



ORIGINAL ARTICLE

Factors influencing readiness of patients for the use of exogenous insulin for the management of type 2 diabetes mellitus.

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ABSTRACT... Objective: This study aimed to explore the T2DM patients' reasons for refusing insulin therapy and their initial barriers to use insulin. **Study Design:** Cross-sectional Observational study. **Setting:** Primary Outpatient Health Care Center Karachi. **Period:** 15th October 2022 to 15th January 2023. **Material & Methods:** Total 800 diagnosed patients of type-II diabetes mellitus having HbA1c level about 7.0% were included in study, participants were interviewed and necessary data and their response against insulin was recorded on designed questionnaire. **Results:** Total 800 number of patients were enrolled in study, 434 were female (54.25%) while 366 were male (45.75%) participants. The average age of total patients was 45.6±10.5. Study reported that 28.5% patients mentioned that its painful procedure. 25% patients were unaware about insulin, 15% mentioned that it is difficult to self-inject, 10.5% lack of technical person or medical staff that can inject over there, 7.5% patients believe that insulin is last resort of treatment, 5% needle phobia, 4.5% reluctant due to unaffordability of insulin, 3% insulin would be addictive, and 1% patients with religious restriction was reported. **Conclusion:** Study explore many reason that are mainly influencing use of exogenous insulin for the treatment of diabetes mellitus. Insulin therapy is painful procedure consideration have been recorded more common while other factors unawareness about insulin, needle phobia, lack of technical people in home specially in backward areas and insulin is last resort of treatment beliefs are also major important factors reported during study.

Key words: Diabetes Mellitus, HbA1c, Hyperglycemia, Insulin, Management.

INTRODUCTION

Diabetes mellitus is a growing threat to global health, with complications, mortality, and social costs increasing rapidly. To combat this issue, early diagnosis and proper treatment are essential.² T2DM, belonging to group of non-communicable diseases (NCDs), tends to have a heavy impact on quality of life of patients having the disease and patients facing many other complications including obesity, cardiovascular diseases etc.³ A commonly prescribed treatment for type-II diabetes mellitus is insulin therapy, which helps to reduce the amount of glucose in the blood and may help to prevent serious consequences associated with diabetes.⁴ Insulin must be managed carefully and regularly to ensure optimal effects; thus, it is important for individuals with diabetes mellitus to adhere to their treatment

plan as outlined by their healthcare provider.⁵ Diabetes mellitus is a major health concern, with an exponential increase in diagnosed cases world-wide⁶, this increase can be attributed to multiple risk factors, such as prolonged pre-symptomatic stages and lack of adequate insulin treatment.⁷ In many cases, patients present to the physician with irreversible damage from complications due to the diabetes.⁸ It is essential that proper insulin treatment is prescribed promptly to mitigate its effects and prevent further damage.⁹

The increased global prevalence of diabetes mellitus has been reported in many studies and increasing prevalence day by day alarming increase risks and health complication. According to a study of 2015, >415 million adults have diabetes mellitus, and this number is estimated

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to increase to 642 million by 2040.¹⁰

The increase in DM can be attributed to multiple risk factors, such as prolonged pre-symptomatic stages and lack of adequate knowledge about insulin or unawareness about insulin in population, therefore, there is need of such social programs for the awareness of such disease and treatment procedures in population¹¹, As a matter of fact, the study may helpful to many expert clinicians about improvement in T2DM outcomes of patients, while everything with how health care providers tend to effectively lead the implementation of current knowledge for providing the accurate management options for patients.

MATERIAL & METHODS

This cross-sectional observational study was conducted at Primary outpatient department of family medicine, health care center Karachi after IRB approval from college of family medicine Pakistan. Total 800 diabetes mellitus diagnosed patients were enrolled in study by following inclusion criteria, 18-65 years age of patients, patients those were taking anti diabetic drugs since one year were included in study. Patients of systematic diseases or with other abnormalities were excluded from study.

Initially a written consent was filled by all participants, patient's medical history, BMI, level of HbA1c and demography including name, age, gender, educational and socio economics status was recorded. Each participant was interviewed about half an hours and a written questionnaire was filled from participants, questionnaire was based on detail questions regarding insulin and reasons behind refusing of insulin and their prospective about insulin. To ensure the quality of the information gathered from the patients, interview was conducted face-to-face. Questionnaire was also translated in Urdu language for those participants who were unable to understand English language, and those patients who were unable to read questionnaire, then patients were interviewed and questionnaire was filled by research expert and other professional experts for achieving maximum authenticity. During interview patients were allowed to express their thoughts

and views regarding insulin. All the collected data was analyzed by SPSS 2.0.

RESULTS

Total 800 patients were included in study by following inclusion criteria, 434 were female (54.25%) while 366 were male (45.75%) participants. The average age of total patients was 45.6 ± 10.5 . 35% literacy ratio was recorded while (65%) were found illiterate in study. Married 78.75%, unmarried 17.5%, while divorced 3.75% recorded during study.

	N (%)
Gender	
Male	366 (65%)
Female	434 (35%)
Educational status	
Illiterate	350 (43.75%)
Primary school	150 (18.75%)
Secondary school	85 (10.625%)
High school	104 (13%)
University	113 (14.125%)
Marital status	
Married	630 (78.75%)
Unmarried	140 (17.5%)
Divorced	30 (3.75%)
History of hospitalization	
Yes	313 (39.125%)
No	487 (60.875%)
Total	800 (100%)

Table-I. Demographical characterization of patients

We found that almost patients were unaware about insulin and belongs to villages and having less educational status, 28.5% patients mention that its painful procedure. Study also found that 25% patients were unaware about insulin, 15% mentioned that it is difficult to self-inject, 10.5% lack of technical person or medical staff that can inject over there, 7.5% patients believe that insulin is last resort of treatment, 5% needle phobia, 4.5% reluctant due to unaffordability of insulin, 3% insulin would be addictive, and 1% patients with religious restriction was reported.

Questions	No. of Patients Agreed (%)	p	r
Insulin injection is painful	228 (28.5%)	<.001	0.82
Unaware from insulin	200 (25%)	.008	0.72
Difficult to self-inject	120 (15%)	.58	0.67
Lack of technical person	84 (10.5%)	.14	0.68
Insulin is last resort of treatment	60 (7.5%)	.90	0.65
Needle phobia	40 (5%)	.014	0.69
Unaffordable cost of insulin	36 (4.5%)	.063	0.73
Insulin can be addictive	24 (3%)	.51	0.62
Religion restrictions	8 (1%)	<.001	0.80
Total	800 (100%)		

Table-II. Patients' response regarding exogenous insulin therapy

DISCUSSION

As world moving towards development, more diseases are also becoming prevalent in the world. Diabetes like other fatal diseases are reported frequently due to complications and prevalence.¹² Diabetes mellitus is a chronic, non-communicable diseases with high prevalence and occupying impact on quality of life of patients.¹³ After patients with diagnosed diabetes mellitus, treatment is considering against choice of patients. This study has reported such barriers for reluctant of insulin therapy.

The study explore reasons behind refusing insulin for treatment of diabetes mellitus, research mainly found that insulin therapy is painful procedure and were unaware about the insulin and its importance for the treatment of DM, thus there is need of awareness about insulin therapy by different educational seminar and medical professionals should explain clearly benefits and role of insulin for maintaining quality of life. However (Ahmet Yilmaz at al 2016) found more ratio of patient that don't know about insulin.¹⁴

In addition study reported many patients also mention that insulin administration is painful procedure and patients reported it as painful procedure, needle phobia, unaffordable cost of drug, and few mentioned insulin is last resort of treatment while very few mention that religion restrictions are main reasons to refuse

insulin.

Another study (Abu Hassan at al 2013) also reported similar factor that influencing readiness of patient for exogenous insulin.¹⁵ In this study researcher mention that there was high percentage of patients those were considered painful procedure to insulin administration.

LIMITATIONS

The study was conducted in only limited area of Karachi, it should be included ruler areas to know about problems they are facing

CONCLUSION

Study explore many reason that are mainly influencing use of exogenous insulin for the treatment of diabetes mellitus. Lack of awareness in patients regarding insulin have been recorded more common while other factors painful procedure, needle phobia, lack of technical people in home specially in backward areas and insulin is last resort of treatment beliefs are also major important factors reported during study. However there is need of awareness regarding treatment of diabetes and health management should conduct seminar that would be helpful for the patients.




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AUTHORSHIP AND CONTRIBUTION DECLARATION

No.	Author(s) Full Name	Contribution to the paper	Author(s) Signature
1	M. Yaseen Usman	Study design, Patient selection, Data collection, Experimental work.	
2	Aroosa Jahan Altaf	Study design, questionnaire design, Literature search.	
3	Jawed Habib	Data analysis, Suggestions, data interpretation.	
4	Muhammad Imran	Review, Prooreading and results.	