Fasting blood sugar investigation was used by 70% of the sample as their method of identifying blood sugar control. Data revealed that the current group education structure and the delivery method do not have the ability to meet the needs of people with diabetes because patients expect more specific information about their disease and management. Brown *et al*., (2002) identified that patients' motivation and willingness to assume responsibility for their own care is the key to effective self– management.

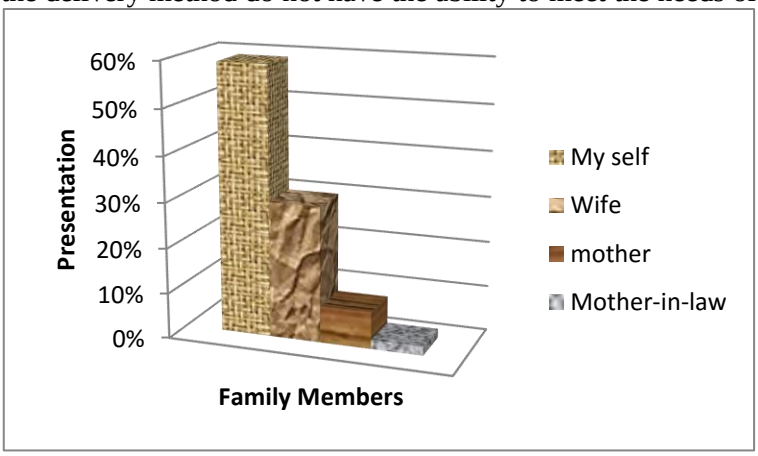

Figure 2: Meal Preparation

Further, this study examined the responsible people who prepared these patients meals. Though the patient gets the knowledge, the person who prepares meals might not have adequate knowledge. Out of them 59% prepared their own meal so, they knew. The remaining 41% had their meal prepared by their spouses, mothers or in-laws in the house. If there are many family members at home, the priority was given to the needs of other members in the family (children, male persons, elderly pregnant mothers) when preparing meals. Although diabetic patients should have highly nutritious, low carbohydrate and high fiber diets, may not get as recommended.

CONCLUSION AND RECOMMENDATIONS

Diabetic patients strive for normality while situations demand daily assessment of biophysical needs, implementation of appropriate management strategies and evaluation of treatment effectiveness. How they react to their disease process differs from person to person. This depends on their psychological state, the barriers they encounter in their social situations, internal and external environment they live in. Without knowing the rationale or importance of strategies, patients often fail to implement them.

Data of this study indicated that the education structure and delivery applied for the current group may not meet the needs of people with diabetes. The information which was provided has been perceived as not adequate. Patients wanted diabetic education with specific information relevant to their disease. Health care providers should experiment with interactive educational strategies that lead to successful integration of changes into their lifestyle.

The findings also revealed that most of the diabetic patients had poor overall knowledge, practice and attitudes about diet control. As a result, a large percentage of patients did not use dietary management leading to overweight problem associated with diabetic mellitus. Current study results revealed that female patients played a dominant role in preparing meals. If the patient is male person, the meal preparation is done by the wife. As the meal preparation has given the priority to other family members, diabetes patients may not get their food as recommended. Therefore the family support is very important.

In healthcare settings, the nurse has the key responsibility to educate the clients. The identified gaps such as poor knowledge, poor attitudes and weak practices about the diet control, need to be addressed in health education sessions using interactive educational strategies. Anticipatory discussion of potential feeling of frustration with self– management such as dietary management may help patients to avoid clinical depression. In addition, healthcare workers can facilitate acquisition of essential supplies and educational resources for patients and their families by facilitating the use of community resources. All these aspects may enhance the empowerment and increased control in self management of diabetes in these patients.Further, it is recommended to conduct this research using qualitative approach to explore the insider's perspective of self management of diabetes.

REFERENCES

Aljasem L.I., Peyrot M., Wissow L. & Rubin R.R. (2001). The impact of barriers and self – efficacy on self – care behaviors in type 2 diabetes. *The Diabetes Educator 27*,393-404.

Anderson J.W. & Justafson N.J. (1998). Adherence to high –carbohydrate, high- fiber diets. *The Diabetes Educator 15*,429-434.

Brown J.B., Harris S.B.,Webster-Bogaert S.,Wetmore S., Faulds C. & Stewart M.(2002). The role of patient, physician and systemic factors in the management of type 2 diabetes mellitus. Family Practice 19l, 344-349.

Clark M. & Hampson S.E ,(2001). Implementing a psychological intervention to improve lifestyle self-management in patients with type 2 diabetes. *Patient Education and Counseling* 42,247-256. (electronic version) Available at: http://www.elsevier.com/ locate/pateducou (retrieved on 24 February 2006).

Coffey J.T., Brandle M., Zhou H., Marriott D., Burke R.,Tabael B.P., Englelgau M.M., Kaplan R.M. & Herman W.H.(2002).Valuing health- related quality of life in diabetes. *Diabetes Care* 25,2238-2243.

Glasgow R.E. (1994). Social-Environmental factors in diabetes: Barriers to diabetes self-care. In *Handbook of Psychology and Diabetes* C. Bradley (Ed.). Harwood Academic, Berkshire, UK.

Lipscomb, E.R., Caffrey, H.M., Hays,L.M., Finch, E.A., Saha, C.K. & Ackermann, R.T.(2002). Lower fat intake is associated with lower weight and cholesterol at 4 months in adults with impaired glucose metabolism. *Journal for Behavioral Medicine 9*,65-77.

Rosenstock,J. , Hollander, N., Chevalier, S., Iranmanesh, A., SERENDE Study Group (2008). Evaluating Rimonabant efficacy in Drug-native diabetic patients. Retrieved from www.ncbi.nlm.nih.gov/pubmed/18678611

Rubin, R.R., Ciechanowski, P., Egede, L.E., Lin, E.H. & Lustman, P.J. (2004). Recognizing and treating depression in patients with diabetes. *Current Diabetes Reports 4*(2),119-125.

Schoenberg, N.E. & Drungle, S.C. (2001). Barriers to non insulin dependent diabetes mellitus (NIDDM) self-care practices among older women. *Journal of Aging and Health 13* (4), 443-466.

Tu, K.S. & Morrison, E. (1996). Diabetes self care practices, barriers, and outcomes in an indigent population: an exploratory study. *Journal of Nursing Science* , 88-98. Whitemore, R.,Chase, S.K., Mandle, C.L. & Roy, C. (2002). Lifestyle change in type 2 diabetes : A process model. *Nursing Research* 51, 18-25.

ACKNOWLEDGEMENT

First of all, we would like to show our gratitude to participants of the study who helped us a lot by providing their valuable information and time. In addition, our heartfelt thanks go to the academic staff of the Department of Health Sciences in the Open University of Sri Lanka for their unconditional support and guidance given to make this effort a successful one. We would like to give a special thank you to the Directors and Special Grade Nursing Officers and Nurse-In-Charges of diabetic clinics at North Colombo Teaching Hospital, Ragama and

Siyasi Private Hospital, Kuliyapitiya. Without you, this paper would not have become a reality.