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Research Article

**THE FEATURES OF FREQUENT EMERGENCY
DEPARTMENT USERS AMONG TYPE 2 DIABETES
MELLITUS**¹Dr. Ghumza Farooq, ²Dr Ayesha Nisar, ³Dr Syed Muhammad Haider Ali¹Mayo Hospital Lahore, ²Jinnah Hospital Lahore, ³Lahore General Hospital**Article Received:** October 2020**Accepted:** November 2020**Published:** December 2020**Abstract:**

Aim: Continuous crisis division (ED) guests are therapeutically defenseless people. We distinguished the qualities of "continuous ED clients" among Pakistani patients with type 2 diabetes mellitus.

Methods: We used the Health Insurance Review and Assessment Administration's national patient sample, which is a widely delegated test. Patients (n = 108,417) with type 2 diabetes mellitus as an essential or ancillary test at one of their visits were included. They were divided into three groups, as indicated by the number of emergency department visits: continuous (≥ 4 visits), intermittent (< 5 visits) and non-emergency department visits. Our current research was conducted at Sir Ganga Ram Hospital, Lahore from June 2019 to May 2020. The qualities of the patients who recognized the continuous clients in the different gatherings were sought.

Results: Frequent emergency department clients were predominantly male ($P < 0.002$), with a longer duration of treatment ($P < 0.002$), more successive co-morbidities (ongoing cardiovascular and renal disease); furthermore, the essential determination is made by a medical procedure ($P = 0.0029$). They had higher mortality ($P = 0.0086$), longer hospitalization ($P < 0.002$), higher expenses per visit ($P < 0.002$) and, in addition, clinical insurance required more regularly ($P < 0.002$). These patients were treated more regularly with sulfonylureas, insulin, meglitinide and alpha-glucosidase inhibitors ($P < 0.06$).

Conclusion: The current discoveries propose that continuous clients of the ED with type 2 diabetes mellitus have genuine medical issue, a poor financial circumstance and tend to take a few drugs (sulfonylurea, and so forth), which regularly are related with hypoglycemia. Consideration should be given to treatment, and to patients with renal and cardiovascular illnesses to diminish the reliance of these patients on the ED.

Keywords: Frequent Emergency Department Users, Pakistan, Diabetes Dm.

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INTRODUCTION:

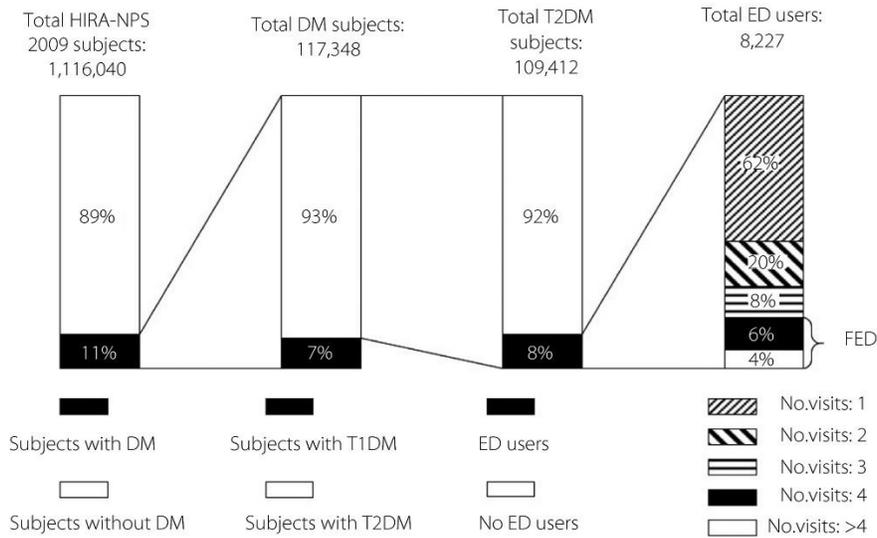
Type 2 diabetes mellitus is a growing problem worldwide. In 2011, 369 million people had diabetes mellitus. Whiting et al. [2] and the International Diabetes Federation estimated that 556 million people could have diabetes mellitus by 2030, and the number of people influenced by type 2 diabetes mellitus could increase to 439 million [1]. However, this expansion would depend on the geographic area, as the onset of type 2 diabetes mellitus is influenced by ecological and lifestyle risk factors [2]. Chan et al. proposed that type 2 diabetes mellitus develops primarily in non-industrial nations, for example in Asia, as opposed to developed nations. Type 2 diabetes mellitus is associated with some difficulties if it is not adequately controlled, which may eventually lead to other actual infections [3]. In addition, a study by the American Association has shown that difficulties due to type 2 diabetes mellitus raise the costs of medical services. Vojta et al. have detailed that the average annual complete expenditure for diabetes complexities is approximately \$22,800 per patient, which is almost three times the average cost for patients without diabetes mellitus complexities (e.g., \$8,900) [4]. However, no examination of the Pakistani population has been able to explain the key points of patients with type 2 diabetes mellitus who regularly visit emergency departments. In the current review, we studied ongoing emergency department (ED) clients among patients with type 2 diabetes mellitus in the Pakistani medical services. We distinguished the relevant qualities of client management in the Pakistani medical services by contrasting the strengths of these patients with the qualities of intermittent ED (OED) and non-OED (no ED) clients among patients with type 2 diabetes using a widely delegated data set [5].

METHODOLOGY:

Public health insurance first became aware of South Pakistan in 1979, and has provided clinical protection to all Pakistanis since its introduction. It is a compulsory medical coverage program that covers more than 96% of the Pakistani population. The Health Insurance Review and Assessment Authority (HIRA) is an administrative association that reviews claims for

reimbursement of national medical coverage. Our current research was conducted at Sir Ganga Ram Hospital, Lahore from June 2019 to May 2020. The HIRA's database contains the claims of an average of 48 million patients each year, representing 92% of the Pakistani population. Given the huge number of cases, HIRA has created examples of public patients to streamline openness to information, which are separated using a defined random testing technique. The information is coordinated in five sets, including socio-demographic information, indicative data, representations of ambulatory patients, information on the administrations of given medical care and data on medical care providers. The information for this review is based on claims extracted from January 1, 2009 to December 31, 2009. Data on patients with type 2 diabetes mellitus in 2009 were obtained using the HIRA information base, such as socio-economic data (gender and age), mortality, clinical costs, care data (long recovery and treatment periods), and diseases seen during visits. We conducted a cross-sectional review survey using claims information for correlations between FED and WD clients and between care and non-WD clients. We assessed the accompanying patient components using the HIRA information base: age, gender, co-morbidities, death, activity for essential infection, use of different practices, length of treatment, length of hospitalization, welfare costs, welfare costs, clinical insurance, and normal medications taken (sulfonylurea, metformin, insulin, dipeptidyl peptidase-4 inhibitors, meglitinide, thiazolidinedione [TZD], and α -glucosidase inhibitors [AGI]). Co-morbidities were characterized by optional analytical codes. In the event that patients did not have an optional code at all visits, it was assumed that they did not have co-morbidities. For example, a patient was considered to be comorbid if, at a visit in 2009, he or she reported having another infection unique to the state of well-being that prompted the visit. Essential Illness Medical Procedure was designated for patients who underwent a medical procedure after, at least, one of their visits. A person who has not undergone a medical procedure after all of their visits is considered to have had no essential illness activity.

Figure 1:



RESULTS:

The total number of patients in the public HIRA tests was 1,116,040, of which 11% had diabetes mellitus ($n = 118,349$). Patients with type 2 diabetes mellitus (code: E11.X, E12.X, E13.X, E14.X) accounted for 94% ($n = 108,413$) of all people with diabetes mellitus. Of all patients with type 2 diabetes mellitus, 93% were "not emergency room clients" ($n = 101,185$) and 8% were emergency room clients ($n = 9,229$; Figure 1). These 9,228 ED clients made 12,864 ED visits reporting type 2 diabetes in 2009. Clients managed represented 12% ($n = 848$ patients) of all ED clients and 25% (3,642 visits) of all ED visits reporting type 2 diabetes mellitus (12,866). Among patients with type 2 diabetes mellitus, 59% ($n = 65,759$) had data on the medications they usually take. Of these patients, 88% were characterized as "no emergency department clients" ($n = 57,867$) and 14% as "emergency department clients" ($n = 7,897$). FED clients with type 2 diabetes mellitus were predominantly male ($P < 0.0087$), who did not regularly visit non-DD offices with clinical insurance ($P < 0.001$) when we compared FED and ED clients. When we looked at the management of non-DD clients, we found that ED clients had a higher frequency of co-morbidities,

mortality, medical procedures for essential determination, and more incessant use of type 2 diabetes mellitus solution medications; at one visit at least, 18% of non-DD clients reported taking sulfonylureas compared to 33% in the ED client pool. Similarly, insulin use was more regular at the ED client encounter (59% versus 29%; Table 1). The three meetings had fundamentally different qualities ($P < 0.002$; Table 1). Clients with type 2 diabetes mellitus were more experienced, had longer hospital stays and higher costs for medical services, unlike the other groups. Table 2 presents the 10 most consistent key findings, with the exception of type 2 diabetes mellitus. Approximately 3.3% of all emergency department visits ($n=12,865$) for patients with type 2 diabetes mellitus were for localized brain necrosis, and 3% of these visits ($n=228$) were for end-stage renal disease. Of these visits, 66 were made by DEF clients and 162 by OED clients. Of all visits by DEF clients who reported type 2 diabetes mellitus ($n=3,645$), 3.9% (the most notable rate in the DEF client grouping table) were for persistent renal deception. The highest rates of emergency room visit by DEF clients were for end-stage renal disease, hypertension, and localized cerebral necrosis.

Table 1:

Variable	No ED	OED	FED	P-value		
One-way ANOVA (for continuous variables)						
Subjects	101,185	7,378	849			
Age, years (95% CI)	62.1 (61.9–62.2)	62.9 (62.6–63.2)	63.1 (62.2–64.1)			<0.001
Treatment duration, days (95% CI)	4.8 (4.8–4.9)	19.1 (18.9–19.4)	19 (18.3–19.7)			<0.001
Duration of hospitalization, days (95% CI)	2.4 (2.3–2.4)	11.1 (11.0 – 11.3)	13.9 (13.5–14.3)			<0.001
Health expenses, \$ (95% CI)	168 (163–174)	1,765 (1,745–1,784)	1,879 (1,822– 1,936)			<0.001
Health self-expenses, \$ (95% CI)	35 (34–36)	318 (314–321)	263 (253–272)			<0.001
Variable	No ED	OED	FED	P-value FED vs no ED	P-value OED vs no ED	P-value ED vs no ED
χ^2 -test (for dichotomous variables)						
Male, n (%)	49,524 (49)	3,943 (53)	494 (58)	<0.001	<0.001	<0.001
Comorbidity, n (%)	85,264 (84)	7,145 (97)	832 (98)	<0.001	<0.001	<0.001
Medical protection, n (%)	24,788 (24)	1,418 (19)	362 (43)	<0.001	<0.001	<0.001
Death, n (%)	379 (0.37)	163 (2.0)	23 (3.0)	<0.001	<0.001	<0.001
Operation for primary diagnosis, n (%)	8,510 (8)	1,870 (25)	226 (27)	<0.001	<0.001	<0.001
Other departments, n (%)	–	6,044 (82)	–	–	–	–
Drugs [†]						
Sulfonylurea, n (%)	8,975 (16)	1,890 (27)	266 (33)	<0.001	<0.001	<0.001
Metformin, n (%)	8,661 (15)	1,859 (26)	242 (30)	<0.001	<0.001	<0.001
Meglitinide, n (%)	914 (1.6)	290 (4)	45 (5.6)	<0.001	<0.001	<0.001
Insulin, n (%)	15,862 (28)	3,678 (52)	465 (58)	<0.001	<0.001	<0.001
Thiazolidinedione, n (%)	1,057 (1.9)	153 (2.2)	34 (4.2)	<0.001	0.081	0.002
DPP4-inhibitor, n (%)	464 (0.8)	107 (1.5)	7 (0.8)	0.8694	<0.001	<0.001
Alpha-glucosidase inhibitor, n (%)	3,736 (6.6)	819 (11.6)	150 (18.6)	<0.001	<0.001	<0.001

[†]This part of the analysis included just 64,758 patients (frequent emergency department users [FED] = 806, occasional emergency department users [OED] = 7,090, non-emergency department users [No ED] = 56,862) with information on the drugs taken. 95% CI, 95% confidence interval; DPP4, dipeptidyl peptidase-4.

Table 2:

Disease (KCD5 code)	Total visit frequency (%)	Frequency of visits by FED (%)	Frequency of visits by OED (%)
Cerebral infarction (I63.9)	244 (2.2)	51 (2)	193 (2.3)
End-stage renal disease (N18.6)	225 (2)	63 (2.3)	162 (2)
Chronic renal failure (N18.9)	224 (2)	74 (2.8)	150 (1.8)
Acute tubulo-interstitial nephritis (N10)	193 (1.7)	18 (0.7)	175 (2.1)
Hypertension (I10)	185 (1.7)	60 (2.3)	125 (1.5)
Pneumonia (J18.9)	161 (1.5)	28 (1)	133 (1.6)
Hypoglycemia (E16.2)	142 (1.3)	12 (0.5)	130 (1.6)
Myocardial infarction (acute) (I21.9)	113 (1)	9 (0.3)	104 (1.3)
Angina pectoris (I20.0)	106 (1)	12 (0.5)	94 (1.1)
Other cerebral infarction (I63.8)	89 (0.8)	25 (0.9)	64 (0.8)

FED, frequent emergency department users; OED, occasional emergency department users.

DISCUSSION:

Unrelenting emergency department clients with type 2 diabetes were more likely to be male and to experience longer treatment times, more ongoing co-morbidities, more sequential medical procedures for essential testing, higher mortality, less regular visits to non-emergency departments, longer hospital stays and costlier encounters with higher costs per visit [6-7]. In

addition, with respect to treatment, they are more regularly taking medications for type 2 diabetes mellitus: sulfonylurea, insulin, meglitinide and AGI. Similarly, these patients were required to have clinical insurance and, as a result, a lower financial status [8]. Patients with clinical insurance, such as the indigent (people remembered for the current examination), will generally require a high level of care and are treated in

the emergency room, as Padget *et al.* and Hwang pointed out [9]. It is estimated that vagrants are admitted to the clinic up to several times, and more frequently if everyone is present, and will generally stay longer. Hwang and Bugeja estimated that 73% of poor people with clinical insurance who have diabetes in Toronto have problems related to their medical condition, which may explain why patients with clinical insurance who also go to the emergency department tend to have real conditions [10].

CONCLUSION:

In addition, the information collected for only one year did not allow us to take into account the time of onset of diabetes, which would be valuable data to include in the survey, as it is normal that patients whose diabetes has lasted longer can have a very unpleasant situation of well-being, and in this way they would have more visits to the emergency room. Hence, this barrier has led to the disaggregation of less informative information, and it is intriguing to conduct a subsequent long-term population survey to confirm the current results.

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