

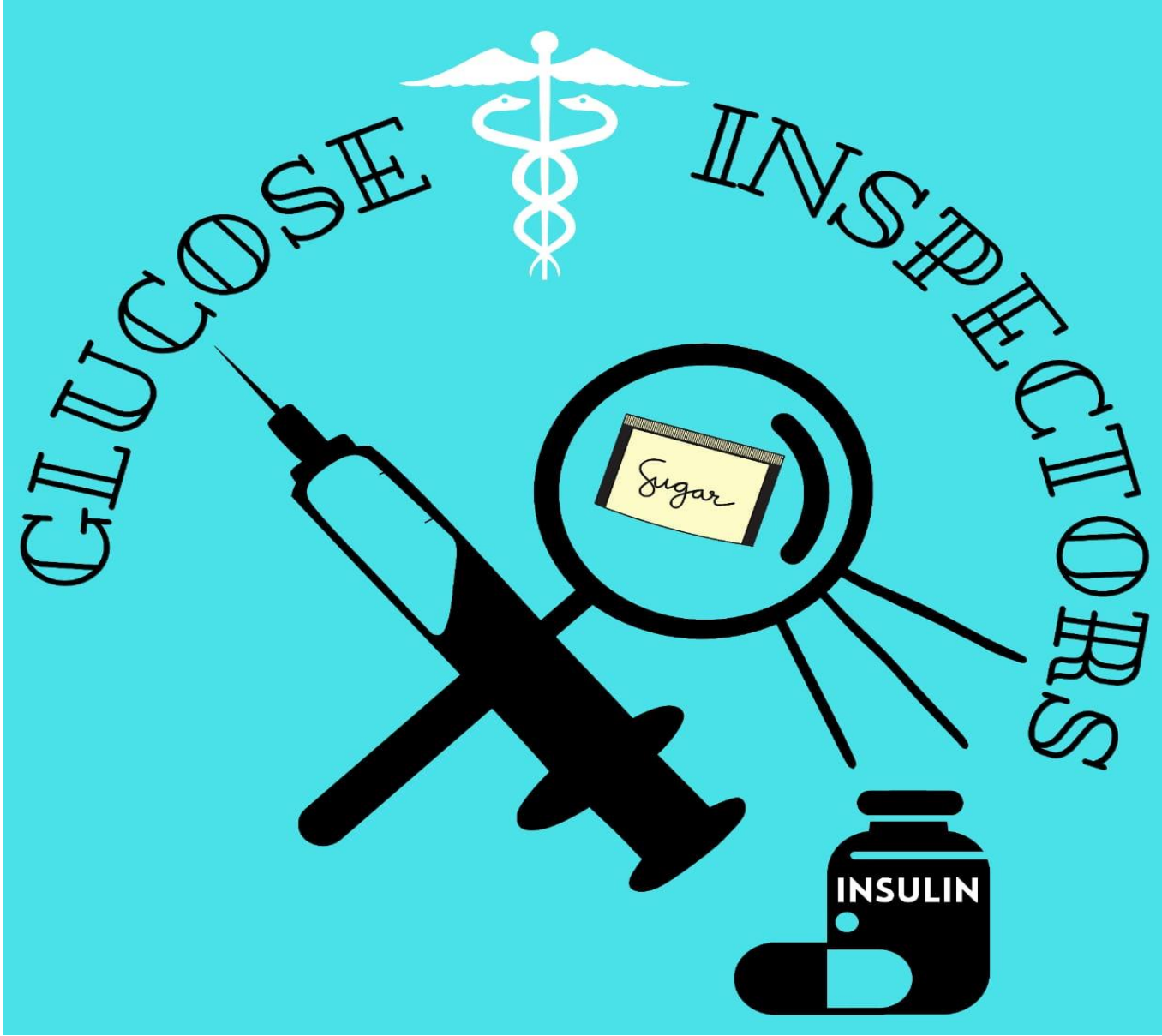


Determinants of poor glycemic control in patients living with type 2 diabetes in Trinidad and Tobago

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IINTRODUCTION

- Non- insulin dependent diabetes accounts for 90-95% of all diabetes.
- The duration of diabetes, lifestyle, level of education, age, number of medications and side effects and socioeconomic effects all contribute to sustained poor glycemic control.
- Limited awareness of glycemic targets like HbA1c, diet, recommended type and length of exercise and medication compliance among type 2 diabetic patients contributes to poor glycemic control and development of diabetic complications.
- Individuals at risk for poor glycemic control need specific interventions to achieve optimal glycemic control.

OBJECTIVES

- To determine the awareness of glycemic targets in patients living with type 2 diabetes in Trinidad and Tobago.
- To determine whether the socio-demographics of patients living with type 2 diabetes as well as modifiable risk factors, psychological factors, polypharmacy and medication side-effects contribute to the non-attainment of glycemic targets in our population.

METHODOLOGY

- A cross sectional convenient sample survey was conducted between the months of January and April 2022 .
- Patients’ awareness of glycemic targets and whether the socio demographics of patients living with type 2 diabetes as well as modifiable risk factors, psychological factors, polypharmacy and medication side effects and whether they were contributing to non-attainment of glycemic targets in our population was determined by firstly contacting the relevant institutions for approval to conduct research.
- We obtained patient consent to participate in our study and distributed questionnaires to outpatients through the Diabetes Association of Trinidad and 3 Tobago utilizing a virtual platform and by printed questionnaires disseminated to patients in primary care chronic disease outpatient clinics and diabetes wellness centers at the various regional health authorities in Trinidad and Tobago.
- The inclusion criteria included patients living with type 2 diabetes with an HBA1c > 7 in the 18 - 70 age group. A sample size of 322 was used was exceeded and the sampling technique used was convenience sampling

RESULTS

		Frequency	Percent
Gender	Male	143	38.3
	Female	230	61.7
Age Range	18 to 29	25	6.7
	30 to 39	21	5.6
	40 to 49	52	13.9
	50 to 59	85	22.8
	60 to 70	190	50.9
Religion	Christian	205	55.0
	Hindu	90	24.1
	Muslim	37	9.9
	Jehovalf's Witness	15	4.0
	Rastafarian	1	0.3
	Other	13	3.5
	missing	12	3.2
Ethnic Background	Indian	202	54.2
	African	93	24.9
	Mixed	70	18.8
	Chinese	1	0.3
	Indigenous	1	0.3
	Latin America	1	0.3
	Other	2	0.5
	missing	3	0.8
Highest Level of Education	No Formal Education	1	0.3
	Primary & Below	120	32.2
	High School	137	36.7
	Technical or Vocational Training	47	12.6
	Undergraduate Degree	48	12.9
	Postgraduate Degree	10	2.7
	missing	10	2.7

If patient is aware of HBA1c significance in Self management of Diabetes

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	142	38.1	38.1	93.8
	No	208	55.8	55.8	55.8
	missing	23	6.2	6.2	100.0
	Total	373	100.0	100.0	

If patient is aware of ideal HBA1c range less than 6.9%.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	100	26.8	26.8	38.1
	No	42	11.3	11.3	11.3
	missing	231	61.9	61.9	100.0
	Total	373	100.0	100.0	

Participant views on what system improvements can be made to optimize care for patients living with type 2 diabetes

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	More frequent Checkups With Physician	68	18.2	18.2	18.2
	More contact time with Doctor	41	11.0	11.0	29.2
	Better educational resources for Self-management	53	14.2	14.2	43.4
	More individualized self-management regimen	56	15.0	15.0	58.4
	Other	6	1.6	1.6	60.1
	missing	149	39.9	39.9	100.0
	Total	373	100.0	100.0	

If patient has patient met all recommended diabetic targets & treatment goals

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	116	31.1	31.1	83.1
	Slightly Agree	45	12.1	12.1	52.0
	Neutral	68	18.2	18.2	18.2
	Slightly Disagree	48	12.9	12.9	31.1
	Strongly Disagree	33	8.8	8.8	39.9
	missing	63	16.9	16.9	100.0
	Total	373	100.0	100.0	

		Frequency	Percent
Marital Status	Single	72	19.3
	Married	195	52.3
	Divorced/Separated	55	14.7
	Widowed	41	11.0
	Decline to Answer	8	2.1
	missing	2	0.5

		Frequency	Percent
Employment Status	Unemployed	110	29.5
	Part-time Employed	30	8.0
	Full-time Employed	73	19.6
	Self-Employed	26	7.0
	Pensioner/Retired	110	29.5
	Student	4	1.1
	missing	20	5.4

		Frequency	Percent
Financial Status	High Income	16	4.3
	Moderate/ Average	158	42.4
	Low Income	196	52.5
	missing	3	0.8

		Frequency	Percent
Famaly History of Diabetes	No	68	18.2
	Yes	300	80.4
	missing	5	1.3

		Frequency	Percent
BMI Awareness	Yes	64	17.2
	No	264	70.8
	missing	45	12.1

		Frequency	Percent
BMI Range	Below 18.5	6	1.6
	18.5 to 24.9	9	2.4
	25.0 to 29.9	30	8.0
	30.0 to 34.9	11	2.9
	35.0 to 39.9	7	1.9
	≥ 40.0	1	0.3
	missing	309	82.8

HBA1c is an average amount of glucose in RBC over what period of time

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Month	5	1.3	1.3	1.3
	2 or 3 Months	112	30.0	30.0	31.4
	6 Months	21	5.6	5.6	37.0
	1 Year	4	1.1	1.1	38.1
	missing	231	61.9	61.9	100.0
	Total	373	100.0	100.0	

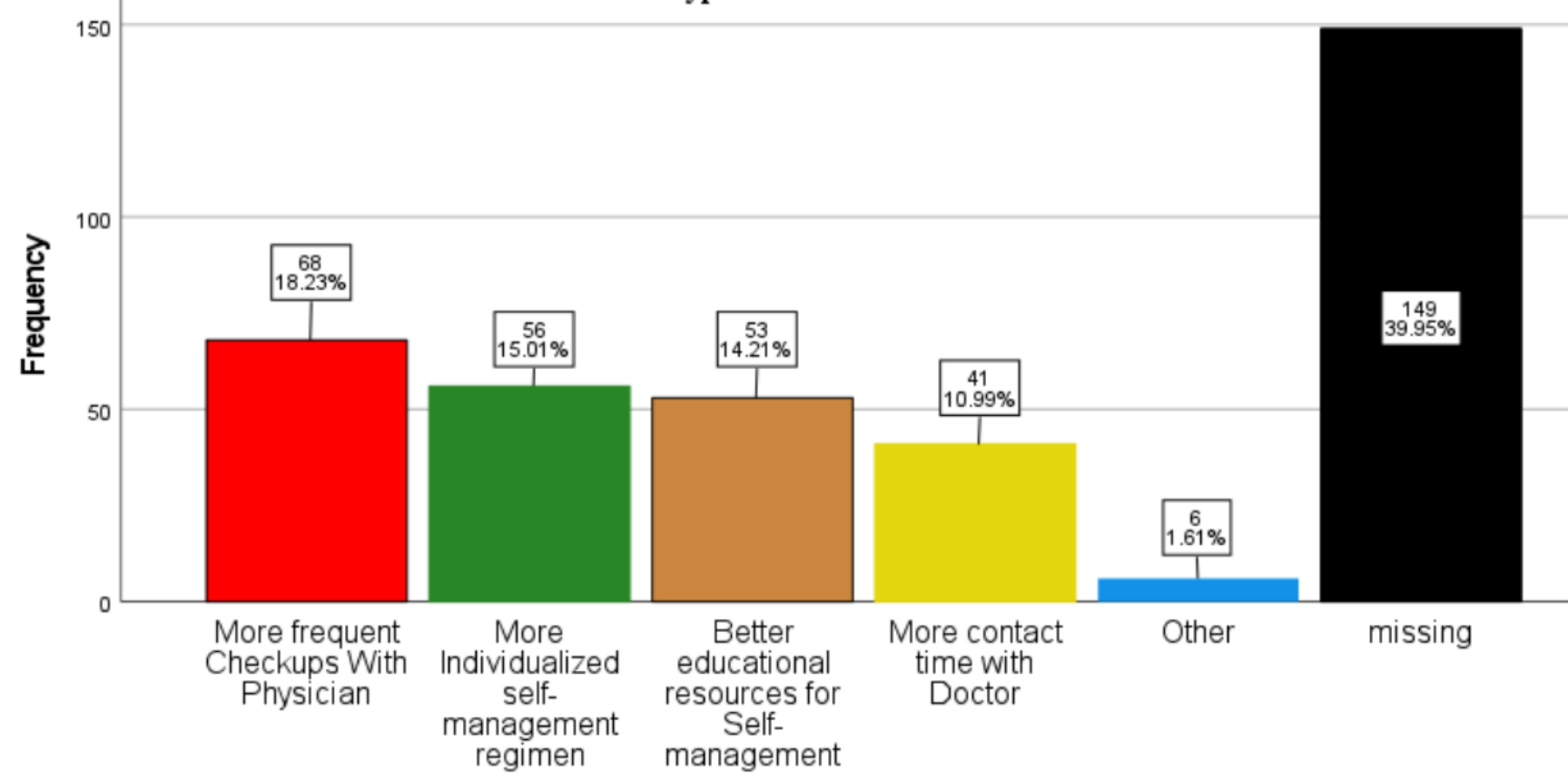
If patient feels comfortable discussing their condition with the healthcare provider

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	228	61.1	61.1	96.2
	Slightly Agree	48	12.9	12.9	35.1
	Neutral	62	16.6	16.6	16.6
	Slightly Disagree	8	2.1	2.1	18.8
	Strongly Disagree	13	3.5	3.5	22.3
	missing	14	3.8	3.8	100.0
	Total	373	100.0	100.0	

If patient is satisfied with his/her ability to self-manage their condition

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	212	56.8	56.8	83.9
	No	101	27.1	27.1	27.1
	missing	60	16.1	16.1	100.0
	Total	373	100.0	100.0	

Participant views on what system improvements can be made to optimize care for patients living with type 2 diabetes



DISCUSSION

- Data collected showed that there is indeed an issue of uncontrolled diabetes in our nation.
- All respondents had an HBA1c of > 7% and as such are at an increased risk for cardiovascular disease.
- 58.8% were not aware of the significance of HBA1c and 70.8% were unaware of the impact of BMI on type2 DM.
- 49% had a BMI > 27kg/m2 where most were of the east indian persuasion.
- Proper education of the population on chronic diseases proved to significantly decrease morbidity and mortality in other first world countries.
- 61.7% of participants were female and 38.3 were males, females tend to have more comorbidities.
- Management of comorbidities is central to optimal patient care and as such should always be addressed.

CONCLUSION

- There were multiple gaps in patient education a it relates to their disease.
- Patients were generally reluctant to share their BMI status and most were unaware of their HBA1x %.
- This could have been due to lack of diabetes education seminars and self care management strategies.
- Clinics should include more diabetes education programs on obesity, nutrition exercise, medication compliance and adjustment in the form of brochures flyers advertisements etc.
- Mobile health applications can be of great use in this technological era to easily facilitate persons living with Diabetes Mellitus.

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