Multi-Disciplinary Publishing Institute Pakistan **Vol.** 02, **N0.** 02

Submitted: 05 JUL 2023 Accepted: 23 MAY 2024 Published: 05 JUN 2024

Original Article

Exploring the factors Affecting the Compliance of Treatment among the Diabetic Patients

Dr. Qamar Afaq Qureshi
Assistant Professor
Department of Public Administration
Gomal University, Dera
Ismail Khan, Pakistan
Email: qamarafaq@gu.edu.pk

Dr. Niaz Ahmad Wassan
MPH Program
Department of Public Administration
Gomal University, Dera Ismail Khan, Pakistan

Citation

Qureshi, Q.A., & Wassan, N.A. (2024). Exploring the factors Affecting the compliance of treatment among the diabetic patients. *Open Access Public Health and Health Administration Review*, 2(2): 39-44.

WEBSITE: www.mdpip.com
PUBLISHER: MDPIP

ISSN: Print: 2959-619X
ISSN: Online: 2959-6203

ABSTRACT:

Diabetes Mellitus in a heterogeneous group of diseases characterized by state of chronic hyperglycemia resulting from diversity of etiologies environmental and. Above 10% of people with diabetes have type-1 while 90% have type-II. Compliance in medicine is the patient adherence to the course of treatment recommended by physicians. Patient's compliance depends upon various factors like socio-economics education and behavior of the main considerations. The aim of this study was to explore the factors affecting the compliance of treatment among the diabetic patients; and how to overcome those factors. The objectives of the study were to look into the demographic characteristics of study population; the role of socio-economic condition on compliance in diabetics; the role of false believes on compliance in diabetics; the role of drugs availability on compliance in diabetics, and the role of psychological factors on compliance in diabetics. This study finds that it has been found that monthly income, hypoglycemic attack, attitude, gender effect the compliance of the patient. Education has no effect on compliance. False beliefs and lack of education about disease negatively affect compliance.

Keywords: Diabetes, Patients, Treatment Compliance, Factors Affecting Treatment Compliance.

Introduction

Diabetes Mellitus in a heterogeneous group of diseases characterized by state of chronic hyperglycemia resulting from diversity of etiologies environmental and genetic (Atinga, Yarney, & Minta, 2018). Above 10% of people with diabetes have type-1 (insulin dependent diabetes) while 90% have type-II (non- insulin dependent diabetes). Oral and injectable both medicine have important role in control of diabetes mellitus. Compliance in medicine is the patient adherence to the course of treatment recommended by physicians (Badawy, Shah, Be, & Heneghan, 2020). Patient's compliance depends upon various factors around them. Socio-economics education and behavior of the main considerations. In diabetics, compliance is the most important component of the management and control of hyperglycemia (Caraceni, Fainsinger, and Foley, 2009). Diabetes mellitus is a worldw ide public health problem. It is an "iceberg" disease. Prevalence is 4% worldw ide and is on rise; more than 150 million people worldw ide have diabetes.

By the year 2025 WHO projects more than 300 million cases worldwide with prevalence 5.4%. 77% of global burden of diabetes mellitus is share by developing countries. Pakistan is on top in Eastern Mediterranean and Middle East region with 8.8 million people and 12% of population having diabetes mellitus. Pakistan ranked 8111 among countries with the highest number of diabetics in 1995 by 2025. Pakistan will have 15 million diabetic people and 4ffi rank in world, it. Any serious intervention is not undertaken. Rising burden in Pakistan is attributed to industrialization, socio- economic condition, population growth, growing prevalence of obesity, non-compliance of treatment, lack of education, eating habits. Compliance is a neglected part of research in diabetes mellitus.

Research in this field will help the public health personnel and policy makers to remove the factor leading to poor compliance. Poor compliance leads to uncontrolled DM and development of the complication like neuropathy, nephropathy, retinopathy, and cardiac effects, all of which results in prolong medical care, loss of income due to disability, loss family bread winner and increase death due to DM. compliance is a factor of DM which can improve with health education and economic support to the people. In our region, analysis of the factors leading to poor compliance must be rooted out, so that measures should be taken to improve the compliance among diabetic patients.

The aim of this study was to explore the factors affecting the compliance of treatment among the diabetic patients; and how to overcome those factors. The objectives of the study were to look into the demographic characteristics of study population; the role of socio-economic condition on compliance in diabetics; the role of false believes on compliance in diabetics; the role of drugs availability on compliance in diabetics, and the role of psychological factors on compliance in diabetics.

Further, study was intended to study the role e of expenses blood testing on compliance in diabetics; the role of multiple drugs dosages on compliance in diabetics, the role of fear of hypoglycemia on compliance in diabetics, and then to draw recommendation in the light of present study results. This study will help the concerned public health policy makers, service providers and patients to understand the factors in II influencing the compliance in DM, controlling, and eliminating the factors.

Hypothesis

Patients with diabetes has low compliance because of lack of education low income, fear of hypoglycemia and multiple drug prescriptions by physicians.

Literature Review

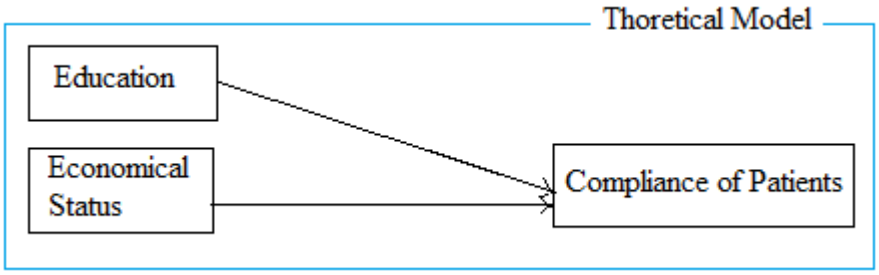
Literature review undertaking provided for foundation for developing theoretical framework of the problem in a study about compliance in diabetic patients (Jiang, Liu, Li, Xie, & Jiang, 2021). In USA 25 thousands people with treatable ailment died each ye4 due to non- taking of prescribed medicines. 14 to 21% of patients never follow the prescription, while 60% do not identify their own medicines.

There are many studies on compliance in diabetic patients as given (Kardas, 2005). Reference and quoted from the study which is held in College of Medical Sciences King Khalid University Abha, Saudi Arabia, the factor which are affecting the compliance are education, gender, culture, finance. (Economic) (Moore, Hall, Harper, & Lynch, 2010). The effect of oral hypoglycemic dose frequency on compliance, are taken from the study of DIACOM which is resulted that one daily dose improves compliance (Kendall, Amineh, Lisa, 2024). There was no relationship between knowledge about diabetes and compliance established as a result of study in Hong Kong, in this study knowledge to action gape is noted (Azharuddin, Adil, Sharma, & Gyawali, 2021).

Another study conducted in rural health center Chenia South India, that non-compliance seen in 57% of patients because of lack of education. Relation between patient and health care system also discussed in this study and emerge as a key factor in noncompliance (Pati, Pati, van den Akker, Schellevis, Sahoo, & Burgers, 2021). Comparison between white and African of compliance to prescription of diabetes results in 12r% less compliance in blacks from whites due to lower socio-economic condition and lower level of education (Piragine, Petri, Martelli, Calderone, & Lucenteforte, 2023). Inverse relationship between increasing compliance and medical care cast was observed in Retrospective Cohort study at Blue Cross, Michigan City (Rashidi, Kaistha, Whitehead, & Robinson, 2020). A study in Sainte Tomas Hospital Espana, Manilla Philippine result in the patient experienced fewer episodes of hypoglycemic attacks lead to better-drug compliance (Rashidi, Whitehead, & Kaistha, 2021). Brief article science general January 20, 2001 poor communication with physicians' leads to non-compliance of patient (Stack, Elliott, Noyce, & Bundy, 2008). In another study in Lahore General Hospital cost of disease, carelessness and lack of education are the factors effecting compliance (Sweileh, Aker, & Hamooz, 2005). In Saudi Arabia, a study of compliance it was noted that duration of the disease and degree of care were the most common variable found to predict compliance. (Wild, Roglic, & Green, 2004).

Figure 1

Theoretical Framework



Method

Research methodology refers to the various sequential steps adopted by a researcher in studying problems. (Kothari, 2004) Research Methodology describes what we are going to do in technical terms. This section should include as many subsections as needed to show the phases of the research work. It provides information on our proposed design for such tasks as defining target population, sample and size, data collection methods, instrumentation, procedures, and ethical requirements. The group of objects (persons, places, things, or events) in which a researcher is interested is called population. In words of Sekaran (2003), "The aggregate of all the cases that confirm to some designated set of specification". The population of research includes all people/patients

of DIKhan. The essence of sampling is the selection of a part (sample) 11.0111 the whole (population) in order to make inferences about the whole. A sample, as the name implies, is a smaller representation of a larger whole. The process by which samples or samples the drawn from a population is called sampling. The main purpose of sampling is to reduce the time and money that would be spent if the total population were studied and yet still realize data that are accurate representations of the population (Goode & Hatt, 1952). Sample is that portion of population, which is chosen systematically with the objective that it represents all the characteristics of the population. It means that every element of the population has or has not the opportunity to he selected in the sample. Therefore, the researcher selected a sample or 100 respondents through convenience sampling technique. A further 80 questionnaires were returned back, thus analysis was done for 80 questionnaires. The data was obtained from both sources primary as well as secondary data.

Results

Methodology is a series of steps and procedures to conduct research. A sample is representative of population that contains all the characteristics of total population. 48 questionnaires were distributed randomly through a simple random method. 48 questionnaires were returned after completion.

Table 1

Data is analyzed on Basis of Statistical Software (SPSS-13.0) Demographic Variables

Variable	Frequency
Age	20-30+7, 30-40=10, 40-50=20, 50-60=6, 60-70=5, above 70=0
Sex	Male=27, Female=21
Residential Status	Rural=0 Urban=48
Ethnicity	Pathan =0, Local=48, Migrate=0
Marital Status	Married=42, Un Married=6
Occupation Status	Employed=25, Unemployed=23
Education	Illiterate=8, Primary=7,Matric=16, Graduate=14, Postgraduate=3
Monthly Income	Less than 10000=32, 10000-25000=16

Table 2

Research Variables

Variable	Variable Compared	Chi Square	P- Value	Statistical Significance
Monthly Income	Afford Drugs	13.71	0.00	Significance
Monthly Income	Afford Doctor Fees	17.14	0.000	Significant
Monthly Income	Afford Lab Expenses	20.31	0.00	Significant
Education	Medicine Taking Attitude	9.34	0.053	Not Significant
Education	Regular Taking Anti Diabetic	11.31	0.023	Significant
Education	Diabetes is Curable	4.38	0.356	Not Significant
Medicine Taking Attitude	Hypoglycemic Attack	10.45	0.001	Significant
Sex	Diabetes is Curable	2.89	0.089	Not Significant
Sex	Consult Spiritual Healer	2.72	0.099	Not Significant
Monthly Income	Medicine Taking Attitude	2.68	0.101	Not Significant
Monthly Income	Regular Taking Anti Diabetic	1.60	0.206	Not Significant

Discussion and Conclusion

In research for nonc ompliance in Diabetic patient results are as follows: Monthly income of 67(70 patients is less of them IMMO rupees WRI it hits significant effect on visit to Doctor, Lab test and buying medicine and but no effect on compliance. It is because of cheap anti diabetic medicine and free drug. Availability in some institutions. Education has no significant role in compliance in diabetics. 83% of patients are educated while their compliance is low. This shows that education does not affect the adherence to prescription. Compliance is independent of the education level of the patient. The hypoglycemic effect on the diabetic patient directly affects the compliance. 75% of patients answered that they missed the tablet because of fear of hypoglycemic symptoms. Dizziness and cold sweat are fearful symptoms. Patients quits drugs due to these fatal problems. Female patients are very irregular in taking drugs according to prescription. 68% of diabetic female patient replied that their not regularly taking drugs. Low compliance in female in mostly due to our cultural setup. Ours is man dominant society and female are not properly treated they cannot medicine thems elves and dependent on males to purchase drugs for that. Compliance to drugs in diabetic patient is a serious problem in our society. Complication due to poor diabetic control leads to disability, morbidity, and mortality. After analyzing the data, it has been found that monthly income, hypoglycemic attack, attitude, gender effect the compliance of the patient. Education has no effect on compliance. False beliefs and lack of education about disease negatively affect compliance.

Recommendations

Increase literacy rate among population. Health education and health promotion for diabetic patients. Provision of free diabetic clinics in the community. Diabetic clinic in district headquarter hospital. Provision of free services including laboratory and drugs to poor diabetic patients. Doorstep health education and service to female diabetics in community. Control and counter action on advertisement of quacks and ineffective medicines. Proper advertisement adds awareness on media about the disease and compliance. Sympathetic and friendly relationship between GPs and patients to improve compliance. Programs like '1'13 DOT should he started about diabetics. Training of GPs and other health care providers about the care of diabetic patients. Single drug therapy (combined piles) should be encouraged. Availability of anti-diabetic drugs improved. Religious and political leaders should be involved to improve the compliance of diabetic patients.

Deceleration of Interest

The author declares that there was no clash of interest.

References

Atinga, R., Yarney, L., & Minta, G.N. (2018). Factors influencing long-term medication non-adherence among diabetes and hypertensive patients in Ghana: a qualitative investigation. *PLoS ONE*, 13(3), 1-17.

Azharuddin, M., Adil, M., Sharma, M., & Gyawali, B. A. (2021). Systematic review and meta-analysis of non-adherence to anti-diabetic medication: evidence from low- and middle-income countries. *International Journal of Clinical Practice*, 75(11), e14717.

Badawy, S.M., Shah, R., Be, U., & Heneghan, M.B. (2020). Habit strength, medication adherence, and habit-based mobile health interventions across chronic medical conditions: systematic review. *J Med Internet Res.* 22(4), e17883.

Caraceni, Fainsinger, and Foley (2009). *Palliative Nurs-ing*, 1st ed., Saunders Elsevier Co., pp. 1083-106.

Jiang, L., Liu, S., Li, H., Xie, L., & Jiang, Y. (2021). The role of health beliefs in affecting patients' chronic diabetic complication screening: a path analysis based on the health belief model. *J. Clin Nurs*. 30(19-20), 2948-59.

Kardas, P. (2005). Effect of dosing frequency of oral antidiabetic agents on the compliance and biochemical control of type 2 diabetes. *Diabetes Obes. Metab*, (7), 722-8.

Kendall, G., Amineh, R., Lisa, W. (2024). Factors influencing medication adherence among adults living with diabetes and comorbidities: A qualitative systematic review. *Current Diabetes Reports*, 24, 19-25.

Kothari, C.R. (2004). *Research Methodology. Method and Techniques*. 2nd Revised Edition, New Age International, New Delhi.

Moore, S., Hall, J.N., Harper, S., & Lynch J.W. (2010). Global and national socioeconomic disparities in obesity, overweight, and underweight status. *J. Obes.*, (pii), 514-674.

Pati, S., Pati, S., van den Akker, M., Schellevis, F.G., Sahoo, K.C., & Burgers, J.S. (2021). Managing diabetes mellitus with comorbidities in primary healthcare facilities in urban settings: a qualitative study among physicians in Odisha India. *BMC Family Practice*, 22(1), 1-9.

Piragine, E., Petri, D., Martelli, A., Calderone, V., & Lucenteforte, E. (2023). Adherence to oral antidiabetic drugs in patients with type 2 diabetes: systematic review and meta-analysis. *Journal of Clinical Medicine*, 12(5).

Rashidi, A., Kaistha, P., Whitehead, L., & Robinson, S. (2020). Factors that influence adherence to treatment plans amongst people living with cardiovascular disease: a review of published qualitative research studies. *Int J Nurs Stud*. 110, 103727.

Rashidi, A., Whitehead, L., & Kaistha, P. (2021). Nurses' perceptions of factors influencing treatment engagement among patients with cardiovascular diseases: a systematic review. *BMC Nurs*. 20(1), 251.

Sekaran, U. (2003). *Research Methods for Business: A Skill-Building Approach*. 4th Edition, John Wiley & Sons, New York.

Stack, R.J., Elliott, R.A., Noyce, P.R., & Bundy, C. A. (2008). Qualitative exploration of multiple medicines beliefs in co-morbid diabetes and cardiovascular disease. *Diabet Med*. 25(10), 1204-10.

Sweileh, W.M., Aker, O., & Hamooz S. (2005). Rate of compliance among patients with diabetes mellitus and hypertension. College of Pharmacy. Ministry of Health. Nablus Palestine. *An-Najah Univ. J. Res. (N.Sc.)*, 19: 1-12.

Wild, S., Roglic, G., & Green, A. (2004). Global prevalence of diabetes, estimates for the year and projections for2030. *Diabetes Care*, 27, 1047-53.

William, J. Goode and Paul, K. Hatt. (1952). *Methods in social research*. McGraw-Hill Book Co., By New York, Pp, 386.