

Socio-Demographic Factors Responsible for Poor Management of Diabetes Mellitus

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Article Info

Received: June 16, 2017

Accepted: Sept 6, 2017

How to Cite this Manuscript

Maryam A, Khawaja W, Khawaja M. Socio-Demographic Factors Responsible for Poor Management of Diabetes Mellitus. *Ann. Pak. Inst. Med. Sci.* 2017; 13(2):254-257

Funding Source: Nil

Conflict of Interest: Nil

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ABSTRACT

Objective: To determine the socio-demographic factors, responsible for poor treatment of diabetes mellitus in patients with uncontrolled diabetes

Methodology: This cross-sectional study was conducted at BHU Inayat Pur, with six months duration from November 2016 to April 2017. All the patients with uncontrolled diabetes mellitus, poor treatment history either gender were included in the study. All the selected patients were interviewed in the OPD regarding socio-demographic characteristics. Patients were also interviewed regarding reasons of poor treatment. All the responsible socio-demographic factors were recorded in the proforma.

Results: Total 65 patients were selected and mean age of the patients was 47.34+6.11 years. Male were found in the majority 40(61.5%). Mostly patients 42(64.6%) were presented with poor socioeconomic condition. The poor socioeconomic status was the main responsible factor found in 17(26.2%) patient, followed by no available family physicians 03(04.6%), can't travel to health facilities 05(07.7%), no any care taker 03(04.6%), under Homeo treatment 06(09.2%), 06(09.2%) don't continue treatment due to ignorance and eat everything in sweet. 14(36.9%) cases said that they can't take drugs for long time, 07(10.7%) were not under proper treatment due to relative advises, while 04(06.1%) said doctor advised them insulin but they can't afford.

Conclusion: It is concluded that poor socio-economic status, drugs use for long time and ignorance are frequent responsible factors for poor treatment of diabetes mellitus.

Key words: socio-demographic factors, poor management, diabetes mellitus

Introduction

Diabetes Mellitus is very big health issue through the world with a cumulative incidence as a leading cause of the morbidity and mortality. Diabetes in 2010 was estimated to be 285 million, with prevalence of 6.4 %. By 2030, the estimated number will increase to 439 million with prevalence of 7.7 %.¹ Adult death frequency due to diabetes is round about 3.96 million per year and in all age groups is 6.8 % globally.² Its complications also main reason of morbidity and mortality in developing nations. Its successful treatment needs understand the beliefs, lifestyle modification, family and social communications of patients being treated.³ DM has various possible prolonged complications of

vascular system which may categorized as microvascular and macrovascular. Microvascular complications including diabetic retinopathy, neuropathy and nephropathy while macrovascular complications including CAD, atherosclerosis and CVD like stroke.⁴ Besides these complications, glaucoma and cataracts in eye, diabetic foot ulcer, UTI and female genital tract and erection events are also common in patients having diabetes.⁵ Death ratio is therefore greater in diabetes patients due to presence of these numerous complications.⁶

Previous studies stated that significant socio-economic gradients have been shown in incidence of several

cardiovascular disease risk factors, including diabetes. Diabetes may be up to two times more prevalent in low income populations compared to wealthy populations.^{7,8} In patients with diabetes, low income is associated with an increased rate of hospitalization for acute diabetes related complications.⁷ In spite of well-defined treatment for DM, in majority of the people, disease is poorly controlled. Hence controlling the disease is a major issue to prevent complications, increase the life expectancy and improve the quality of life.⁹ Hence it would be interesting to identify the factors associated with poor control of diabetes and there are number of studies which have attempted to address this question.⁹ Therefore this study has been conducted to evaluate responsible socio-demographic factors for poor treatment of diabetes mellitus in patients presented with uncontrolled diabetes.

Methodology

This cross-sectional study has been conducted at BHU innvayat Pur, with six months duration from November 2016 to April 2017. All the patients with uncontrolled diabetes mellitus, patients having poor treatment history either gender were included study. All the patients those were not agree to participate in the study, under proper treatment of diabetes were excluded. All the selected patients were underwent complete clinical examination and their glycemic status. All the selected patients were interviewed in the OPD regarding poor management of diabetes. Interview was taken simply regarding socio-demographic characteristics like socioeconomic status, occupational status, residential status, education level and knowledge regarding diabetes mellitus and its complications. Patients were also interviewed regarding reasons of poor treatment of diabetes. All the data regarding patient's age, gender and their socio-demographic characteristics was entered in the performa. All the data was analyzed by SPSS version 16.

Results

According to the results of this study health **RESULTS**

In this study total 65 patients were selected and their mean age was 47.34 ± 6.11 years. Male were found in the majority 40(61.5%) as compare to female 25(38.5%). Mostly patients 42(64.6%) were presented with poor socioeconomic status, middle class patients were 17(26.2%) and only 06(09.2%) patients were with upper socioeconomic class and mostly were landlord. 36(55.4%) were uneducated and 29(44.6%) were educated. According to the occupational status farmer, house wife and multiple

work performer were in majority as 14(36.9%), 17(26.2%) and 11(16.9%) respectively. **TABLE:1**

Characteristics	Frequency (%)
Age (mean+SD)	47.34±6.11 years
Gender	
Male	40(61.5%)
Female	25(38.5%)
Socio-economic status	
Poor	42(64.6%)
Middle	17(26.2%)
Upper	06(09.2%)
Educational status	
Educated	36(55.4%)
Uneducated	29(44.6%)
Occupational status	
Farmer	11(16.9%)
Driver	03(04.6%)
Teacher	05(07.7%)
House wife	17(26.2%)
Landlord	02(03.1%)
Shopkeeper	03(04.6%)
Multiple wok performer	14(36.9%)

On the interview regarding knowledge of diabetes and its complications, majority of cases 61.50% had partial knowledge, 26.20% cases were unknown, while only 12.30% patients had good knowledge regarding diabetes and its complications. **FIG:1**

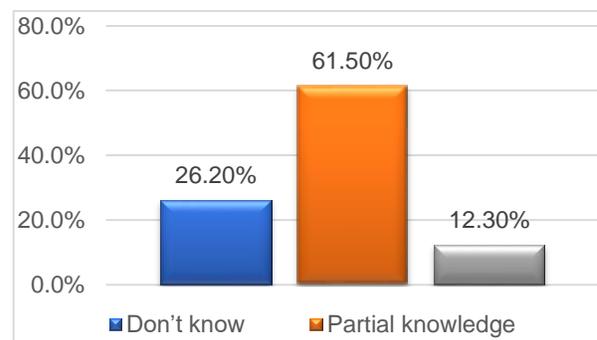


FIG:1. Patient' knowledge regarding diabetes and its complications (n=65)

When patients were interviewed about reasons of poor treatment, the poor socio economic status was the main responsible factor answered by 17(26.2%) patient, 03(04.6%) patients said there is no available family physicians, 05(07.7%) patients said they can't travel to health facilities, 03(04.6%) said they have no any care taker,

06(09.2%) were under Homeo treatment, 06(09.2%) patients had history of ignorance and eat everything in sweets. 14(36.9%) answered that they can't use drugs for long time, 07(10.7%) were not under proper treatment due to relative advises, while 04(06.1%) said doctor advised them insulin but they can't afford, because it is very costly. **TABLE:2**

Responsible factors	Frequency (%)
Why u don't take treatment properly?	
Poor socio-economic condition	17(26.2%)
No available family physicians	03(04.6%)
Cant travel to health facilities	05(07.7%)
No any care taker	03(04.6%)
Under Homeo treatment	06(09.2%)
Ignorance	06(09.2%)
Can't take drugs for long time	14(36.9%)
Due to relative advice (drug addiction)	07(10.7%)
Doctor advise insulin but can't afford	04(06.1%)

Discussion

Diabetes mellitus is the rapidly growing health issue which required very conscious efforts and action focused on the primary and secondary prevention.¹⁰ This study has been conducted to know the socio demographic responsible factors for poor treatment of diabetes. Many studies found in the literature regarding systemic responsible factors for diabetes as; obesity, family history, complications risk factors etc,¹¹⁻¹³ but non-proper treatment is also a big cause for uncontrolled diabetes which is responsible for developed complications by it. No adequate data is available regarding association of socio-demographic factors and uncontrolled glycemic status. In this study mean age of the patients was 47.34±6.11 years. On other hand in the study of Veghari G et al¹⁴ reported that mean of age was 39.2 years in patients with diabetes mellitus. Consistently Ahmad Z et al¹⁵ found mean age of DM cases was 51 years. Similarly, Iqbal T et al¹⁶ reported that age rang was 16-80 years, mean age was 54.50+10.89 years and mostly patients (64%) were found between age of 46-65 years. We found male in the majority 40(61.5%) as compare to female 25(38.5%). Inconsistently Ahmad Z et al¹⁵ reported that from 360 patients of diabetes mellitus 93 (25.83%) were male and 267 (74.17%) were females, this difference may because our sample size is small as compare to it.

In this series mostly, patients 42(64.6%) were presented with poor socioeconomic status, middle class patients were 17(26.2%) and only 06(09.2%) patients were noted with socio-economic status and those were mostly

landlord. In the comparison of our study Ahmad Z et al¹⁵ reported that poor patients were in high, middle and low-income group was 90 (15.52%), 234 (40.34%) and 256 (44.14%) respectively. Saleh F et al¹⁷ demonstrated that 36% patients were homemakers, and 30% were service holders, and further he reported that 49% belonged to lower-middle-income group, which can be compare with findings of our study.

In this study 36(55.4%) were educated and remaining 29(44.6%) were uneducated. Siddique MK, et al¹⁸ reported that 12% patients were illiterate. Saleh F et al¹⁷ showed comparable results as he reported that 45 had primary level education, and 33% completed graduation.

In present study majority of cases 61.50% had average knowledge regarding diabetes mellitus, 26.20% cases were completely unknown, while only 12.30% patients had good knowledge regarding it and its related complications. In the favor of our study Iqbal T et al¹⁶ reported that awareness regarding DM was inadequate in most of the cases and further he demonstrated that urban population has better understanding as compared to rural population. On other hand Siddique MK, et al¹⁸ also reported that patients of type 2 diabetes mellitus had average knowledge regarding diabetes which might affect the utilization of healthcare services for diabetes management.

In this study poor socio-economic status was the main responsible factor answered by 17(26.2%) patient. Similarly, in the study of Jotkowitz AB et al¹⁹ reported that patients having lower SES had raised prevalence of DM and had greater adherence to preventive healthcare measures, however, they were less successful in meeting target treatment goals. Also comparable findings were found in some other studies.^{20,21} It is also previously reported that diabetes patients having lower socio economic status received less preventive care as compare to higher socioeconomic groups.^{22,23} Various reasons for this discrepancy have been offered including patient factors, such as the financial means to follow provider recommendations, and lifestyle variations. Furthermore in our study 03(04.6%) patients said there is no available family physicians, 05(07.7%) patients said they can't travel to health facilities, 03(04.6%) said they have no any care taker, 06(09.2%) were under Homeo treatment, 06(09.2%) patients don't continue treatment due to ignorance and eat everything in sweet. 14(36.9%) answered as; they can't take drugs for long time, 07(10.7%) were not under proper treatment because relative advised then u will be addicted by

it, while 04(06.1%) said doctor advised them insulin but they can't afford, because it very costly. In the study of Kassahun CW et al²⁴ reported that the educational level, occupation status, and monthly income, exposure to diabetes health educations and knowledge showed significant association. Robbins et al²⁵ reported that lower income level, education, and occupation were positively associated with prevalence of diabetes.

Conclusion

we concluded that poor socio-economic condition, drugs use for long time and ignorance are frequent responsible factors of poor management of diabetes. Poor socioeconomic status is the big issue behind improper management of diabetes. Strategies should be developed for proper treatment in poor cases specially advised for insulin. Awareness program should be done to reduce the factor of ignorance. More big sample size studies are needed to assessed the more socio-demographic reasons.

References

- Shaw JE, Sucre RA, Zimmet PZ. Global estimates for the prevalence of diabetes for 2010 and 2030. *Diabetes Res Clin Pract* 2010; 87: 4-14.
- Roglic G, Unwin N. Mortality attributable to diabetes: Estimates for the year 2010. *Diabetes Res Clin Pract* 2010; 87 :15-19.
- Bradley C, Gamsu DS. For the Psychological Well-being Working Group of the WHO/IDF St Vincent Declaration Action Programme for Diabetes. Measures of psychological well-being and treatment satisfaction developed from the responses of people with tablet-treated diabetes. *Diabet Med* 1994;7:510-6.
- Zhaolan L, Chaowei F, Weibing W, Biao X. Prevalence of chronic complications of type 2 diabetes mellitus in outpatients- a correstional hospital based survey in urban China. *HQLO* 2010; 8: 62-71.
- Joshi SR, Das AK, Vijay VJ, Mohan V. Challenges in diabetes care in India: sheer numbers, lack of awareness and inadequate control. *JAPI* 2008; 56: 443-450.
- Ramachandran A. Socio economic burden of diabetes in India. *JAPI* 2007; 55: 9-12.
- Rabi DM, Edwards AL, Southern DA, Svenson LW, Sargious PM, Norton P, Larsen ET, Ghali WA. Association of socio-economic status with diabetes prevalence and utilization of diabetes care services. *BMC Health Services Research*. 2006 Oct 3;6(1):124.
- Stelmach W, Kaczmarczyk-Chalas K, Bielecki W, Drygas W: How education, income, control over life and lifestyle contribute to cardiovascular risk factors in adults in a post-communist country. *Public Health*. 2005;119: 498-508.
- Sanal TS, Nair NS, Adhikari P. Factors associated with poor control of type 2 diabetes mellitus: a systematic review and meta-analysis. *Journal of diabetology*. 2011;3(1):1-10.
- Hussain A, Ali I. Diabetes mellitus in Pakistan: A major public health concern. *Archives of Pharmacy Practice*. 2016 Jan 1;7(1):30.
- Lima AC, Araújo MF, Freitas RW, Zanetti ML, Almeida PC, Damasceno MM. Risk factors for Type 2 Diabetes Mellitus in college students: association with sociodemographic variables. *Revista latino-americana de enfermagem*. 2014 Jun;22(3):484-90.
- Sociedade Brasileira de Diabetes. Cuidados de Enfermagem em Diabetes Mellitus. Manual de Enfermagem. São Paulo: Departamento de Enfermagem da Sociedade Brasileira de Diabetes; 2009. 171 p
- Wu Y, Ding Y, Tanaka Y, Zhang W. Risk factors contributing to type 2 diabetes and recent advances in the treatment and prevention. *International journal of medical sciences*. 2014;11(11):1185.
- Veghari G, Sedaghat M, Joshaghani H, Hoseini SA, Niknezad F, Angizeh A, Tazik E, Moharloei P. Association between socio-demographic factors and diabetes mellitus in the north of Iran: A population-based study. *International Journal of Diabetes Mellitus*. 2010 Dec 31;2(3):154-7.
- Ahmad Z, Pervaiz MK. Risk factors and diabetes mellitus (statistical study of adults in Lahore, Pakistan). *Journal of Statistics*. 2006;13(1):46-66.
- Iqbal T, Rashid F, Saleem SA, Shah SA, Khalid GH, Ishtiaq O. Awareness about diabetes mellitus amongst diabetics. *J Rawalpindi Med Coll*. 2013;17:294-6.
- Saleh F, Ara F, Afnan F. Assessment of Gap between Knowledge and Practices among Type 2 Diabetes Mellitus Patients at a Tertiary-Care Hospital in Bangladesh. *Advances in Public Health*. 2016 Mar 3;2016.
- Siddique MK, Islam SM, Banik PC, Rawal LB. Diabetes knowledge and utilization of healthcare services among patients with type 2 diabetes mellitus in Dhaka, Bangladesh. *BMC Health Services Research*. 2017 Aug 22;17(1):586.
- Jotkowitz AB, Rabinowitz G, Segal AR, Weitzman R, Epstein L, Porath A. Do patients with diabetes and low socioeconomic status receive less care and have worse outcomes? A national study. *The American journal of medicine*. 2006 Aug 31;119(8):665-9.
- Dalstra JA, Kunst AE, Borrell C, et al. Socioeconomic differences in the prevalence of common chronic diseases: an overview of eight European countries. *Int J Epidemiol*. 2005;34:316-326.
- Glover JD, Hetzel DM, Tennant SK. The socioeconomic gradient and chronic illness and associated factors in Australia. *Aust New Zealand Health Policy*. 2004;1:8.
- McCall DT, Sauaia A, Hamman R, Reusch JE, Barton P. Are lowincome elderly patients at risk for poor diabetes care? *Diabetes Care*. 2004;27:1060-5.
- Hippisley-Cox J, O'Hanlon S, Coupland C. Association of deprivation, ethnicity, and sex with quality indicators for diabetes: population based survey of 53,000 patients in primary care. *BMJ* 2004;329: 1267-9.
- Kassahun CW, Mekonen AG. Knowledge, attitude, practices and their associated factors towards diabetes mellitus among non-diabetes community members of Bale Zone administrative towns, South East Ethiopia. A cross-sectional study. *PloS one*. 2017 Feb 2;12(2):e0170040.
- Robbins JM, Vaccarino V, Zhang H, et al. Socioeconomic status and type 2 diabetes in African American and non-Hispanic white women and men: evidence from the Third National Health and Nutrition Examination Survey. *Am J Public Health*. 2001;91(1):76-83.