Audit of a diabetic health education program at a large Primary Health Care Center in Asir region

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ABSTRACT

Objectives: To evaluate the health education program in a large Primary Health Care Center, to find out the problems faced by the staff and to suggest the practical and relevant solutions.

Methods: This study was carried out at Wasat Abha Primary Health Care Center, Asir region during 1997. The files of diabetics who attended the center were evaluated for health education topics by using a checklist. The essential structure of diabetic health education program was assessed by using another check list designed by the investigators. Data entry and analysis was carried out through SPSS package. Chi-square test was applied wherever necessary.

Results: The total number of diabetics who attended Wasat Abha Primary Health Care Center was 198. The duration of diabetes mellitus was 7.7±5.8 years. Ninety percent of these were married, 50.5% were educated and 79% were employed. Compliance to appointment was good in 60% and poor in 30% of diabetics. About 73% of the diabetics received at least one health education topic while 27% did not receive any health education at all. Only 33% of diabetic patients had adequate health education. Ninety one percent were provided with diabetic identification cards, 80% were explained about diabetes and 77% were educated about the role of diet. Essential structure for diabetes education program was found to be unsatisfactory.

Conclusion: Effective diabetic health education program needs the availability of all essential structures, community participation and integration of the government and private sectors. The deficiencies in the structures and the process of health education programs in our practice are almost universal to other Primary Health Care Centers in the Asir region. Providing the Primary Health Care Centers with all essential structures and annual auditing are complimentary to a successful diabetic health education program.

Keywords: Diabetes, primary health care, health education.

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Effective and good diabetic education has long been acknowledged as essential in the maintenance of good glycemic control and prevention of diabetic complications.[1-3] It is widely accepted as the cornerstone of successful diabetes management[4] and as the best prescription for diabetes.[5] Since diabetes mellitus is associated with high rates of acute and chronic medical, social and psychological problems, the reduction and prevention of these problems will not be achieved without health education of the patients and their involvement in caring for themselves.[6] Health education of diabetic patients is priority in diabetic care not only to improve knowledge but to change patients attitudes, skills and behaviors.[6] Studies carried out in different regions of Saudi Arabia showed that diabetic patients lacked adequate knowledge and skills for good self-diabetic care.[7,8] The objectives of this study were to evaluate the health education program at a large Primary Health Care Center (PHCC) in Abha city,

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Asir Region, to find out the problems being faced by the staff and to suggest the practical and relevant solutions.

Methods. Wasat Abha PHCC (WAPHCC) where this study was carried out, is one of the 6 urban primary health care centers located in Abha city, Asir region. This PHCC serves about 15,000 inhabitants. Based on estimates, about 3% of this population suffer from diabetes. Half of these diabetics are followed up in other medical facilities such as private clinics, polyclinics, military hospital, and Abha diabetic clinic. We started to care for diabetic patients in a systematic way in 1994, however the diabetics mini-clinic started to play a major role in diabetic care at the beginning of 1996. This mini-clinic cares for diabetics, hypertensives and asthmatic patients. National Quality Assurance Protocol for Management of Diabetes was used as guidelines for diagnosis, treatment, follow-up and auditing the diabetic care in our practice.[9] A diabetic file was opened for each diabetic patient who attended our practice. The files were based on the quality assurance guidelines format and problem oriented medical records.[9,10] Each file consisted of 5 pages, one of which was designed as a health education checklist.

Table 1 - Characteristics of diabetic patients at Wasat Abha PHCC (n=198).

Characteristics	No of patients (%)
Age (Mean age - 55.2+12.2 years)	
<45 years	43 (22)
≥45 years	155 (78)
Sex	
Male	122 (62)
Female	76 (38)
Duration of diabetes	
(Mean duration 7.7+5.8 years)	85 (43)
<5 years	113 (57)
≥ 5 years	
Marital status	
Married	179 (90)
Single	5 (2.5)
Widow	14 (7)
Educational status	
Illiterate	77 (39)
Educated	100 (50.5)
Unknown	21 (11)
Employment	
Employed	156 (79)
Unemployed	42 (21)
Type of diabetes	
Type 1	10 (5)
Type 2	188 (95)
Family history of DM	
Positive	100 (50.5)
Negative	77 (39)
Unknown	21 (11)
Smoking	
Smokers	9 (5)
Non smokers	185 (83)
Unknown	4 (2)
Type of therapy	
Diet only	17 (9)
Diet & drugs	181 (91)
Compliance to appointment	
Good	122 (60)
Fair	21 (10)
Poor	55 (30)

The checklist contained the health topics namely; explanation of diabetes, antidiabetic drugs, signs and management of hypoglycemia, role of diet, foot care, risk of smoking, role of exercise, technique of insulin injection and importance and provision of diabetic card. After discussing each topic, the treating physician marked the topic on the checklist, noted the methods and the date of education of the patient.

Essential structure for a good health education program of diabetes was evaluated by a scoring system designed by the investigators. The scoring system based on a three point scale. The maximum score was 12 points while the minimum score was zero. The total score was considered as good if (>=6 points) and poor if (<=6 points). Health education was considered as satisfactory when the patient received ≥ four topics of health education and unsatisfactory when the patient received < four topics. Compliance to appointment was assessed in accordance with the score recommended by Khattab et al.[11] At the end of 1997, all diabetic files were evaluated for health education. The SPSS package was used for the analysis of demographic and health education related data. Rates were compared using Chi-square test wherever appropriate and P-value was considered as significant if it was < 0.05.

Results. The total number of the diabetic patients who attended the diabetic mini-clinic at Wasat Abha PHCC was 198. Table 1 shows the characteristics of the patients studied for the audit of Health Education program. Majority of the diabetics were male aged 45 years and above. The mean (SD) of age of the participants was 55.2 ± 12.2 years and the mean (SD) duration of diabetes was 7.7 ± 5.8 years.

Table 2 shows the topics of health education according to the methods used. Health education was

extended to the diabetic patients either by verbal discussion and pamphlets or by verbal discussion alone.

Table 3 depicts the frequency and percentage of topics of health education given to diabetic patients. It is evident from the table that 29% of the diabetic patients did not receive any health education at Wasat Abha PHCC while 73% were given at least one or more topics of health education. In the assessment, association between the provision of health education pamphlets and the characteristics of the patients only gender of the patient and their educational status had a significant role. Male and educated diabetics received more health education pamphlets than females and illiterate diabetics ($P < 0.05$). The total score of essential structure of health education program in our center was three out of twelve points, labelling it as poor. The only item of education which was available all time was the diabetic identification card. (Appendix 1).

Discussion. From the present study it is evident that health education programs at Wasat Abha PHCC is far from satisfactory for most of its elements. About 27% of diabetic patients did not receive any health education. Reasons attributed to this short fall in health education may be due to non-availability of health education structure at PHCC, over crowding of mini-clinic dealing with all chronic diseases and the poor educational status of the diabetic patients. In addition, the poor compliance to appointment may be an additional reason. Surprisingly, 91% of the diabetics were provided with diabetic identification card which is in conformity with the recommendations of the National Quality Assurance in Primary Health Care.[9] Probably the doctors in Primary Health Care Centers attached more importance to the provision of diabetic card as compared to other items of health education. Education of all diabetics in all aspects of diabetes is difficult to achieve in the absence of a trained health educator at PHCC. However, explanation of diabetes and the role of diet were explained to 80% and 77% of diabetic-patients which was fairly good.

In a study conducted in the United Kingdom[12] clearly demonstrated the highly beneficial effect not only on knowledge but also on metabolic control in patients who received their education in the primary care setting. Yet, another study confirmed the importance of diabetes education in the improvement of quality of life and life expectancy of diabetic patients.[13] Compliance with dietary advice can only be improved by spending more time on individual dietary education and by the availability of appropriate teaching material. There is a need for dietitians to spend more time with diabetic patients.[14] The other element of diabetic education namely; explanation of antidiabetic drugs and the role of exercise were discussed with 21% and 26%. Such deficiencies in diabetic education need urgent attention of the health planners/managers.

Foot complications are one of the major health problems of diabetics contributing to high morbidity, mortality and costs of diseases[15,16] and is one of the most common reasons for hospital admission.[17] The most common presentation is gangrene[18] and the majority will need some form of amputations.[19] A

Table 2 - Topics of health education according to methods of education (n=198).

Topics of health education	Verbal discussion and pamphlets	Verbal discussion alone	Total
1. Explanation of diabetes	102 (51)	57 (29)	159 (80)
2. Explanation of anti-diabetic drugs	8/181 (4)	30/181 (17)	38/181 (21)
3. Signs and management of hypoglycemia	25 (13)	17 (9)	42 (21)
4. Role of diet	142 (72)	10 (5)	152 (77)
5. Foot care	50 (25)	27 (14)	77 (38.9)
6. Risk of smoking	0 (0)	7/9 (78)	7/9 (78)
7. Role of exercise	36 (18)	16 (9)	52 (26)
8. Technique of insulin injection	10/36 (28)	6/36 (17)	16/36 (44)
9. Provision of diabetic identification card	180 (91)	-	180 (91)

Figures in parenthesis indicate percentage

Table 3 - Frequency and percentage of health education topics given to diabetic patients at Wasat Abha PHCC (n=198).

No. of topics	No of patients (%)
0	53 (27)
1	25 (13)
2	21 (11)
3	34 (17)
4	23 (12)
5	16 (8)
6	15 (8)
7	10 (6)
8	1 (0.5)
Adequate*	65 (33)
Inadequate**	133 (67)

*>=4 health education topics
**<4 health education topics

study conducted in Australia showed that intensive health education of diabetic patients significantly reduced the number of foot problems requiring treatment.[20] In the present study, health education regarding diabetic foot care was extended to a total of 39% of diabetics attending the PHCC while a detailed verbal discussion with supply of pamphlets was carried out with only 25% of the diabetic patients which is very low and demands an organized effort of health education program.

The technique of insulin injection is one of the most important tasks that a diabetic patient should carry out independently. General practitioners are in a good position to educate a diabetic patient in the technique of insulin injection. However, this technique was demonstrated to less than 45% of the patients using insulin which was higher to a study conducted in the eastern province.[8] All diabetics on insulin therapy need to be educated in insulin injection technique. This low figure could be due to the poor compliance to appointment, receiving the insulin injection either at home by relatives or by visiting the other medical settings in Abha city.

Hypoglycemia is a very serious acute complication in IDDM and NIDDM who are newly changed to insulin regimen.[11] Warning symptoms and signs of hypoglycemia should be listed to any patient using insulin.[6,9] Remembering one sign or symptom of hypoglycemia was recalled by about 50% of diabetic patient interviewed by El-Zubier et al.[8] Our study showed that the management of hypoglycemia was explained to 21% of the diabetic patients compared to 44% of diabetics on insulin. This area of health education should be strengthened especially for those who are on insulin.

In general, assessment of health education in our practice showed that one third of diabetics received satisfactory health education while 67% of diabetics received either no education at all or received unsatisfactory diabetic education. Analysis of the association between patient characteristics and provision with health education revealed that educated and male diabetics received more topics than illiterate and female patients did (P<.000). This strong association could be due to the importance of educational status which could help the physicians to communicate effectively with the patients because the educated patients can read and understand the written material provided to them during health education sessions.

The diabetics who had good compliance to appointment received more health education topics in comparison to poor complaints (x^2 = 13.4, DF = 0.6, P = 0.037). This association indicates the active role of patient in the success of health education program. Similar observations were also made by Khattab et al.[11] The lack of essential structure of health education program at the PHCC contributed to the failure of diabetic education program.

In conclusion, effective diabetic health education programs need all the essential structures to be provided, community participation to be encouraged and the other governmental and private sector activities to be integrated to run a good education program for all diabetics in our practice. This study revealed that there were deficiencies in the essential structures and process of diabetic education program in our practice. The barriers faced in our program in conducting the health education are almost universal to other PHCCs in Asir region. Our findings may be used as database for future evaluation. Dietitian and Health Educator should be invited to participate in health education of diabetics at primary care setting for making the health education program a success.

Appendix 1 - Availability of essential structure of diabetic health education program at Wasat Abha PHCC.

Structure for optimal diabetic education program	Scale		
	0	1	3
1. Diabetic health educator	0	-	-
2. Special equipped room for health education	0	-	-
3. Abailability of pamphlets/booklets	-	1	-
4. Diabetic indentification card	-	-	2
5. Coordination with other health sectors	0	-	-
6. Community participation	0	-	-

2 - Available all times
1 - Available sometimes
0 - Not available at all

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