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Relationship Between Initial Psychological Response To Diagnosis Of Diabetes Mellitus And Its Impact On Subsequent Management.^[c1]

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ABSTRACT

Introduction: This study is designed to test the hypothesis that a relationship exists between emotional reaction to diagnosis and the subsequent adherence to diet and exercise regimen, and to correlate the responses of subjects with factors like knowledge about diabetes and education status.

Material and methods: 100 randomly selected established cases of type 2 diabetes patients attending the diabetes clinic at MMIMS Hospital were interviewed with a questionnaire designed to elicit the reaction to diagnosis and adherence to the diet and exercise regimen among them. Responses were analyzed after content analysis to achieve the objectives. Chi - square test was applied to determine statistical significance.

Results: It was found that the patients with positive feelings at the time of diagnosis were better adherent to exercise regimen than those with negative feelings. The difference in adherence to dietary plan, however, wasn't found significant. Also, males were adherent to exercise than females. The patients who were fully explained about diabetes by physician showed better adherence to exercise than those who were not.

Conclusions: It can be safely concluded that patients with negative feelings and less knowledge about diabetes at the time of diagnosis show poor adherence to self - management regimen. The physicians need to understand the emotional state of the patients at the time of diagnosis and provide them sufficient information about the condition for better response to the prescribed self management plans.

Key Words : Diabetes, Emotional response, Diet, Exercise, Adherence

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Introduction

Diabetes is a life-long disease and a patient suffering from it, has to combat against it

throughout his life. Studies highlight that the receipt of bad news and the diagnosis of a chronic illness is an emotional time for a patient [1]. A study also reported that the

participants of their study, when told that they had diabetes, all reported feelings of shock, despair and anxiety in varying degrees [2].

A study explains that the attitude of doctors towards the patient at the time of diagnosis played an important role in their subsequent compliance to self-management [3]. Thus, the way a physician dealt with the reaction of the patient at the time of diagnosis is of vital importance in improving the management of diabetes. An insight into the patients' attitudes can help diabetes educators and patients develop realistic and relevant self-care plans [4]. A prompt and simple, but detailed advice about type 2 DM management would be helpful for newly diagnosed patients [5].

Family support also plays an important role in the patient's compliance.

This study would help the physicians in deciding how they have to deal with a patient while breaking the news of the diagnosis. A proper counselling and explanation of the salient features of the disease would encourage the patient to manage the condition in a more appropriate way.

Materials and Methods

Study Design

The sample consisted of 100 established cases of type-2 diabetes mellitus patients (diagnosed more than a year ago), attending the diabetes clinic at the Out Patient's Department of Medicine, MMIMS, Mullana, Ambala. Random sampling was done to choose the subjects for the study.

The patients were fully informed about the study design and the purpose of the study. Informed consent was taken from the patients before starting the interview.

Detailed history was taken and physical examination was done. The subjects were chosen for the study according to the following inclusion and exclusion criteria:

Inclusion Criteria

- Patients suffering from type 2 diabetes (established)
- Both sexes
- Age group of 30-60 years

Exclusion Criteria

- Diabetics diagnosed in the last one year
- Physically disabled
- Any disease contraindicating vigorous exercise like proliferative retinopathy, unstable angina, recent myocardial infarction, severe hypertension, etc.
- Hectic work schedule (>12 hours), irregular working hours (night shift etc.)
- Pregnancy
- Lactating mothers

The data was collected from every subject separately in the form of a questionnaire that focussed mainly on the following themes:

Diagnosis of diabetes and the patient's emotional reaction to it (as described by the subject)

The patient's self reported compliance to diet and the exercise regimen.

The questionnaire was derived from a similar qualitative study on compliance/adherence in patients living with type-2 diabetes [5] and also from the results of a comprehensive review of recent literature on compliance/adherence.

Interpretation of Data

Content analysis of the responses to the questions after interpretation could be structured into a master chart eliciting the following for each subject:

- The emotional reaction to the diagnosis.
- The adherence to the dietary regimen.
- The adherence to the exercise regimen.
- Education status of the patient.
- Annual family income
- Whether or not the patient was made aware of the various aspects of the condition at the time of diagnosis.

The degree of adherence to the diet and

exercise regimens among the optimistic and pessimistic emotional response groups was found out separately. Also, the adherence was determined separately among males and females and it was correlated with the patient's familiarity with diabetes and education status, annual income, etc.

The results were analyzed by statistical means. 2x2 contingency tables were made to analyze the adherence to diet and exercise regimen separately. Chi square test was applied and two-tailed P-values were calculated using an online statistics calculation software.

Results

On the basis of the response to questions, 38% patients were found to be optimistic and 62% had a pessimistic attitude at the time of diagnosis. (Table/Fig1) Not much difference was found between the optimistic and the pessimistic groups who were devoted to a prescribed diet regimen, ie 68.4% and 54.8% (Table/Fig1). But a marked difference was found in the adherence to the exercise regimen ie 63.15% and 29% respectively (Table/Fig2). For exercise adherence, this difference was statistically significant. On the basis of the familiarity with diabetes, patients who had some knowledge about diabetes were found to have significantly more adherence to the exercise regimen (61.9%) than those who had little or no knowledge about diabetes (27.58%) [Table/Fig2]. However, the adherence to the diet plan between the two groups was not significant [Table/Fig 1]. The difference in adherence among different groups on the basis of education levels and annual family income was not significant [Table/Fig1],[Table/Fig 2].

(Table/Fig 1) Adherence To Diet Regimen

Attitude		Number	Adherent	P Value	Significance
	Optimistic	38(38%)	26(68.4%)	0.5130	Ns
	Pessimistic	62(62%)	34(54.8%)		
Gender					
	Male	50(50%)	30(60%)		Ns
	Female	50(50%)	30(60%)		
Familiarity					
	Some	42(42%)	32(76.1%)	0.089	Ns
	None	58(58%)	28(48.2%)		
Education Status					
	Graduates	18(18%)	14(77.7%)	0.6015	Ns
	Till 10 th	42(42%)	26(61.9%)		
	Below 10 th	12(12%)	8(66.67%)		
	Illiterate	28(28%)	14(50%)		
Annual Family Income					
	<75,000	32(32%)	18(56.25%)	0.8975	Ns
	75000-150000	54(54%)	34(62.96%)		
	>150000	14(14%)	8(57.14%)		

Adherence to diet regimen by the subjects on basis of attitude, gender, familiarity to diabetes, annual family income and education status. Figures in parenthesis show percentage of subjects. S=Significant, NS= Non significant.

(Table/Fig 2) Adherence To Exercise Regimen

Attitude		Number	Adherent	P Value	Significance
	Optimistic	38(38%)	24(63.15%)	0.0377	S
	Pessimistic	62(62%)	18(29%)		
Gender					
	Male	50(50%)	28(56%)	0.0433	S
	Female	50(50%)	12(24%)		
Familiarity					
	Some	42(42%)	26(61.9%)	0.0326	S
	None	58(58%)	16(27.5%)		
Education Status					
	Graduates	18(18%)	5(55%)	0.1448	Ns
	Till 10 th	42(42%)	20(47.6%)		
	Below 10 th	12(12%)	4(33.3%)		
	Illiterate	28(28%)	4(14.25%)		
Annual Family Income					
	<75,000	32(32%)	10(31.25%)	0.4408	Ns
	75000-150000	54(54%)	26(48.14%)		
	>150000	14(14%)	4(28.57%)		

Adherence of subjects to exercise regimen on the basis of attitude, gender, familiarity to diabetes, annual family income and education status. S= significant, ns= non significant

Discussion

Diabetes mellitus refers to a group of metabolic disorders which are characterized by hyperglycaemia. The disorder has been divided into type 1 and type 2 diabetes mellitus. The number of cases of both type 1 and type 2 diabetes are rising throughout the world, but in future, a greater rise in the prevalence of type 2 is expected, because of obesity and reduced activity levels globally. The estimated prevalence of diabetes among adults was 7.4% in 1995; this is expected to

rise to about 9 % in 2025[6].

In both the types, the active self management of the illness by the maintenance of blood glucose levels in normal limits is the key to a good quality of life. Studies of clinical and educational interventions suggest that improving the patients' health status and perceived ability to control their disease results in an improved quality of life [7]. Diabetes mellitus type 2 is a chronic illness and more than 95% of diabetes care is performed by the patient; so, health professionals have very little control over how their patients manage their illness between office visits [8].

One factor, which is believed to hold importance in the self management, is the reaction of the patient at the time of being diagnosed with diabetes. How the physician counsels the patient at the time of diagnosis plays a crucial role in the perceived seriousness by the patient [3].

A physician has to work out a simple, yet effective advice and information for the patient for better management. The emotional reaction shown by the patient at the time of diagnosis may help the physician in helping the patient in a more effective way. For this, the compliance pattern in relation to the emotions of the patients holds significance [5].

Therapeutic interactions with patients should no longer be viewed simply as opportunities to reinforce instructions around treatment: rather, they should be seen as a space where the expertise of the patients and health professionals can be pooled to arrive at mutually agreed goals [9]. In primary care, patients strongly want a patient centered approach, with communication, partnership and health promotion [10]. It is increasingly evidence-based that patients should be considered as the doctor's partner and should make decisions about the treatment regimen together with the physician [11].

In the field of diabetes management, the concept of empowerment holds utmost importance. Empowerment addresses not just the disease management, but other components including emotional, spiritual, social and cognitive aspects [12],[13]. Tailored education forms part of the empowerment pathway, incorporating it into the context of the individual's life [14].

The patients' own knowledge, ideas and experiences, as well as those of family members and friends, have also been shown to correlate with compliance [15]. In a study, 65% of the spouses felt that diabetics required minimum support. Most men received support from their spouses in adhering to diet and more women depended on their spouses to go for exercise [16].

In this study, I found out the adherence of 100 type 2 diabetes mellitus patients to lifestyle changes (diet control and exercise regimen) and related it with various factors which are believed to affect the same i.e. emotional reaction to diagnosis, knowledge about diabetes when diagnosed, education level and family support .

The main aim of this study was to test the hypothesis that a relationship exists between the reaction to diagnosis and the patient's subsequent compliance. Patients having an optimistic attitude at the time of diagnosis had a significantly higher degree of adherence to the exercise regimen than those with a pessimistic attitude. For diet control, the difference was not found to be statistically significant.

An explanation for this result is that diet control is comparatively easier to follow than adherence to the exercise regimen. It was found that 30 (60%) patients were compliant to the diet as compared to 40% compliance to the exercise plan. In other works which were reviewed, a similar pattern was seen, the %age of dietary compliance being higher than exercise. A

focus group study among type-2 diabetics found the dietary and exercise compliance to be 81.7% and 57.2%, respectively [17].

Male patients were more adherent to the prescribed exercise regimen than females, while both were equally well compliant to the diet control plans. In a study on gender differences in living with diabetes, men were shown to live more effectively than women [18]. In India, women have a poorer quality of life and well being [19] and so, must be encouraged to develop a more positive attitude. Compliance to lifestyle changes has also been studied by many researchers. Anderson et al divided the participating patients into two groups: high and low adherence groups. Differences in attitudes between the high- and low adherence groups were more prevalent for difficult adherence areas, e.g., diet and exercise, than for easy adherence areas like carrying sweets [4].

The most commonly reported reason for the defiance to exercise among males was the nature of the occupation, followed by body ache and laziness. On the other hand, in females, household work was the most commonly reported barrier, followed by laziness, body aches and the nature of the occupation [Table/Fig 3]. The only reason for not adhering to diet plans as reported by most of the patients, was their helplessness in controlling the craving for sweets. Shobhana et al found that non-adherence was due to the nature of occupation (38%); followed by household work (35.2%), body ache (18.3%) and laziness (8.5%) [17]. The most common psychological problems faced by diabetes patients included dietary restrictions, self-monitoring of blood glucose, taking insulin injections and lack of support from family and health care professionals [20]. A Cross National Diabetes Attitudes, Wishes and Needs (DAWN) study found that 41% patients had poor psychological well-being and only 10% of them reported to be taking psychological

treatment [21].

(Table/Fig 3) Reasons For Non Adherence To Exercise Regimen

Males	Reason	%
	Nature Of Occupation	54.5%
	Body Aches	27.2%
	Laziness	18.3%
Females		
	Household Chores	57.89%
	Laziness	26.31%
	Body Aches	10.52%
	Nature Of Occupation	5.28%

Reasons of non adherence to diet and exercise regimen in males and females.

The patients who had previous knowledge about diabetes or were made aware of it by the physician showed better self management in terms of adherence to diet and exercise regimen than those who had little knowledge. Thus, these results clearly indicate the need for physicians to make their patients perceive the condition seriously.

The comparison of compliance among the patients with different education levels revealed that well educated patients were better compliant than poorly educated patients. The adherence was also compared among different economic groups, but a marked difference was not observed in the adherence among these groups.

The role of family members also cannot be underestimated. Among the patients who were not supported by their family, only 14.2% were adherent to the exercise regimen. The family members inspire the patient for a better quality of life, because of which better compliance is found in patients with good family support. A hospital-based cross-sectional study emphasized the importance of the role played by family members in the self-management of a diabetic. The study was based on the factors influencing the basic knowledge about diabetes and the attitude and behaviour regarding diabetes among the family members of diabetics. Factors such as

gender, place of residence (rural or urban) and level of education were quoted to affect the knowledge among the family members. An appreciable behavioural change was observed in the participants as they were ready to restrict oily and fried food and sweets and also to start exercising [22].

There is a need for more research in this field, especially on the emotional reaction to diagnosis. Studies can also involve physicians in order to find out how they respond to the varied reactions of the patients. Also, questionnaire based study, though effective, cannot match the focus group studies, through which the subjects' inner feelings and perceptions can be explored more candidly and spontaneously.

The data generated by such studies will be helpful in studying the psychosocial problems of the patients and making them mentally prepared to see the life ahead with a positive attitude, when they are diagnosed with diabetes.

Conclusions

Patients with a pessimistic attitude and less knowledge about diabetes at the time of diagnosis show poor adherence to the self-management regimen. Thus, a physician needs to analyze the emotional response of the patient while breaking the news of diagnosis and should counsel the patient accordingly for better adherence and thus, a better control of diabetes. This would also result in a delay in the appearance of complications among the patients.

The physician should be able to impart simple but sufficient knowledge to the patient, explaining in brief about the various aspects and the possible complications of diabetes, so that the patient is aware of the need for self management for a better quality of life. There is a need for developing mutual understanding between the physician and the patient, so that the patient is not left with any kind of doubts

which are related to the treatment.

Further exploration should be done on the topic, especially on the emotional reaction to the diagnosis, as very little literature is available on the subject. Focus group studies involving both physicians and patients should be carried out to explore the feelings and thoughts of both, in a better way.

The outcome of self management has to be improved by combining the efforts of the physician, educator, nutritionist and the psychologist, with the individual and his/her family.

Key Messages

- Emotional responses affect diabetes management
- Males adhere more to the exercise regimen than females
- Dietary compliance is higher than exercise compliance
- Physicians must impart sufficient knowledge to the patients

References

- [1] Faulkner A. When the news is bad: a guide for health professionals on breaking bad news. Cheltenham, UK: Stanley Thornes; 1998;782-790
- [2] Gilibrand W, Flynn M. Forced externalization of control in people qualitative exploratory study. *J Adv Nurs* 2001; 34:501-10.
- [3] Dietrich UC. Factors influencing the attitudes held by women with type II diabetes: a qualitative study. *Patient Educ Couns* 1996; 29:13-23.
- [4] Anderson RM, Fitzgerald JT, Oh MS. The relationship between diabetes-related attitudes and patients' self-reported adherence. *Diabetes Educ* 1993;19: 287-92.
- [5] Peel E, Parry O, Douglas M, Lawton J. Diagnosis of type 2 diabetes: a qualitative analysis of patients' emotional reactions and views about information provision. : *Patient Educ Couns*. 2004 Jun;53 (3):269-75.
- [6] American Diabetes Association: Screening for diabetes. *Diabetes Care* 2003, 26(Suppl 1):S21-S24.
- [7] Rubin RR, Peyrot M. Quality of life and diabetes. *Diabetes Metab Res Rev*. 1999 May-Jun; 15(3):205-18.
- [8] Funnell MM, Anderson RM. MSJAMA: the problem with compliance in diabetes. *JAMA*. 2000;

- 284:1709.
- [9] Bissell P, May CR, Noyce PR. From compliance to concordance: barriers to accomplishing a re-framed model of health care interactions. *Social Science & Medicine* 2004, 58(4):851-62.
- [10] Little P, Everitt H, Williamson I, et al.: Preferences of patients for patient centred approach to consultation in primary care: observational study. *BMJ* 2001, 322(7284):468-472.
- [11] 11. Vermeire E, Hearnshaw H, Van Royen P, Denekens J. Patient adherence to treatment: three decades of research. A comprehensive review. *J Clin Pharm Ther.*2001;26: 331-42.
- [12] 12. Arnold MS, Butler PM, Anderson RM, Fummell MM, Feste CC. Guidelines for facilitating a patient empowerment program. *Diab Educ* 1995;21 :308-12.
- [13] 13. Anderson RM, Fummell MM, Butler PM, Arnold MS, Fitzgerald JT, Feste CC. Patient empowerment: results of a randomized control trial. *Diabetes Care* 1995; 18:943-9.
- [14] Brown F. Patient empowerment through education. *Prof Nurs* 1997; 13 (Suppl 3):S4-6.
- [15] Roberson MHB. The meaning of compliance: patient perspectives. *Qualitative Health Research* 1992, 2:7-22.
- [16] Sridhar GR, Madhu K. Psychosocial and cultural issues in diabetes mellitus. *Curr Science* 2002; 83:1556-64.
- [17] Shobhana, A Christina, PR Rao, M Margaret, V Vijay, A Ramachandran. A Focus Group Study Among Type 2 Diabetic Subjects. *Journ Assoc Phys India* 2007;55:84-85.
- [18] Veena S,Sridhar GR, Madhu K. Gender differences in living with type 2 diabetes. *Intl J Diab Dev Countries.* 2001;21:97-102
- [19] Sridhar GR, Madhu K. Stress in the cause and course of diabetes . *Intl J Diab Dev Countries.* 2001;21:112-120
- [20] Rubin RR, Peyrot M. Psychological issues and treatments for people with diabetes. *J Clin Psychol.* 2001 Apr;57(4):457-78.
- [21] Peyrot M, Rubin RR, Lauritzen T, Snoek FJ, Matthews DR, Skovlund SE. Psychosocial problems and barriers to improved diabetes management: results of the Cross- National Diabetes Attitudes, Wishes and Needs (DAWN) Study. *Diabet Med.* 2005 Oct;22(10):1379-85.
- [22] Ambar S, Jali MV. Knowledge , attitude and behavior regarding diabetes amongst family members of diabetes patients. *Jour Assoc Phys India.* 2007;55:742-44