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Research Article

A RESEARCH STUDY TO COMPARE THE PUBLIC AND PRIVATE SECTOR AWARENESS ABOUT DIABETES (TYPE – I & II) AND ITS MANAGEMENT

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Abstract:

Objective: The aim of this research was to evaluate disease management awareness among patients diagnosed with diabetes.

Method: We conducted this research at Benazir Bhutto Hospital Rawalpindi from September 2017 to June 2018 with the help of a questionnaire that included questions about the complications and management of the diabetes mellitus (DM).

Results: Research sample consisted of one hundred patients with 36 males and 64 females. Female population was predominant over males. Patients were selected from different age groups which included 25 years (3%), 25 – 40 years (13%), 41 – 60 years (61%) and above 60 years (23%). Type I and II diabetes mellitus was respectively reported in 6% and 94% study population. Patients also reported various complaints such as eye complaints (20%) and nerve disorder (18%). We also reported nephropathy related issues in 13% of the patients. Glucometer was owned by 58% patients; whereas, 18% of the population was dependent on the government sector for glucose level monitoring. Majority of patients were aware of the management of hypoglycemia (86%), the importance of exercise was well known to (78%) and diet control during diabetes mellitus (76%). Government sector patients were also majorly aware of the DM management (72%), diet control awareness was (66%) and the importance of exercise was known to (32%).

Conclusion: We need to educate the level of awareness about the management of diabetes mellitus among the community. The outcomes clearly reflect that the private sector is well aware that the government sector about the disease and its associated complications and management. Government sector awareness level was (40.03%); whereas, the private sector leads the proportion with a value of (63.3%).

Keywords: Awareness, Diabetes Mellitus (DM), Complications, Glucose Testing, Exercise, Diet Control and Hypoglycemia.

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INTRODUCTION:

According to WHO (1999), DM is a multiple etiological metabolic disorder which includes features such as chronic hyperglycemia, carbohydrate disturbance, protein metabolism and fats. These features result due to various defects such as insulin action or secretion or both [1]. Various organ failure, dysfunction of organs, degraded organ function and damage are the effects of DM. Diabetic metabolic abnormalities are caused due to insufficient insulin reaction on the tissues because of the deficiency of insulin, its secretion, insensitivity or both [2].

It is important that we do not make the diagnosis of the DM on a single abnormal value of the glucose level. Repeated verifications until the time of classic symptoms and unequivocal hyperglycemia are mandatory for disease confirmation. It is not sufficient to rely on the outcomes of Oral Glucose Tolerance Test also known as OGTT. There have been considerable developments in the DM categorization with the passage of time which rely on the disease cause instead of treatment. There are several clinical stages of the diabetes mellitus through which disease progresses from one to another stage [3]. Glycaemia severity may also vary with the passage of time on the extent of disease. Few other disease markers are still awaited to be revealed in the future. We can achieve adequate glycemic control through exercise, weight reduction and oral agents in some of the individuals. Such individuals do not take insulin and they may also normoglycemia or IGT. Few others may also need insulin to control adequate glycemia; they may also survive without this particular intervention. Such individuals possess an amount of residual insulin secretion. All those facing extensive destruction of the beta-cells do not hold residual insulin secretion which tends to insulin management in order to survive. The metabolic abnormality may also regress weight loss, weight gain or both [4].

Diabetes is of two types which include T1DM and T2DM. Former requires insulin intervention for survival; whereas, later may not need the same in order to control the metabolic function. We need to avoid confusing terms like NIDDM and IDDM. Majority of the patients are of Type – I diabetes mellitus caused by the destruction of pancreatic islet β -cell and also predisposed to ketoacidosis [5]. Autoimmune process cases with the destruction of β -cell with an unknown cause and pathogenesis are Type – I DM cases. It never includes the destruction of β -cell or failure of

such causes including a mitochondrial defect, cystic fibrosis, etc. T2DM includes the defects of insulin resistance and secretion. IGT and IFG lie between diabetes and normoglycemia and they also represent future risk categories for DM development. IGT affected patients are at a higher risk of diabetes. ECG abnormalities are also high among patients with IGT than normal glucose level patients. Such cases also face a higher rate of CVD mortality. There is an association of IGT with insulin resistance metabolic syndrome. The values of fasting glucose more than the level have an association with the development of microvascular complications and macro-vascular complications [6].

MATERIAL AND METHOD:

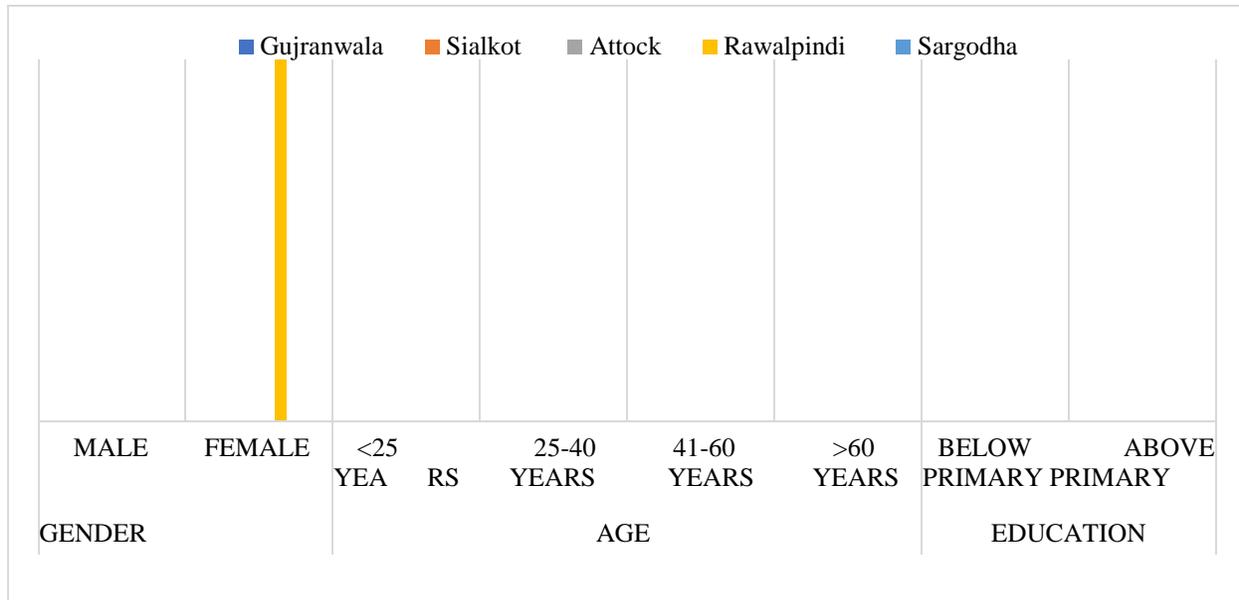
We conducted this research at Benazir Bhutto Hospital Rawalpindi 2017 to June 2018 with the help of a questionnaire that included questions about the complications and management of the diabetes mellitus (DM). Every patient who visited the hospital was approached for the filling of the research questionnaire in order to stratify the disease and its management awareness. Research commenced after informed consent of the patients and ethical approval of the hospital ethical committee.

RESULTS:

The research sample consisted of one hundred patients with 36 males and 64 females. Female population was predominant over males. Patients were selected from different age groups which included 25 years (3%), 25 – 40 years (13%), 41 – 60 years (61%) and above 60 years (23%). Type I and II diabetes mellitus was respectively reported in 6% and 94% study population. Patients also reported various complaints such as eye complaints (20%) and nerve disorder (18%). We also reported nephropathy related issues in 13% of the patients. Glucometer was owned by 58% patients; whereas, 18% of the population was dependent on the government sector for glucose level monitoring. Majority of patients were aware of the management of hypoglycemia (86%), the importance of exercise was well known to (78%) and diet control during diabetes mellitus (76%). Government sector patients were also majorly aware of the DM management (72%), diet control awareness was (66%) and the importance of exercise was known to (32%). Detailed outcomes analysis is as under:

Table – I: Stratification of Gender, Age and Education

Factors (Percentage)		Gujranwala	Sialkot	Attock	Rawalpindi	Sargodha	Total
Gender	Male	50.0	45.0	30.0	25.0	30.0	36.0
	Female	50.0	55.0	70.0	75.0	70.0	64.0
Age	< 25 years	5.0	5.0	0.0	5.0	0.0	3.0
	25-40 years	20.0	15.0	0.0	0.0	30.0	13.0
	41-60 years	65.0	60.0	70.0	50.0	60.0	61.0
	> 60 years	10.0	20.0	30.0	45.0	10.0	23.0
Education	Below primary	30.0	40.0	35.0	35.0	30.0	34.0
	Above primary	70.0	60.0	65.0	65.0	70.0	66.0

**Table – II:** Diabetes Pattern

DM Types (Percentage)	Gujranwala	Sialkot	Attock	Rawalpindi	Sargodha	Total
Type - I	5.0	5.0	0.0	15.0	5.0	6.0
Type - II	95.0	95.0	100.0	85.0	95.0	94.0

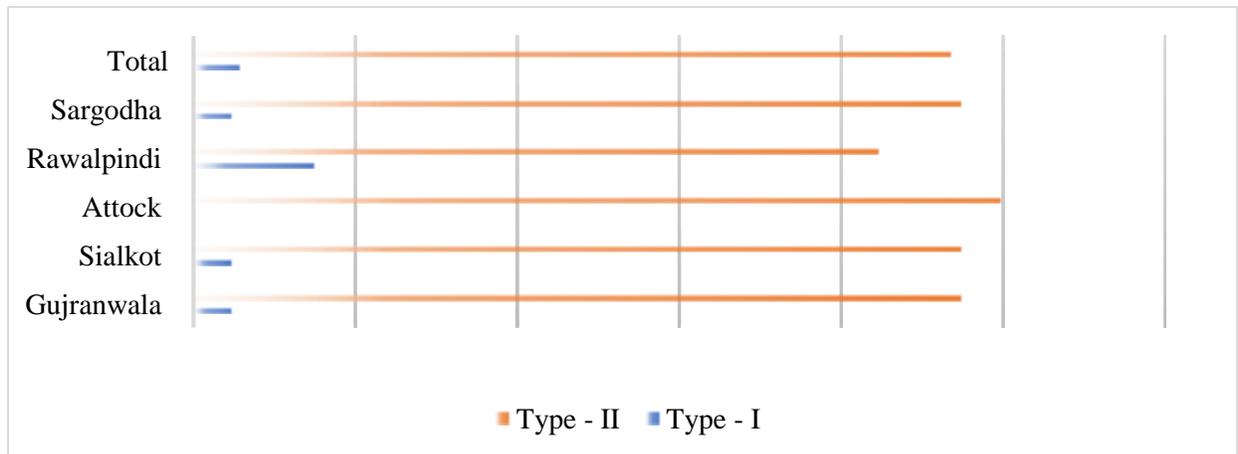


Table – III: Stratification of Pain, Disease and Satisfaction

Factors (Percentage)		Gujranwala	Sialkot	Attock	Rawalpindi	Sargodha	Total
Satisfaction	Satisfied with general health	15.0	55.0	50.0	45.0	45.0	42.0
	Not satisfied with general health	85.0	45.0	50.0	55.0	55.0	58.0
Pain	No Pain	5.0	0.0	5.0	0.0	0.0	4.0
	Mild Pain	10.0	20.0	40.0	40.0	15.0	23.0
	Moderate Pain	40.0	30.0	35.0	45.0	45.0	39.0
	Severe Pain	45.0	50.0	20.0	15.0	40.0	34.0
Disease	Blood Pressure	45.0	45.0	20.0	35.0	25.0	34.0
	Eye complains	35.0	30.0	0.0	25.0	10.0	20.0
	Nerve disorder	5.0	55.0	5.0	25.0	0.0	18.0
	Heart disease	20.0	15.0	10.0	20.0	0.0	13.0
	Kidney disease	25.0	15.0	0.0	10.0	15.0	13.0
Family history		75.0	65.0	45.0	60.0	65.0	62.0

Table – IV: Multiple Evaluated Factor between Government and Private Sector

Evaluated factors	Gujranwala		Sialkot		Attock		Rawalpindi		Sargodha	
	Govt.	Private	Govt.	Private	Govt.	Private	Govt.	Private	Govt.	Private
Own Glucometer	30	80	30	50	10	40	0	100	20	20
Zero times in last week	80	10	30	50	60	10	100	20	50	70
Once in last week	10	0	20	20	40	40	0	20	20	20
Twice in last week	10	30	20	0	0	20	0	0	30	10
Thrice in last week	0	20	20	10	0	30	0	30	0	0

> 3 times in a week	0	40	10	20	0	0	0	30	0	0
Once in a day	20	80	70	50	40	60	0	70	50	30
Twice in a day	0	10	0	0	0	30	0	30	0	0
Thrice in a day	0	0	0	0	0	0	0	0	0	0

Table – V: Disease Management Comparison

Evaluated factors	Gujranwala		Sialkot		Attock		Rawalpindi		Sargodha	
	Govt.	Private	Govt.	Private	Govt.	Private	Govt.	Private	Govt.	Private
Insulin alone	60	10	30	0	10	10	10	20	20	20
Insulin + oral hypoglycemic	30	40	30	30	0	0	0	0	0	30
Single oral hypoglycemic	0	40	20	20	80	70	50	30	60	50
Combination of oral hypoglycemic	10	0	20	50	10	20	40	20	20	0

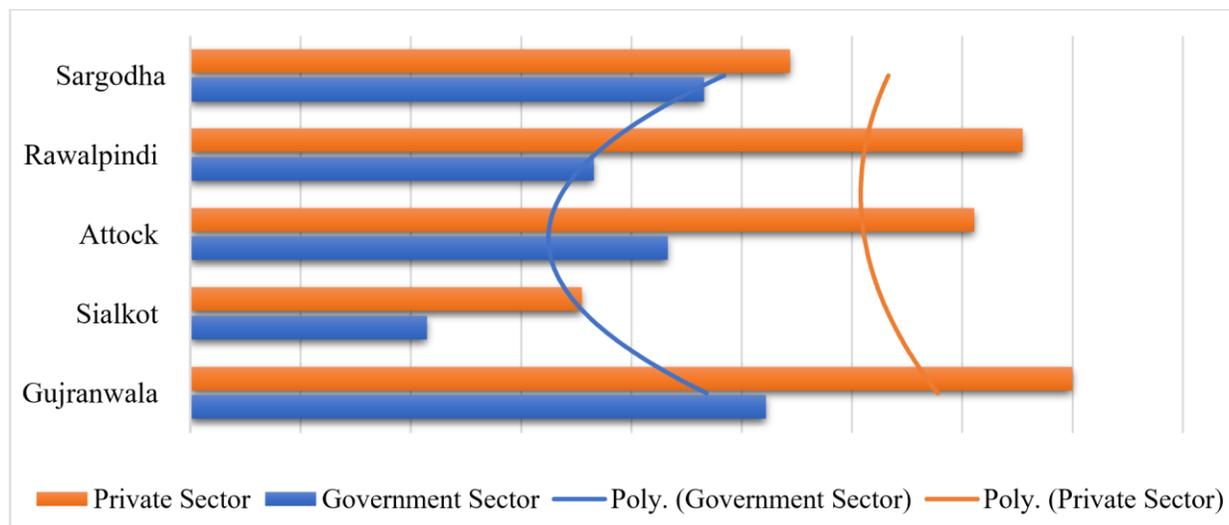
Table – VI: Comparison of Prescription and Medication

Evaluated factors	Gujranwala		Sialkot		Attock		Rawalpindi		Sargodha	
	Govt.	Private	Govt.	Private	Govt.	Private	Govt.	Private	Govt.	Private
Idea about hypoglycemia and its management	70	90	40	60	60	100	100	100	90	80
Knowledge about importance of exercise	70	100	30	60	10	100	0	60	50	60
Knowledge about importance of diet control	70	100	10	30	90	100	100	100	60	60
Following diet control	50	80	20	10	90	80	90	70	70	60
Following proper exercise	30	30	10	0	0	70	0	60	10	30

Table – VII: Multiple Awareness Factors Comparison

Evaluated factors	Gujranwala		Sialkot		Attock		Rawalpindi		Sargodha	
	Govt.	Private	Govt.	Private	Govt.	Private	Govt.	Private	Govt.	Private
Knowledge about change in their medication in last 5 years	90	100	33.30	50	100	100	0	100	100	100
Having previous prescriptions	60	100	10	40	30	50	40	60	20	80

Districts	Government Sector	Private Sector
Gujranwala	52.2	80.0
Sialkot	21.5	35.5
Attock	43.3	71.1
Rawalpindi	36.6	75.5
Sargodha	46.6	54.4

Table – VIII: District Wise Comparison**DISCUSSION:**

Diabetes mellitus is greatly influencing the economy of the world as it poses a serious burden on the healthcare setup especially in the underdeveloped countries like Vietnam. It can also cause multiply related comorbidities due to lack of disease and its management awareness [7]. General awareness spread is vital to monitor, control and manage the disease. All over the world, the diabetes awareness is not satisfactory as it is less than 30% in various countries

such as Turkey, Iran, Singapore, Saudi Arabia and India. Similar outcomes are also produced in the local research conducted all over Vietnam in order to assess the awareness level of the population about the onset of DM [8]. A local study conducted in Sindh shown better disease awareness about physical activity and diet control which is a positive sign for future developments. People were about hypoglycemia and its management; whereas, the awareness about the associated complications was not satisfactory [9]. This

particular research evaluated the level of awareness through possession of private glucometer, blood glucose level measuring frequency, hypoglycemia idea, awareness about its management, diet control importance, the importance of exercise and their impact on the control of the disease. It is evident that the public sector is weak than the private sector about the awareness of the disease and its subsequent management. Important and tangible steps are needed in the government sector to improve awareness about diabetes mellitus and its management [10]. The overall situation in private is better than the government sector but it still needs more work to increase the number of aware patients in future. Authorities need to plan feasible disease awareness campaign through print and electronic media.

CONCLUSION:

The onset of DM is common in the general population of Vietnam. We need to educate the level of awareness about the management of diabetes mellitus among the community in terms of diet control, exercise and hypoglycemia management. The outcomes clearly reflect that the private sector is well aware than the government sector about the disease and its associated complications and management. Government sector awareness level was (40.03%); whereas, the private sector leads the proportion with a value of (63.3%). Physicians need to convince the patients about knowing disease and its subsequent management options.

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