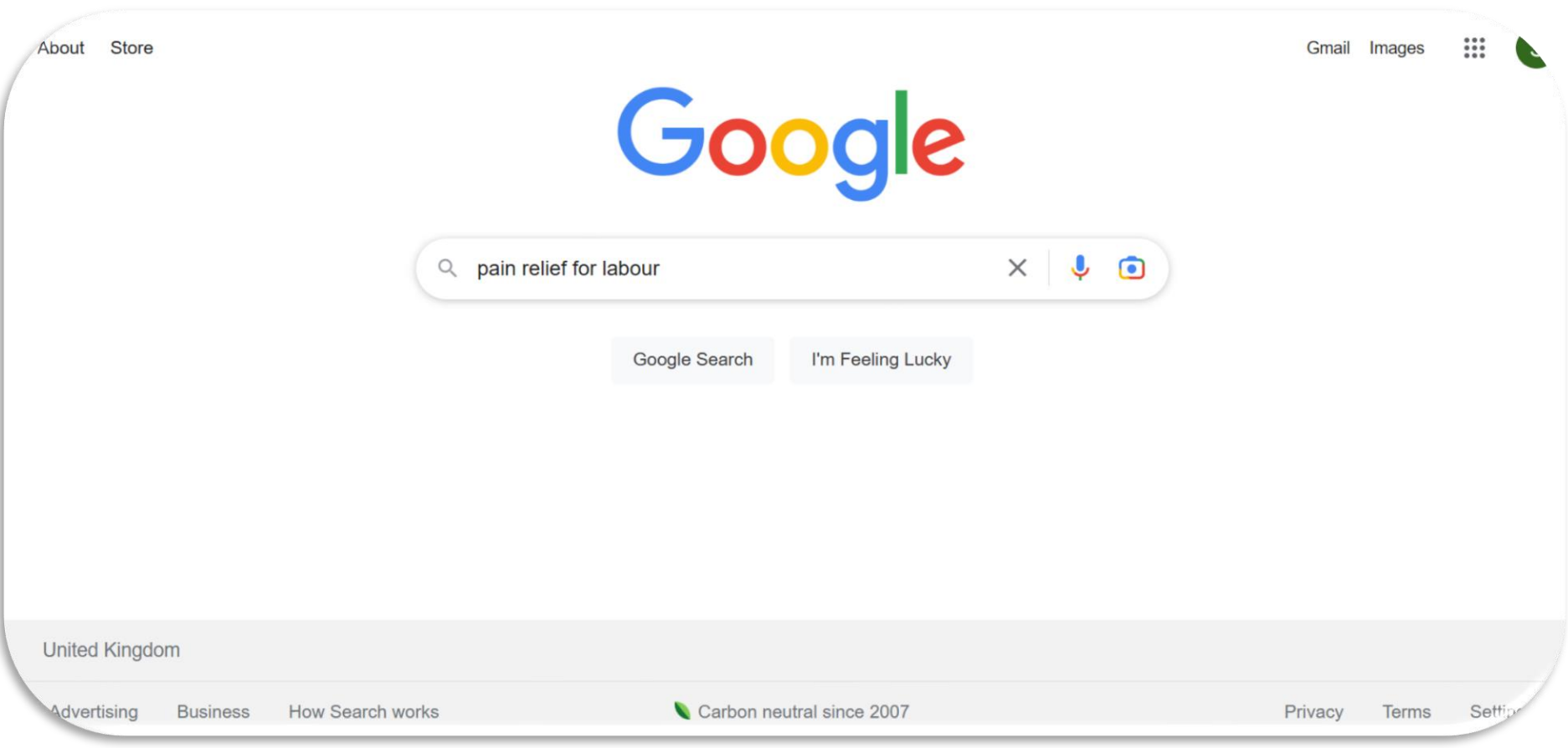




Do online search results contribute to racial bias and play a role in epidural uptake in women?

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Introduction

The latest MBRRACE report [1] highlighted that black and Asian women are at a greater risk of maternal mortality and morbidity compared to white women.

Black and Asian women have a higher risk of dying in pregnancy		
White women	1	9/100,000
Mixed ethnicity women	1.3x	12/100,000
Asian women	1.8x	16/100,000
Black women	3.7x	34/100,000

Racial disparity in maternal care has been highlighted by multiple studies [2]. The internet is a source of readily available information and it is not uncommon for women to search online for further information about birth and pain relief .We wanted to investigate if there was a bias introduced at this stage of information gathering from the woman's perspective.

Aim

To analyse image results of popular search terms relating to epidural and labour analgesia in various search engines and investigate the distribution.

Methods

We surveyed women from an antenatal class and asked them what word(s) or phrases they would input as search terms if they were seeking information about pain relief options in labour . Four popular search engines (Google, Bing, Yahoo, DuckDuckGo) were used to conduct an image search. The first 50 images were classified by two investigators, working independently, according to the colour of skin depicted in the image: black, white, brown, indeterminate, anatomy pictures and text based pictures.

Results

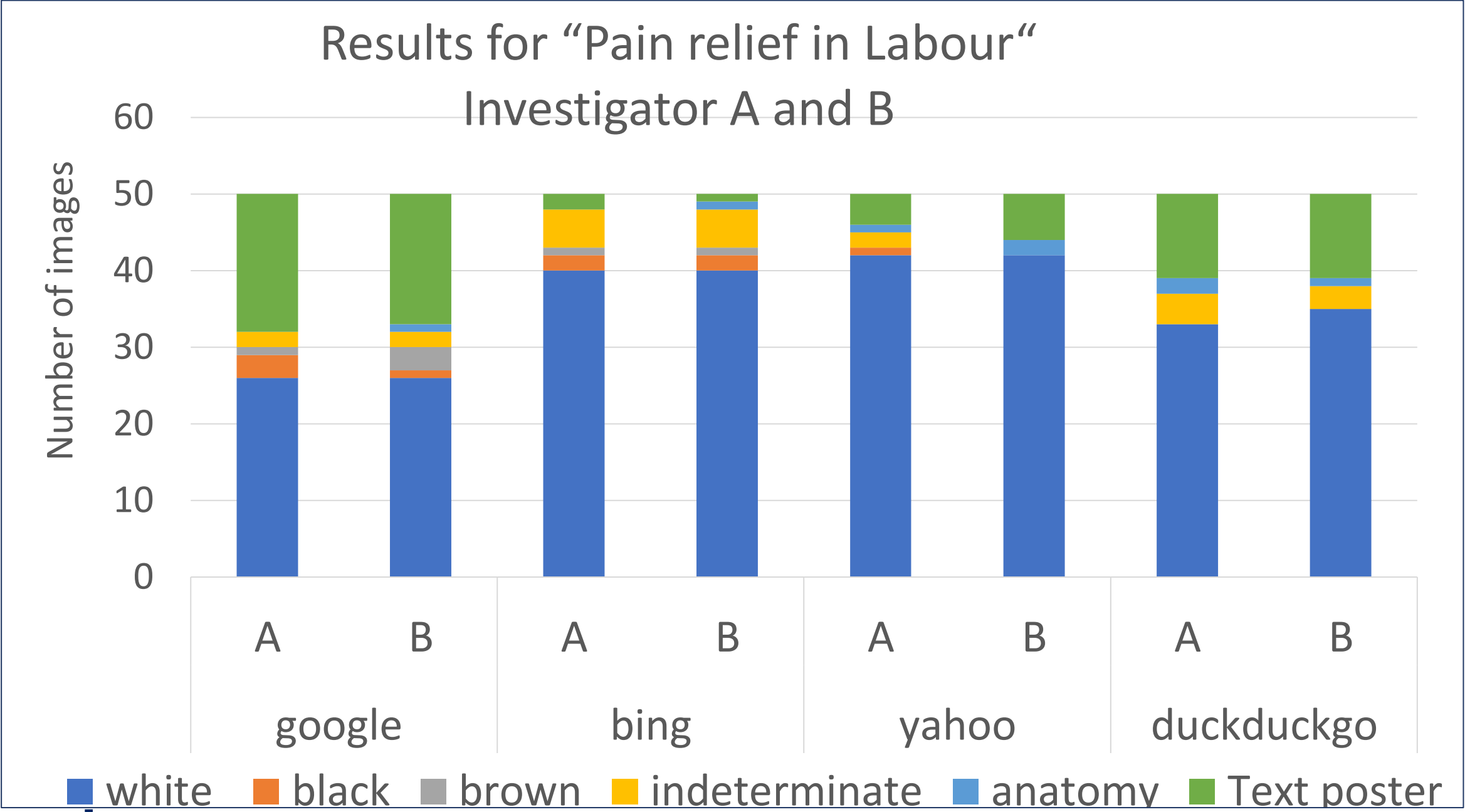
Search terms	Classification of image (N=200)					
	n (%)					
	White	Black	Brown	Indeter- minate	Anatomy pictures	Text based pictures
Epidural side effects	79 (40)	3 (2)	3 (2)	12 (6)	34 (17)	69 (35)
Epidural labour NHS	107 (53)	5 (3)	10 (5)	21 (10)	23 (12)	34 (17)
Epidural during labour	128 (64)	3 (2)	6 (3)	14 (7)	44 (22)	5 (3)
Effects of epidural	60 (30)	3 (2)	3 (2)	16 (8)	50 (25)	68 (34)
Birthing pain relief	139 (70)	9 (5)	2 (1)	20 (10)	0	30 (15)
Pain relief for labour	143 (72)	5 (3)	3 (2)	11 (6)	4 (2)	34 (17)

Six common search terms were identified:

- “epidural side effects” “effects of epidural”
- “birthing pain relief” “pain relief for labour
- “epidural labour NHS “ “epidural during labour”

For a majority of the search terms, the common finding was that there were very few pictures of black or brown skinned women (between 0-10%) ,whereas the images depicting white skinned women was represented between 30-70% of the time. There was a good correlation between the classification done by the two investigators as shown in Fig. 1 for one search phrase

Figure 1



Discussion

Our study has highlighted the possible bias that is introduced at this early stage of online information gathering by the woman. The findings of disparities in obstetric anaesthesia[3] has reiterated the need to ensure information is readily accessible, easily understandable and inclusive to all women, regardless of ethnicity, cultural or social backgrounds. Accessible information may help women make choices that improve their anaesthetic and pregnancy outcomes.

A drawback to our analysis is the assumption that skin colour infers ethnicity, when the latter term usually encompasses other factors including culture, ancestry, religion, physical appearance. The overlap of anatomy pictures, printed material and images may have contributed to the small difference in the findings recorded by the two investigators.

References

- Knight M, Bunch K, Patel R et al (Eds.) on behalf of MBRRACE-UK. Saving Lives, Improving Mothers' Care Core Report - Lessons learned to inform maternity care from the UK and Ireland Confidential Enquiries into Maternal Deaths and Morbidity 2018-20. Oxford: National Perinatal Epidemiology Unit, University of Oxford 2022.
- Fernandez Turienzo C, Newburn M, Agyepong A. *et al.* Addressing inequalities in maternal health among women living in communities of social disadvantage and ethnic diversity. *BMC Public Health* 21, 176 (2021).
- Bamber JH, Goldacre R, Lucas DN, Quasim S, Knight M. A national cohort study to investigate the association between ethnicity and the provision of care in obstetric anaesthesia in England between 2011 and 2021. *Anaesthesia*. 2023 Mar 9.

* Part of group that received OAA grant to studying ethnic disparities in obstetric anaesthesia using national maternity datasets – recently published in Anaesthesia [3] <https://doi.org/10.1111/anae.15987>