Ethnic disparities in people accessing Freestyle Libre in the United Kingdom: Insights from the association of British Clinical Dialectologists audit

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ABCD
Association of British Clinical Diabetologists

Introduction

- Freestyle Libre (FSL) is a flash glucose monitoring system that monitors interstitial glucose levels

- We have recently shown[1,2] that use of FSL is associated with significant improvement in glycaemic control, hypoglycaemia unawareness and reduction in diabetes-related distress

Study Aim

- The objective of this study is to identify ethnicity-specific differences in participants who access FSL

Methods

- Clinicians using FSL were invited to submit data to a secure web-based tool held within the NHS N3 network.
- We compared the baseline clinical characteristics across the three main ethnic groups (Caucasian, Afro-Caribbean and Bangladeshi, Indian Pakistani (BIP) using ANOVA and chi-squared test.
- We performed a linear regression analysis to understand if ethnicity was associated with a reduction in HbA1c with the use of FSL

Table 1: Demographic and clinical differences across ethnicities accessing FSL

	Caucasian (n=13,112)	Afro-Caribbean (n=113)	BIP (n=473)	P-value
Age	40.2 (±18.6)	32.9 (±16.0)	34.5 (±15.2)	<0.001
Gender (% Female)	49%	60%	49%	0.08
BMI	25.7 (±6.4)	26.2 (±7.1)	25.2 (±6.0)	0.21
Duration of Diabetes	20.4 (±44.1)	10.9 (±9.2)	14.8 (±11.4)	0.001
Pre-FSL HbA1c	70.5 (±18.7)	76.6 (±22.2)	70 (±16.8)	0.002
Diabetes related Distress	2.9 (±1.3)	3.3 (±1.4)	2.9 (±1.3)	0.007
Gold Score	2.7 (±1.7)	2.6 (±1.7)	2.6 (±1.7)	0.57
Severe Hypoglycaemia	2.1 (±21.8)	4.2 (±15.2)	2.5 (±12.0)	0.75
Structured Education (DAFNE)	27%	35%	31%	0.01

Table 2: Predictors of change in HbA1c with use of FSL

	Beta	SE	P-value
Pre-FSL HbA1c	0.48	0.07	<0.001
Age	0.21	0.10	0.054
Gender	-1.17	2.86	0.683
Black ethnicity	25.36	13.91	0.073
White ethnicity	7.84	8.09	0.337
Baseline HbA1c	-0.23	0.22	0.300
Duration of Diabetes	-0.49	0.16	0.004
DAFNE	1.26	4.06	0.757
Diabetes related distress	-2.38	0.87	0.008

*BIP ethnicity was used as the reference group

Conclusion

- We have provided the first evidence of ethnic disparities in people living with diabetes who access FSL

- People living with diabetes with African ethnicity who access FSL are more likely to have a higher HbA1c at presentation, higher diabetes-related distress and are more likely to have completed structured education

References

1. Deshmukh et.al Diabetes Care DOI: 10.2337/dc20-0738
2. Deshmukh et.al Diabetes obesity metabolism DOI: 10.1111/dom.14467