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COMMENTARY

Bridging the digital divide: The UNBIASED national study to unravel the impact of ethnicity and deprivation on diabetes technology disparities in the United Kingdom

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1 | INTRODUCTION

Type 1 diabetes imposes a substantial burden on young individuals, necessitating constant monitoring, precise medication administration and lifestyle adjustments. The advent of life-changing diabetes technologies, such as continuous glucose monitoring (CGM) systems, insulin pumps and hybrid closed loop (HCL) systems, promises improved disease management and enhanced quality-of-life. However, barriers to access have hindered the widespread adoption of these technologies among children and young people (CYP) with type 1 diabetes in the United Kingdom.

2 | NATIONAL PAEDIATRIC DIABETES AUDIT (NPDA)

According to the NPDA 2019–2022 reports, despite the increased usage of insulin pumps compared to insulin injections across all quintiles of deprivation, the gap in insulin pump usage between children and young people living in the most and least deprived areas widened over the previous 6 years.[1] Additionally, the NPDA reported significantly lower usage of insulin pumps or real-time CGM systems among black children, while white children exhibited the highest usage of pumps and CGM. Similarly, despite increased CGM usage in all quintiles of deprivation, the gap between the most and least deprived areas expanded over time. Moreover, those using CGM were more likely to achieve lower HbA1c targets compared to those not using CGM, irrespective of the mode of insulin delivery.

3 | NICE UPDATED TECHNOLOGY APPRAISAL

NICE Technology appraisals (TA) are recommendations for the use of new and existing medicines and treatments

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within the NHS. The NHS is legally obliged to fund and resource medicines and treatments recommended by NICE's TAs, unlike NICE guidelines, which are advisory but not legally binding.[2] The updated NICE TA on hybrid closed-loop systems for managing blood glucose levels in type 1 diabetes: Technology appraisal guidance TA943 was published in December 2023 and advocates for comprehensive NHS utilisation and access to hybrid closed-loop systems for children and adolescents with type 1 diabetes.[3,4] This marks a notable and positive shift towards enhancing accessibility to advanced diabetes technologies. Unlike previous NICE guidelines, which imposed stringent criteria for accessing CGM exclusively, the latest recommendations, both for children and adults with type 1 diabetes, are poised to expand access to include hybrid closed-loop systems. The newly published NICE-TA is anticipated to result in a more inclusive availability of diabetes technologies. While this is expected to incur increased costs, it is viewed as a crucial step in diminishing disparities and facilitating broader access to technology that can significantly impact long-term health outcomes. Implementing the NICE TA 943 will require time and resources. In response, NHS England has set out a 5-year implementation strategy[5] designed to ensure that eligible people across England receive equitable and fair access to HCL technologies following the publication of the NICE TA.[4] Clinical teams are being encouraged to initiate early discussions with their local commissioning Integrated Care Boards (ICBs), who are responsible for setting out these 5-year plans. While these initiatives are extremely welcomed, it is likely that successful rollout will still be contingent upon understanding and addressing the reasons for the inequitable access to diabetes technology highlighted in the NPDA data and other studies.

4 | UNDERSTANDING THE HEALTH INEQUALITIES

Studies in the United States (US)[6] have shed light on the intricate interplay between ethnicity, socioeconomic status and health outcomes; although in a different social and political and healthcare context to the UK. As these authors have observed, individuals from marginalised ethnic backgrounds and/or living in deprived socio-economic conditions often face hurdles to accessing and utilising technological resources due to a complex web of historical, social and economic factors. Ethnicity and deprivation are intertwined, creating a compound effect on an individual's ability to access and engage with technology. For instance, these US-based studies have shown that certain ethnic groups are disproportionately affected by poverty and have limited access to educational resources which can support technology use.[7] Work has also shown implicit bias on the part of healthcare providers are less likely to recommend diabetes technology to under-represented groups, for reasons relating to their ethnicity or access to health insurance.

This, in turn, has a cascading effect on access to technology, as those in deprived conditions often lack the means to acquire and use the latest devices and internet services. These studies highlight the need to view health disparities through a lens that encompasses the social determinants of health. Similarly, the digital divide cannot be fully comprehended without a better understanding of the social and cultural factors that contribute to disparities in technology use.[8] It has also been shown that community engagement is crucial to addressing the technology access digital divide, as it allows for the development of tailored solutions that consider the unique challenges faced by different ethnic groups and economically deprived communities.[9]

Effective policies at the governmental level are indispensable in narrowing the digital gap. In the UK, the significance of universal health policies that address health disparities, and a parallel approach is being undertaken in the realm of technology access. Governments should actively work towards creating an environment that fosters equal opportunities for technology access, irrespective of ethnicity or socio-economic status.

5 | UNBIASED -UNDERSTANDING INEQUALITIES AND BARRIERS TO ACCESSING DIABETES TECHNOLOGY IN CHILDREN AND YOUNG PEOPLE WITH TYPE 1 DIABETES

The UNBIASED national study, which is funded by Diabetes UK (Ng, Chief investigator) commenced in October 2023 and brings together investigators with expertise in paediatric diabetes, diabetes technologies, qualitative methods and issues affecting individuals from minority ethnic groups and their access to healthcare. The collaboration is also strengthened by the involvement of JDRF, Diabetes Africa, Egality Health and Devices 4 Dignity. Workstream 1 (Darko, lead) involves interviews with CYP and/or their parents, to explore their experiences of using, and barriers to accessing, diabetes technologies. Workstream 2 (Lawton, lead) focuses on the perspectives and experiences paediatric healthcare professionals who can act as gatekeepers to diabetes technologies[9] and considers the training, resourcing and support these individuals may need to help ensure equitable access to diabetes technology amongst CYP with type 1

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diabetes. Data collection in both workstreams is well underway, with effort being made to recruit individuals with type 1 diabetes (and their carers) from racially minoritised and socioeconomically disadvantaged groups, and healthcare professionals based in sites serving these communities, including from sites shown in the NPDA to have had lower uptake/access to diabetes technologies compared with other sites in England.

The study aims to bridge the gap between underrepresented CYP with type 1 diabetes and life-changing technologies by better understanding existing barriers and developing practical solutions. By fostering collaboration between people with lived experience, healthcare professionals, policymakers and other stakeholder groups we can better understand how ethnicity and deprivation affect inequalities in technology use in the UK and begin to identify ways to close the gap in access by developing targeted strategies. We aim to pave the way for a more inclusive and accessible landscape for diabetes technologies within the NHS, ultimately enhancing the overall wellbeing of young individuals managing type 1 diabetes.

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CONFLICT OF INTEREST STATEMENT

Authors have no conflict of interest related to the study.

DATA AVAILABILITY STATEMENT

Data sharing is not applicable to this article as no new data were created or analyzed in this study.

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