



Contents lists available at ScienceDirect

Journal of Infection

journal homepage: [www.elsevier.com/locate/jinf](http://www.elsevier.com/locate/jinf)

## Letter to the Editor

**Awareness of HIV, hepatitis B, hepatitis C, tuberculosis and COVID-19 in migrant students in the UK: a pilot survey from an Institute of Higher Education**

Dear Editor,

According to the Office for National Statistics (ONS), between June 2021 and June 2022 an estimated 1.1 million migrants entered the UK. The largest group of these migrants were economic migrants of non-EU nationality, the majority of whom (277,000) entered with study visas.<sup>1</sup> This represents a significant increase following the lifting of travel restrictions imposed during the SARS-CoV-2 pandemic.<sup>1</sup> Although the majority arrived as economic migrants, there are official settlement schemes for refugees and asylum seekers, such as the Ukraine Sponsorship Scheme and the Afghan Resettlement Programme, that assist migrants escaping war, religious persecution or natural disasters. An estimated 35,000 asylum seekers and refugees also arrived through unofficial/illegal small boats traveling across the English Channel.<sup>1</sup> In 2018, arrivals via small boats accounted for 2.2% of 13,377 unofficial/illegal entrance; by 2022 this figure had risen to 83.82% of 39,400 unofficial/illegal entrances, with officials attributing the increase in part to reduced port operations during the SARS-CoV-2 pandemic.<sup>2</sup>

Screening newly-arrived migrants (arrival in the UK within the past 5 years) for infectious diseases, including tuberculosis (TB), HIV, hepatitis B (HBV) and C (HCV), and determining their vaccination status for vaccine-preventable diseases (VPD), is important for migrants' public health and integration into society.<sup>3</sup> In particular, refugees and asylum seekers that arrive through unofficial routes, having undertaken arduous journeys and living in over-crowded reception centers in host countries, are likely to be unscreened and unvaccinated for many VPDs, increasing the risk of outbreaks, as demonstrated by the recent diphtheria outbreak at the Manston Migrant Centre in Kent.<sup>4,5</sup>

There is considerable evidence suggesting high acceptability among newly-arrived migrants to the UK for screening for infectious diseases including HIV, HBV, HCV, and TB, when offered.<sup>6,7</sup> Recent data has shown that within the EU, screening for infectious diseases is sub-optimal, with the majority of EU countries screening for single diseases (predominantly active or latent TB).<sup>8</sup> Therefore, we aimed to assess the current levels of knowledge and awareness of infectious diseases (TB, HIV, HBV, and HCV) and vaccination (Bacillus Calmette-Guérin [BCG], HBV, and COVID-19 vaccines) in recently arrived migrants, and evaluate whether educational awareness resources should be targeted to these groups to improve screening and vaccination uptake.

We distributed a questionnaire to students enrolled on English for Speakers of Other Languages (ESOL) courses at Leicester College,

an institute for Higher Education within a city with a highly diverse population (59% minority ethnic background of which 41% were non-UK-born.). We collected data on their awareness of infectious disease and vaccination.<sup>9,10</sup> One hundred and eighty-three migrant students (77 (42%) male; mean age 19 years) enrolled on ESOL classes at Leicester College completed the questionnaire in January and February 2022. Participants originated from over 25 countries worldwide, with the majority from Asian/Middle Eastern countries (76%) followed by African countries (16%), then European countries outside the UK (8%).

Awareness (having heard of) of infectious diseases was low with 26% of participants aware of TB, 31% of HIV, 17% of HBV, and 14% of HCV (Fig. 1a-d, respectively), demonstrating a potential opportunity to improve awareness through education and engagement. Furthermore, awareness of vaccine existence was low for TB (15%, Fig. 1e) and HBV (10%, Fig. 1f), higher for SARS-CoV-2 (75%, Fig. 1g) but still low compared to awareness in the general population.

We found greater awareness of the SARS-CoV-2 vaccine among participants born in Asian/Middle Eastern countries compared to those born in Europe or Africa ( $p < 0.001$ , Pearson's  $X^2$  test). Of the 138 respondents aware of the SARS-CoV-2 vaccine, 75 (84%) were unaware of the HBV vaccine and 70 (80%) were unaware of the BCG vaccine.

Our data highlights the urgent need for greater information distribution to marginalized groups, to improve their understanding of their risk of acquiring infectious diseases. Furthermore, healthcare providers must align their services to the needs of marginalized groups through new healthcare awareness campaigns, and increase opportunities for screening and vaccination outside of primary and secondary care facilities.<sup>8</sup>

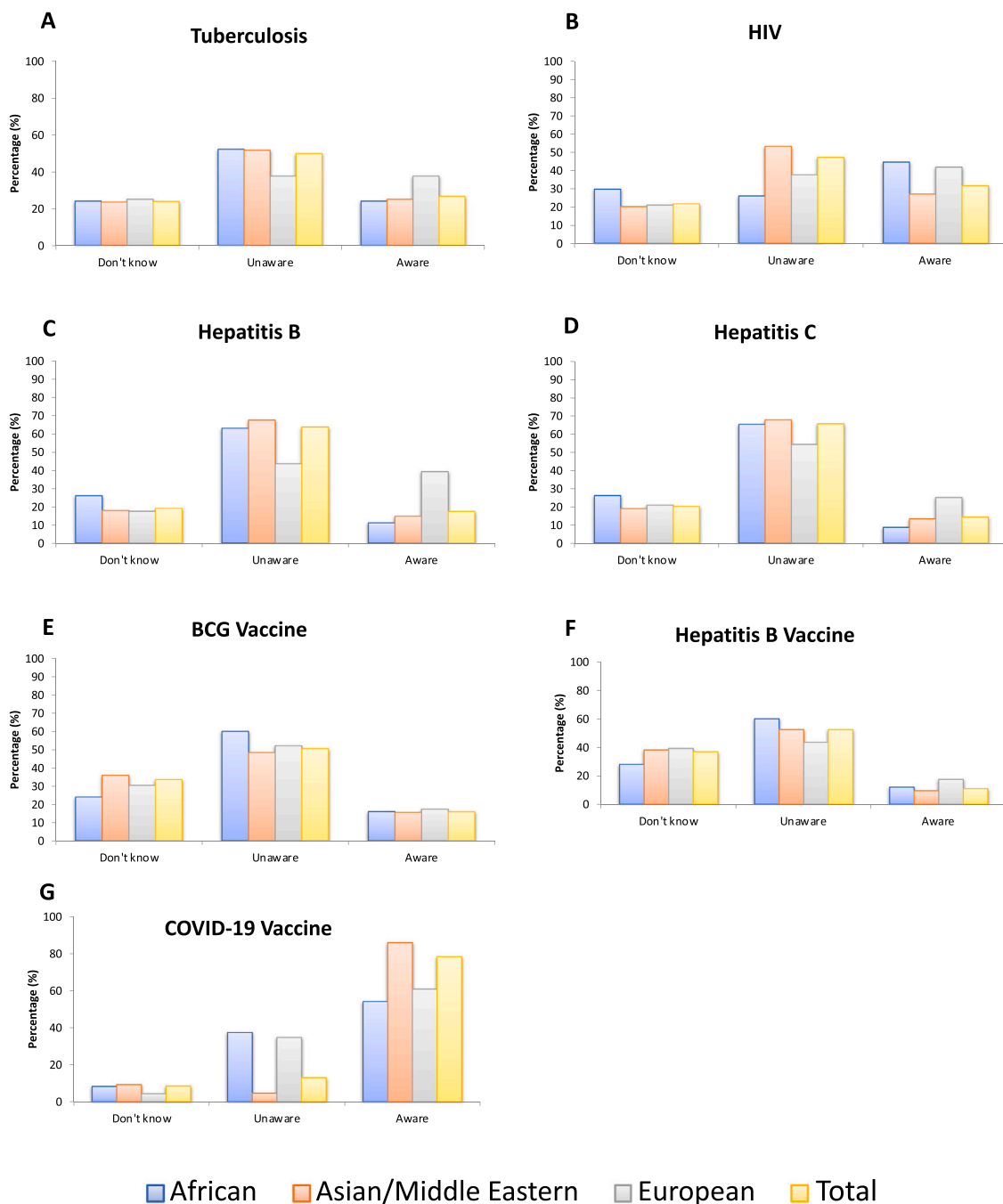
We acknowledge that migrants are a diverse group and although our study was of limited size, and only a small section of students enrolled at Leicester College was sampled, the cohort represented over 25 countries with ages ranging from 18 to 44. Therefore, Higher Educational Institutes (community colleges), such as the location of our study, provide ideal environments for further education on infectious disease prevention. Classes, lectures, or health awareness campaigns, particularly if married with onsite screening or vaccination opportunities, have the potential to improve engagement and uptake in a population that is vulnerable and underserved; which if successful, could lay the foundation for a wider distribution of screening and vaccination events in community centers, places of worship, or other educational facilities.

**Funding**

This research did not receive any grant funding from public, commercial, or not-for-profit organizations.

<https://doi.org/10.1016/j.jinf.2023.02.017>

0163-4453/Crown Copyright © 2023 Published by Elsevier Ltd on behalf of The British Infection Association. All rights reserved.



**Fig. 1.** (a–d) Response awareness of infectious diseases (TB, HIV, HBV, and HCV) stratified by country of birth. (e–g) Response to awareness of vaccinations (BCG, HBV, and COVID-19) stratified by country of birth.

### Declaration of Competing Interest

All authors declare they have no conflicts of interest in connection with the manuscript.

### Acknowledgments

The authors wish to thank the staff at Leicester College for all their help during the study.

### References

- Office for National Statistics. Long-term international migration, provisional: year ending June 2022. 2022 [Accessed 26 January 2023]. Available from: (<https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/internationalmigration/bulletins/longterminternationalmigrationprovisional/yearendingjune2022>).

- Home Office. Irregular migration to the UK, year ending September 2022. 2022 [Accessed 26 January 2023]. Available from: (<https://www.gov.uk/government/statistics/irregular-migration-to-the-uk-year-ending-september-2022/irregular-migration-to-the-uk-year-ending-september-2022#contents>).
- Hargreaves S, Nellums LB, Johnson C, Goldberg J, Pantelidis P, Rahman A, et al. Delivering multi-disease screening to migrants for latent TB and blood-borne viruses in an emergency department setting: a feasibility study. *Travel Med Infect Dis* 2020;**36**:1–30. <https://doi.org/10.1016/j.tmaid.2020.101611>
- Taylor D. Diphtheria outbreak confirmed at asylum seeker centre in Kent. 2022 [Accessed 26 January 2023]. Available from: (<https://www.theguardian.com/science/2022/oct/20/diphtheria-outbreak-confirmed-at-asylum-seeker-centre-in-kent>).
- Jones S. Migrant Health Matters: Editorial. 2022 [Accessed 26 January 2023]. Available from: (<https://www.nature.com/articles/s41564-022-01285-8.pdf>).

6. Eborall H, Wobi F, Ellis K, Willars J, Abubakar I, Griffiths C, et al. *Integrated screening of migrants for multiple infectious diseases: qualitative study of a city-wide programme*. *EClinM* 2020;**21**:1–7.
7. Brewin P, Jones A, Kelly M, McDonald M, Beasley E, Sturdy, et P, et al. *Is screening for tuberculosis acceptable to immigrants? A qualitative study*. *J Public Health Med* 2006;**28**(3):253–60. <https://doi.org/10.1093/pubmed/fdl031>
8. Seedat F, Hargreaves S, Nellums LB, Ouyang J, Brown M, Friedland JS, et al. *How effective are approaches to migrant screening for infectious diseases in Europe? A systematic review*. *Lancet Infect Dis* 2018;**18**(9):259–71.
9. Vinter R. 'Diversity is a beautiful thing': the view from Leicester and Birmingham. 2022 [Accessed 26 January 2023] Available from: (<https://www.theguardian.com/uk-news/2022/nov/29/leicester-birmingham-first-super-diverse-uk-cities-census>).
10. Office for National Statistics. Country of birth (detailed). 2022 [Accessed 06 February 2023]. Available from: ([https://www.ons.gov.uk/datasets/TS012/editions/2021/versions/1](https://www.ons.gov.uk/datasets/TS012/editions/2021/versions/1https://www.ons.gov.uk/datasets/TS012/editions/2021/versions/1)).

Paul W Bird <sup>a,b</sup>, Christopher W Holmes <sup>a,b</sup>

<sup>a</sup> Department of Microbiology, University Hospitals of Leicester NHS Trust, UK

<sup>b</sup> Department of Respiratory Sciences, University of Leicester, UK

Daniel Pan <sup>a,b</sup>, Christopher A Martin <sup>a,b</sup>, Manish Pareek <sup>a,b,\*</sup>

<sup>a</sup> Department of Respiratory Sciences, University of Leicester, UK

<sup>b</sup> Department of Infection and HIV Medicine, University Hospitals of

Leicester NHS Trust, UK

Mayuri Gogoi

Department of Respiratory Sciences, University of Leicester, UK

Rominder Sandhu, Pamela Sargeant

Department of Further Education, Leicester College, UK

Claire L McMurray

Department of Microbiology, University Hospitals of Leicester NHS Trust, UK

Rebecca F Baggaley

Department of Population Health Sciences, University of Leicester, UK

Laura B Nellums

Faculty of Medicine & Health Sciences, University of Nottingham, UK

\*Correspondence to: Department of Respiratory Science, Maurice Shock Medical Sciences Building, University Road, Leicester LE1 9HN, UK.

E-mail address: [mp426@leicester.ac.uk](mailto:mp426@leicester.ac.uk) (M. Pareek).