

Study of the relationship between socioeconomic status and controlling diabetes among patients admitted to specialized clinic of Dr. Gharazi hospital in Isfahan-2011

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ABSTRACT

Introduction: Diabetes is one of the chronic diseases that have been considered by policy makers. Diabetes causes premature mortality, disability and sometimes irreversible problems. Although it is under consideration of doctors, there is no study about the role of the socioeconomic status of the patient in control of diabetes in our society. The main purpose of this research is to explore relationship between socioeconomic status and control of diabetes. **Materials and Methods:** 320 diabetic patients were randomly chosen from specialized clinic of Dr. Gharazy hospital. The element was questionnaire which its reliability was calculated according to coefficients Cronbach's alpha ($r = .078$). The patients' two previous sessions' blood sugar level and also their HbA1C were studied via referring to their medical records. Then the patients were categorized into successful and unsuccessful groups in controlling the diabetes. Their socioeconomic status was analyzed through SPSS software. **Results:** The findings show that there is a direct relationship between socioeconomic status and control of diabetes. The better socioeconomic status is the better diabetes has been controlled. **Conclusion:** In order to control diabetes, taking drugs and patients' socioeconomic status should be take into consider and social screening is essential.

Key Words: Control of disease, diabetes, socioeconomic status

INTRODUCTION

One of the diseases that have been considered by health policy makers is diabetes. It is a chronic disease that causes early death and disability. It also causes different side effects on patients that impose a heavy burden on patients, their family and society. It is the fifth cause of death in western

countries. It involves 6 to 15 percent of society that half of them remain unknown.^[1] More than 220 million people suffer from diabetes, and it seems that its number will increase twice as much in 2030.^[2] Due to the increasing number of diabetes worldwide as the World Health Organization (WHO) announced diabetes as a hidden epidemic and asked all countries to confront the epidemic since 1993.^[1] WHO in 1998 reported that population of the world (more than 30 years) will have increased 64% from 1995 to 2025, and prevalence of diabetes which was 4% in 1995, will be 54% in 2025. The number of people who suffer from diabetes increase 122% and it means that diabetics' population that was 135 million people in 1995, will be 300 million people in 2025 and developing countries' portion will be more.^[1] However, more than 80% of diabetes deaths occur in low- and middle-income countries.^[2] The significant changes in number of diabetics cause that prevention and controlling diabetes be considered main priority worldwide. Although diabetes does not have an absolute cure it can be controlled

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by taking drugs, being in diet, and changing life style. The role of socioeconomic factors in preventing and incidence of this disease is accepted. Socioeconomic status has a broader concept than social class, and it is related to a broad spectrum such as job, income level, education, residential area, authority and social situations.^[3] However, there are no many works in Iran to focus on the relationship between socioeconomic status and diabetes control. The main purpose of this research is to study the relationship between socioeconomic status of diabetics and controlling diabetes.

MATERIALS AND METHODS

This research is applied a descriptive-analytic method. This is descriptive as it explains statistic population and is analytic because it studies the relationship between variables. On the other way this research is applicable because of efficiency of its result in controlling diabetes. Patients referred to the diabetes clinic of Dr. Gharazy hospital in Isfahan, were under cure and control of diabetes. Their medical records were chosen as the statistic population. The number of patients who had medical record in hospital was 1800. Sample size was calculated as 320 patients based on Cocran formula. The data was collected during a period of four months in 2011. The patients were chosen randomly. To determine the patients' condition, blood sugar level of their two last visits and also their HbA1C were observed by referring to their medical records from the view point of controlled and uncontrolled diseases. Their information was recorded in their questionnaires. After this, the questionnaires of their socioeconomic status were filled out by the patients. If the patients were not able to answer the questionnaire, the researcher would help them to record their answers.

The criteria for participation to this research included: diagnosing diabetes, having medical record in hospital and patients' satisfaction. The questionnaire was constructed by researcher and included demographic variables such as gender, age, marital status and also questions that measure patient's socioeconomic status such as education, the patient's and his or her spouse' job, monthly salary and accommodation. The reliability of questionnaire was calculated according to coefficients Cronbach's alpha ($r = .078$). Controlling diabetes is a dependent variable. Patients that their blood sugar level was less than 140 mg/dI were chosen as successful

patients in controlling diabetes. To ensure, HbA1C was also considered and its rate was considered under 7/6 as an index of controlling diabetes. In order to calculate the variables' scores, a compound index was organized in socioeconomic status index. Education and the patient's and his or her spouse's job is associated with point value of 2 and the patient's accommodation is associated with 1 in this index. Since most of the patients who referred to Dr. Gharazi hospital are under the social security insurance and have approximately similar income and as patients prefer to go to the nearest clinic, so in regard to the geographic distribution the accommodation and inhibited area is the same too, therefore the accommodation is associated with 1 and level of education, patient's and his or her spouse's job are associated with 2. Collected data was analyzed by SPSS software and to reach to the ends of the research t-test and following-test were used.

RESULTS

Data show that 60.3% cases were female and 39.7% were male. The blood sugar level of 53.1% cases was fewer than 140 mg/dI in two last visits and blood sugar of 46.9% cases was more than 140 mg/d. The first group with their HbA1C under 7.6 was chosen as successful patient in controlling diabetes and the second group as patient in uncontrolled diabetes. Among 53.1% of patients who controlled their diabetes 33.4% were female and 19.6% were male and among 46.9% of patients who uncontrolled their diabetes 26.7% were female and 19.8% were male.

Table 1 show the frequency distribution based on age, according to this table, 26.5% patients who have controlled their diabetes and 26% patients who have not controlled their diabetes are in the 50-59 age range.

Table 2 shows that 36.6% of patients are illiterate (30.6% is patients who have controlled their diabetes and 43.3% are patients who have not controlled their diabetes). MA educated people and higher has the least frequency which is about 3/5% of patients who were successful in controlling their diabetes.

Table 3 shows socioeconomic status of questioners according to 5 classes. In deductive analysis socioeconomic status and controlling diabetes were studied by t-Test. It could find the result of t-Test in Table 4. It shows that in regard to the

Table 1: Frequency distribution based on age

Variable	Uncontrolled		Controlled		Total	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Younger than 20	1	0.7	0	0	1	0.7
20-29	2	1.3	4	2.4	6	1.9
30-39	11	7.3	9	5.3	20	6.3
40-49	32	21.3	44	25.9	76	23.8
50-59	39	26	45	26.5	84	26.3
60-69	36	24	42	24.7	78	24.4
70 and older	29	19.3	26	15.3	55	17.2
Total	150	100	170	100	320	100

Table 2: Frequency distribution based on educational level of patients

Variable	Uncontrolled		Controlled		Total	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Illiterate	65	43.3	52	30.6	117	36.6
Ability to read and write	8	5.3	1	0.6	8	2.8
Certificated of secondary school	46	30.7	61	35.9	107	33.4
Diploma	20	13.3	26	15.3	46	14.4
Junior college of diploma	0	0	7	4.1	7	2.2
Bachelor of art (BA)	11	7.3	17	10	28	8.8
Master of art (MA) and higher	0	0	6	3.5	6	1.9
Total	150	100	170	100	320	100

Table 3: Frequency distribution of levels of socioeconomic status

Variable	Controlled		Uncontrolled		Total	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Extremely high	20	12.9	5	2.3	27	8.4
High	10	5.9	0	0	10	3.1
Medium	30	17.6	31	20.7	61	19.1
Low	85	50	73	48.7	158	49.4
Extremely low	23	13.5	41	27.3	64	20
Total	170	100	150	100	320	100

Table 4: Results of T-test

	Socioeconomic statuses
Mean of controlled diabetes	2.54
Mean of uncontrolled diabetes	2.03
Difference of means	0.51
T score	4.328
Df	318
Significant level	0.001

differences of means (51%) and correlation coefficient of 0.001 which is less than 0.05. There is a significant difference between socioeconomic status of diabetics who have controlled their blood sugar level and patients that have not controlled their blood sugar level. It means the socioeconomic status of diabetics who have controlled their diabetes is better than those who have not controlled. Therefore there is a relationship between socioeconomic status and controlling diabetes.

In order to complete the study, t-test was taken too. The difference between level of education and controlling diabetes were studied and considered that there is a significant difference between education of diabetics who have controlled their disease and diabetics who have not controlled their disease. Level of education of patients who have controlled their diabetes is higher than patients who are not successful in controlling their diabetes.

DISCUSSION

The purpose of this study is to find a relation between socioeconomic status of the patient's who could control diabetes. The data showed that there are a significant difference between the socioeconomic status of diabetics

who their blood sugar level has been controlled and those who has not been. The finding of this research corresponded with others in the west that people in higher socioeconomic status could control their diabetes than lower.^[4-6] The same topic in another way has been considered by Mahammadpoor and colleagues. They have analyzed the quality of life and its effects on people from Tabriz who suffered from diabetes. They found out that there is a significant relation between quality of life which is resulted from individual, social, economical factors, and its effect on self treatment of patients who suffer from chronic diabetes.^[8] Kiz and colleagues show that there is a significant relation between quality of life and some variables like age, sex, marital status, educational level, and income.^[9] However the finding of this research shows that there is a meaningful relationship between educational level of patients and their control on diabetes. In fact it was proved that educational level of the patients controlled their diabetes was higher than patients uncontrolled it. Most of patients had low level of education, and this fact limited their teaching and acquisition. As it was considered that all patients were higher educated (i.e. M.A or M.S.) holders and higher than could control diabetes. These findings are alongside to the work of Chatuvedi and colleagues. They demonstrated that the mean percentage of HbA1c is worst in primary-educated men and women in European clinics.^[10] Those that could not control their diabetes, not only had low level of education, but also had low family income. Tang and colleagues also state that prevalence of diabetes is related to decreasing income an education in Western countries.^[11] Low level of family income and lack of having enough food leads to malnutrition which is resulted by not providing healthy, nutritious food which is in accordance with not having a treating diet.

Based on the results it is suggested to increase financial help and social support for vulnerable patients in a serious way socially

and economically screening of the society is recommended. Moreover, diabetics concerns and their anxiety of future are a factor that leads to a serious threat to diabetes, and there is a vital suggestion to insurance organizations and others to provide financial support for this group of people.

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