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Original Research Article

Treatment satisfaction among diabetics attending a tertiary care hospital of Rohtak, Haryana: a cross-sectional study

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ABSTRACT

Background: The epidemic of diabetes mellitus is rising globally due to urbanization, population growth, aging, obesity and sedentary life style. Treatment satisfaction is defined as the individual's rating of important attributes of the process and outcomes of his/her treatment experience and it represents an important outcome as it is related to adherence and willingness to continue treatment.
Methods: A cross-sectional descriptive hospital-based study was conducted at endocrinology OPD attached to Pt. B.D. Sharma PGIMS Rohtak, Haryana from May 2014 to April 2015. Five hundred diabetics (type 1 and 2) were recruited for the study. Patients registered on the day of interview were selected using systematic random sampling. A predesigned, pretested, semi-structured schedule which included socio-demographic variables of the study subjects along with information about family history of diabetes was filled by interviewing the study subjects in their vernacular language individually. DiabMedSat was used to assess the treatment satisfaction.
Results: Nearly two third of the study participants were treated on oral hypoglycaemic agents (76.2%) followed by subjects treated on insulin+OHA (21.4%). 2.4% of the study subjects were on treatment with insulin alone. 87.8% of female subjects were satisfied with their treatment as compared to 86.3% of their male counterparts.
Conclusions: Treatment satisfaction has a positive influence on quality of life of the study subjects as those who are satisfied tend to better adhere to their drug regimen thereby achieving a desirable glycaemic control and averting the complications associated with the disease thereby leading to a healthier life.

Keywords: Diabetes mellitus, Treatment satisfaction

INTRODUCTION

The epidemic of diabetes mellitus (DM) is rising globally due to urbanization, population growth, aging, obesity and sedentary life style. DM has emerged as a major public health problem in India. The real burden of diabetes is mainly due to its associated complications which lead to increased morbidity and mortality. Many studies conducted from various parts of India revealed a rising trend in the prevalence of type II diabetes in the urban areas. India with its rising number of diabetics is also holding the sceptical distinction of being the "diabetes capital of the world".[1] The contemporary approach to healthcare seeks to involve the attention of both patients and the public in developing healthcare services and equity of access, but this is not easy to achieve, as it requires time, commitment, political support and cultural change to overcome these barriers.[2,3] Improvements in selected areas of health care delivery is done through quality assurance and outcome assessment which is driven by political expediency. Though this is

quintessential, a 'bottom up' assessment of patient satisfaction with treatment seems more preferable if health care service improvement is to be translated into health outcomes meaningful to patients, especially improved quality of life.[4,5] Treatment satisfaction is defined as the individual's rating of important attributes of the process and outcomes of his/her treatment experience.[6] Patient reported outcomes (PROs) include health related quality of life, self-reported symptoms, functional status, and other end points derived from direct reports of patient experience. Treatment satisfaction is a patient reported outcome that might give useful insights into the patient's perspective on their current treatment and differentiation among alternative treatments. The extent to which patients are satisfied with their health care depends on treatment satisfaction, as evident from clinical evaluations. Satisfied subjects are more likely to comply with treatment and play an active role in their self-care practices which is an important step to delay certain diabetic complications.[7,8] Patients who are satisfied will be more adherent to their treatment and will continue using medical care services and comply with a health provider.[9] Treatment satisfaction represents an important outcome as it is related to adherence and willingness to continue treatment. Poor adherence to long term therapies will affect the effectiveness of treatment thereby in turn affecting population health in aspects of quality of life and health economics.[10]

Patients' satisfaction is related to the extent to which general health care needs and condition-specific needs are met. In addition, health professionals may benefit from satisfaction surveys that identify potential areas for service improvement so that health expenditure may be optimised through patient-guided planning and evaluation.[3] The study was conducted to assess the level of treatment satisfaction among diabetics attending the endocrine OPD in a tertiary care hospital of Haryana.

METHODS

A cross-sectional descriptive hospital-based study was conducted at endocrinology OPD attached to Pt. B.D. Sharma PGIMS Rohtak, Haryana from May 2014 to April 2015. Taking 27% prevalence of treatment satisfaction and 15% allowable error, the sample size came out be 480.65 of which 500 diabetics ≥20 years and ≤60 years of age attending the OPD who had given their consent to participate in the study were included by systematic random sampling method.[11] A predesigned, pretested, semi- structured schedule which included socio-demographic variables of the study subjects along with information about family history of diabetes was filled by interviewing the study subjects in their vernacular language individually. DiabMedSat was used to assess the treatment satisfaction and it has 21 items investigating 3 dimensions–efficacy of medication (5 items), treatment burden (11 items) and symptoms-side effects due to medication (5 items) respectively.

All scores were derived by first reversing items necessary to assure that all items are framed in the same direction, then computing the mean of the items in each subscale. The overall score was computed as the mean of the three subscale scores. The scores were transformed on a 0 to 100 point scale with higher scores indicating greater satisfaction. A user agreement was signed with MAPI research institute (Lyon, France) prior to using the questionnaire. The completed schedule was checked for completeness, consistency and was coded. Data entry was done using MS Excel 2010. Categorical data was presented as percentages (%). The statistical tests were performed at 5% level of significance; thus, an association was significant if the p value was less than 0.05. Binary logistic regression was applied to analyse the relationship between the dependent and independent variables. Data analysis was performed using scores and odds ratio using statistical package for social sciences (SPSS) version 20.0 software. Mean of summary scores of treatment satisfaction was used to categorize high and low treatment satisfaction.

RESULTS

Among the study participants, 51% were males and 49% were females. More than half of the study participants were in the age group of more than 50 years (55.2%) and most of them were married (97.4%) which included currently married and widowed. More than half of the respondents belonged to upper middle socioeconomic status (51.8%) followed by lower middle (35.0%) and lower socioeconomic status (11.6%). 87.8% of female subjects were satisfied with their treatment as compared to 86.3% males. Only 12.2% of the females were dissatisfied with their treatment.

The overall mean score for all the subscales was 82.02±14.17. The mean score for the symptoms due to medication subscale of treatment satisfaction was found to be the highest (91.95±12.97) indicating that subjects did not have any side effects of medication or they were not bothered about side effects. Efficacy subscale (69.52±20.79) had the minimum mean score indicating that the subjects were slightly satisfied with their medications for keeping their blood sugar levels stable.

Table 1: Gender wise treatment satisfaction and dissatisfaction.

Treatment satisfaction	Male (%)	Female (%)	Total (%)
Satisfied	220 (86.3)	215 (87.8)	435 (87.0)
Dissatisfied	35 (13.7)	30 (12.2)	65 (13.0)
Total	255 (100)	245 (100)	500 (100)

χ^2=0.242, df=1, p=0.623.

Patients on oral hypoglycemic agents were having a higher treatment satisfaction than the other treatment groups as indicated by their higher mean scores. The

study subjects on insulin alone group had low treatment satisfaction. Thus, an association between treatment satisfaction and type of treatment received was found to be statistically significant (p<0.05).

Table 2: Mean of individual subscale scores of treatment satisfaction (n=500).

Subscales	Mean±SD
Efficacy of medication	69.52±20.79
Burden of medication	84.59±16.98
Symptoms due to medication	91.95±12.97
Overall	82.02±14.17

Illiterate subjects were likely to have 1.6 times low treatment satisfaction than literate subjects however there was no significant association. Similarly, no significant association was observed between the different age groups. Subjects on insulin+OHA were having 0.2 times and those on insulin alone were having 0.5 times low satisfaction as compared to those on OHA alone and these associations were significant (p<0.05).

By Pearson's correlation statistics, each subscale was significantly related with each other and the overall treatment satisfaction at p<0.01 i.e. they were positively correlated with each other.

Table 3: Association between treatment satisfaction and type of treatment received.

Treatment satisfaction	Insulin+OHA	Insulin	OHA	F value	ANOVA significance
Efficacy	65.42±22.00	64.31±27.40	70.85±20.09	3.264	0.039*
Burden	82.41±16.38	69.70±21.19	85.68±16.77	6.411	0.002*
Symptoms	87.78±16.01	76.67±20.24	93.61±11.07	18.141	0.000*
Overall	78.54±14.51	70.22±16.68	83.38±13.68	9.449	0.000*

*Statistically significant.

Table 4: Association of socio-demographic and diabetes parameters of study participants with treatment satisfaction (logistic regression analysis) (n=500).

Variables	Frequency	aOR	P value
Literacy			
Literate	429	Reference	
Illiterate	71	1.616 (0.963-2.712)	0.069
Age groups (in years)			
>50	276	Reference	
35-50	191	0.551 (0.250-1.214)	0.139
<35	33	0.793 (0.538-1.169)	0.241
Treatment			
OHA	381	Reference	
Insulin+OHA	107	0.222 (0.056-0.885)	0.033
Insulin	12	0.505 (0.326-0.782)	0.002

Table 5: Pearson's correlation between subscales of treatment satisfaction questionnaire.

Subscales	Symptoms	Burden	Efficacy	Overall
Symptom	1.000			
Burden	0.440**	1.000		
Efficacy	0.364**	0.748**	1.000	
Overall	0.659**	0.899**	0.899**	1.000

**Correlation is significant at 0.01 level (2 tailed).

DISCUSSION

Assessing treatment satisfaction is useful for documenting the patient's perceived burden of chronic diseases, tracking changes in health over time, assessing the effects of treatment and quantifying the return on health care investment. In the present study, 51% (255/500) study subjects were males and 49% (245/500) were females. Studies conducted by Worner et al and Srinivas et al showed that 56.5% and 50% of the study participants were males, respectively.[12,13] Out of the total study participants, 55.2% were in the age group >50 years followed by 38.5% in 35-50 years age group. A similar finding was reported by Al Hayek et al in which the subjects of 50 years and above were around 61%.[14] IDF data (2014) states that almost half of all adults with diabetes are between the ages of 40 and 59 years. In this study 87% study subjects were satisfied with their current treatment. Such high satisfaction level may be due to the fact that study subjects were receiving their treatment from the tertiary care hospital where super specialty services were available. Similar findings were reported in a study conducted by Avramopoulos et al.[15]

In the present study, the mean score for the symptoms due to medication subscale of treatment satisfaction was found to be highest (91.95±12.97) indicating that subjects did not have any side effects of medication or they were not bothered about side effects. Efficacy subscale (69.52±20.79) had the minimum mean scores indicating that the subjects were slightly satisfied with their medications for keeping their blood sugar levels stable. The burden of medications had a subscale score of 84.59±16.98 indicating that subjects were only slightly bothered regarding monitoring of blood glucose and very satisfied with the convenience of medication. The overall

treatment satisfaction was high (82.02±14.17) among diabetics in our study. Similar findings were reported by Pollack et al where the overall treatment satisfaction among study subjects was 84.04±7.92. Studies conducted by Jamous et al and Bener et al also reported a higher treatment satisfaction among the study subjects.[16,17] In contrast to our finding, Al Ahujan et al reported that the mean scores for the burden, efficacy, and symptoms domains were 59.81 (SD=15.7), 58.1 (SD=22.6), and 60.77 (SD=22.1) respectively.[11]

In the present study, patients on oral hypoglycemic agents (mean score=83.38) were having a higher treatment satisfaction than those on insulin+OHA (mean score=78.54) and Insulin alone (mean score=70.22). The association between type of treatment taken and treatment satisfaction was significant in the efficacy (p=0.039), burden (p=0.002) and symptoms (p=0.000) subscales of treatment satisfaction (Table 3). This may be due to the convenience of availability and storage of OHA when compared to Insulin. Further the misconceptions and pain associated with insulin injections might be the reason for lower satisfaction with insulin. Findings by Biderman et al and Nicolucci et al reported that low satisfaction was found among insulin treated patients than those on oral drugs.[18,19] In a study conducted by Al Aujan et al, patients on insulin treatment reported lower levels of satisfaction in comparison to those who were on oral medications and the difference between them was statistically significant (p=0.02).[11]

Logistic regression analysis revealed that persons on OHA were more satisfied than those on OHA+insulin and insulin alone. Treatment satisfaction decreases 0.2 times (aOR=0.222; 95% CI=0.056-0.885; p=0.033) in subjects on combination therapy (insulin+OHA) and 0.5 times (aOR=0.505; 95% CI=0.326-0.782; p=0.002) in those treated with insulin as compared to subjects treated with OHA (reference). The association was significant across the treatment groups. Treatment satisfaction among illiterate subjects was 1.6 times lower (aOR=1.616; 95% CI=0.963-2.712; p=0.069) than literate (reference) subjects (Table 4). Mukherjee et al reported that literate subjects were having 0.8 times (OR 0.83: 95% CI: 0.46–0.95; p=0.039) better treatment compliance than illiterate subjects (reference) and hence better treatment satisfaction.[20] Treatment satisfaction was high among subjects >50 years of age. It decreases 0.7 times (aOR=0.793; 95% CI=0.538-1.169; p=0.241) in <35 years and 0.5 times (aOR=0.551; 95% CI=0.250-1.214; p=0.139) in 35-50 years as compared to >50 years (reference). Similar findings were observed in a study conducted by Redekop et al which revealed that treatment satisfaction was low among young subjects and subjects on insulin therapy than subjects in other treatment groups.[21]

On Pearson's correlation analysis, a positive correlation was observed among each subscale of treatment satisfaction with each other and the overall treatment satisfaction (Table 5). This relation was statistically significant p<0.01.

CONCLUSION

Diabetes is an over-whelming disease so a constant support and patient care is essential to improve lives of people living with diabetes which can be done through creation of self-help groups. Improving doctor patient relationship is the keystone for improvement in health care delivery to patients and also increases compliance among patients. There should be a multidisciplinary approach where doctors, nurses, dieticians and physiotherapists all collaborate in providing care for diabetic patients. Information on treatment satisfaction among diabetics is of prime importance to policy makers for identification and implementation of appropriate interventions required for achieving better disease management.

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