

Exposing racial bias in midwifery education: a content analysis of images and text in *Myles Textbook for Midwives*

Mairi Harkness, Chlorice Wallace

ORIGINAL

Background

Race is well documented as a key factor in perinatal outcomes for women and babies. In the UK, Black women are four times more likely to die during childbirth and Black babies have a 121 per cent increased risk of stillbirth and a 50 per cent increased risk of neonatal death when compared to babies of White ethnicity (Draper et al 2018, Knight et al 2020). Serious morbidity is far higher in all groups of women and babies who do not identify as White (Lindquist et al 2013, Draper et al 2018). The reasons for this are multiple, complex and poorly understood.

There is no doubt that racism and racial bias are present in nursing and midwifery practice and education in the UK (Hunt & Richens 1999, Burnett et al 2020, Horn 2020, Lord 2020), but it is rarely called out or openly discussed and is mostly invisible to White people, although never to Black, Asian and minority ethnic colleagues (Burnett et al 2020). When racism is invisible to so many people it is often because it has become normal and ordinary and this lack of acknowledgment makes it particularly difficult to address (Delgado & Stefancic 2012).

Inherent racial bias has been identified in learning materials used by health care professionals (Byrne et al 2003, King & Domin 2007, Martin et al 2016, Tsai et al 2016, Louie & Wilkes 2018, Sadker 2021). The representation of White bodies as the norm and 'othering' of those who are not White not only reinforces power imbalance and hegemonic Whiteness, but it may also directly impact disparity in clinical outcomes (Louie & Wilkes 2018).

Delgado & Stefancic (2012:7-8) contend that race is socially constructed and has no correspondence with biological or genetic reality. In health care settings, categorising people according to race can risk misrepresenting their clinical need: skin colour, as opposed to race, is an important clinical indicator. Everett et al (2012:7) note the need for individualised care that takes this into account when assessing for jaundice, pallor, cyanosis and the blanch response, and during assessment of wounds for colour change that might indicate healing, worsening or infection.

Ménage et al (2021) describe teaching as historically skewed towards those with light skin tones, leaving midwives with a knowledge gap around detection of clinical signs on darker skins. Sommers (2011) in warning against the danger of well-intentioned 'colour blindness' advocates for 'colour awareness': skin colour is relevant to health and should not be ignored.

Myles Textbook for Midwives is the best-selling midwifery textbook globally. The most recent edition was published in July 2020 (Marshall & Raynor 2020) and is described as 'the seminal textbook of midwifery for over 60 years' (Elsevier 2020). Midwifery textbooks are integral to midwifery education and practice: they not only reflect curriculum but also present implicit and explicit discourses and narratives that reveal dominant ideology and hierarchies within the profession (Harkness & Cheyne 2019).

The most recent edition of *Myles Textbook for Midwives* (Marshall & Raynor 2020) was analysed in order to explore and understand its representation of race and skin colour.

Methods

This work is a content analysis of text and images in *Myles Textbook for Midwives* 17th edition (Marshall & Raynor 2020), with the aim of determining how people of different races and skin colours are represented in the textbook and whether the identified content is clinically relevant to people of all skin colours.

Identification and analysis of images: photographs and illustrations

A simple content analysis of the frequency and context of representation of people of different skin colours and race in images and photographs was undertaken. The analysis drew from the work of Louie & Wilkes (2018) and Martin et al (2016).

All images and photographs of people where a face is visible, and all images of any other body part with visible skin, were selected. The images were then categorised according to the skin colour/tone and racial group of the people represented.

Race was categorised as either White or person of colour. This was determined according to observable (perceived) characteristics such as skin colour/ complexion, hair texture and colour, eye colour and facial features (Roth 2012 cited in Martin et al 2016, Louie & Wilkes 2018).

People of colour (PoC) included people who are Black, Asian, Latino, Native-American and of multi-race. Skin tone was categorised as light, medium or dark using the Massey-Martin skin colour guide (cited by Louie & Wilkes 2018) and the neonatal skin colour scale developed by Maya-Enero et al (2020).

A simple analysis was undertaken, and descriptive statistics produced. In addition, the images were categorised according to the criteria shown in Table 1.

Table 1. Categorisation of images

Category of image	Category definition
Depiction	Image depicts a physical condition/phenomenon of mother or newborn. For example: cleft palate, <i>striae gravidarum</i>
Physiological	Image depicts a specific aspect of physiology. For example: fetal position in labour
Demonstration	Image shows demonstration of a clinical skill or activity. For example: palpation, perineal suturing
Illustrative	Image depicts activity directly relevant to the chapter/topic. For example: family, birth partner
General	Image has no specific link to the chapter or topic. For example: a mother and baby with no specific context

Identification and analysis of relevant text

In addition to analysis of images, a content analysis of all in-text references to skin colour made in relation to clinical assessment or treatment was undertaken.

Manual reading of the textbook identified words associated with skin colour and tone or used to depict a clinical description or condition strongly associated with skin colour or tone. An electronic search was conducted to identify any additional missed text.

Content analysis of text

All text that referred to skin colour in the context of clinical assessment and/or treatment was identified and included for analysis. The texts were then analysed from a clinical perspective to determine whether they applied to women and babies of all skin colours and what the clinical implications, if any, were if they did not.

Two midwives who work in maternity units serving diverse populations in the UK and who are familiar with the clinical care of women and babies with different skin colours, categorised the text excerpts using the guide in Table 2.

Table 2: Guide for categorising text excerpts

Thinking about the references to skin colour within the following extracts of text, how does this inform care of babies or mothers with different skin colours?	This applies only to babies or mothers with lighter skin This applies more to babies or mothers with lighter skin This applies to all babies or mothers equally, regardless of their usual skin colour This applies more to babies or mothers with darker skin This applies only to babies or mothers with darker skin
Does this text excerpt refer to a condition or situation that is mild, moderate or severe?	Mild: unlikely to cause serious morbidity Moderate: holds some potential for serious morbidity Severe: holds significant potential for serious morbidity or mortality

Ethical considerations

This work did not require formal ethical approval.

Limitations

The images were categorised according to the researchers' perceptions of the race of the people depicted and we acknowledge that that may not be the same as the race with which those people identify. The concept of race is socially constructed and not

based on any biological or genetic reality (Delgado & Stefancic 2012, Martin et al 2016) and determining someone's race solely from an image will always be subjective and imprecise. That said, the work is a necessary analysis and follows precedent of other published research.

Only one textbook was analysed and the findings do not tell us anything about other midwifery textbooks or educational materials. It is also impossible to say from this work how different people will apply their own interpretation and understanding of the text and images to clinical practice. However, *Myles Textbook for Midwives* is the world's bestselling midwifery textbook and the edition analysed was published in 2020, a time when there was heightened awareness of, and focus on, racial disparity in perinatal outcomes. As such, the work gives valuable insight to a prominent and important source of midwifery education that many midwives will use as a primary learning resource.

Findings

Content analysis of images

In total 103 illustrations depicting 262 people (adults and babies), and 67 photographs showing 108 people (adults, babies and children) were included.

The analysis found that the images used in *Myles Textbook for Midwives* (Marshall & Raynor 2020) overwhelmingly represent light-skinned people of White European appearance. Among the illustrations the only PoC depicted were all shown in just one figure, a reproduction of a World Health Organization (WHO) infographic: 'Ten steps to successful breastfeeding' (WHO 2019, Marshall & Raynor 2020:684). All other illustrations depict light-skinned White people.

Photographs were more representative, with 81 per cent showing White people and 84 per cent people with light-coloured skin.

It is of note that the prominent photographs used on the front and inside cover are far more diverse than those inside the textbook. One photograph on the cover was excluded as it was too small to analyse. Of the five photographs included four show PoC, and of the 13 adults, children and babies seven (54%) are White and six (46%) are PoC.

The analysis also classified each image according to five defined categories (Table 1), finding that almost all illustrations included for analysis were used to depict clinical care and almost all were in the categories 'physiological' and 'demonstration'. All images in those two categories depicted light-skinned adults, babies and children with White European features.

Although the photographs were more diverse overall, PoC were more likely to be depicted in an image in

the 'general' category, that had no specific link to the chapter or topic. Considering all photographs showing White people, eight per cent were in the 'general' category but for PoC this was 38 per cent.

Content analysis of in-text references to skin colour

All text that referred to skin colour in the context of describing clinical assessment and/or treatment was identified and analysis undertaken to establish whether they were clinically relevant to people of all skin colours. In total 62 pieces of text were included for analysis.

The analysis found that most references to text excerpts were either in category 1: 'this applies only to babies or mothers with light skin', or category 2: 'this applies more to babies or mothers with light skin': 48/62 (84%) for Reviewer 1, and 35/62 (57%) for Reviewer 2. One text excerpt was categorised by one of the reviewers as being category 4: 'this applies more to babies or mothers with darker skin' and the remaining text excerpts were assessed as being category 3: 'this applies to all babies and mothers regardless of their skin colour/tone'.

Most of the text excerpts were categorised as referring to conditions that were moderate: 'holds some potential for serious morbidity', or severe: 'holds significant potential for serious morbidity or mortality' (73 per cent for Reviewer 1 and 60 per cent for Reviewer 2). Of the 41 text excerpts where the reviewers agreed that the condition or situation could be described as 'moderate' or 'severe', 32 (78%) were categorised as applying only, or more, to babies or mothers with light skin.

Discussion

This work found that the images within *Myles Textbook for Midwives* (Marshall & Raynor 2020) overwhelmingly depict people who are of light-skinned White European appearance, and that when PoC are represented they are more likely to feature prominently but less likely to be included in images that depict a clinical skill or situation directly relevant to the topic under discussion.

The ethnicity of the UK population varies greatly across its countries and regions: in Scotland 96 per cent of people identify as White, compared to 44.9 per cent in London (UK Government 2018, Scotland's Census 2021). *Myles Textbook for Midwives* is published in the UK and sold internationally yet the images in the textbook do not represent the diversity in race and skin colour of the people who will use the book, or the people who they are learning about.

Sadker (2021) describes 'cosmetic bias' as a form of bias where there is different representation in prominent imagery than the overall textbook. This gives the illusion of equity but suggests that minimal efforts have been made to address diversity

throughout. The positioning of PoC in prominent images, particularly on the front and inside cover, indicates a superficial attempt to address the book's general failure to provide representative imagery in the illustrations and photography.

Analysis of the text mirrored analysis of the images in finding that information about clinical assessment focuses on people with light-coloured skin. The combined findings demonstrate uneven representation, with light-skinned White people presented as the 'typical' norm on which teaching is based. This not only negates the experience of people outside the dominant White category but evidence also suggests that lack of diversity and uneven representation in educational resources may impact patient care delivery and contribute to racial inequality in health care experience, treatment and outcomes (Byrne et al 2003, Martin et al 2016, Louie & Wilkes 2018).

Lack of diversity within textbooks can reinforce assumptions about the 'typical patient' and Louie & Wilkes (2018:41) note that, when white bodies are normative, ability to identify signs of disease in other racial groups may be impeded, resulting in diagnostic inequities.

Most text excerpts were categorised by both reviewers as applying mostly or only to people with lighter skin. However, the two reviewers did not always agree in their assessment of individual pieces of text. That two experienced clinical midwives differed in their understanding of text in relation to assessment of skin colour is an important finding in itself and led to further examination, discussion and consideration of the texts in the context of available evidence.

Much of the information provided by the textbook in relation to skin colour is highly subjective. Skin colour and tone varies across a large spectrum. Signs of jaundice, cyanosis and pallor rely on an assessment of skin colour but are recognised as having different characteristic appearances in different ethnic groups and there is conflicting evidence around how best to recognise them (Szabo et al 2004, Kanji et al 2017, Stephen et al 2021).

Midwives must understand differences in usual colour of healthy skin, and difference in signs that indicate deviation from normal, in order to provide safe and appropriate care to all — yet this is rarely discussed explicitly within the text. Many of the text excerpts directed the reader to assess 'colour' without providing any other information about what that colour should be. For example:

'and the woman's overall colour and complexion [referring to signs of wellbeing]' (Marshall & Raynor 2020:721).

'if the baby has poor colour and muscle tone

[resuscitation of health baby at birth]' (Marshall & Raynor 2020:853).

Using phrases such as 'assess colour' or 'poor colour' become problematic when the reader's main point of reference throughout the textbook is a White person with light-coloured skin.

Other excerpts were more explicitly problematic in their failure to describe conditions in a way that would allow the reader to identify clinical problems in people with darker skin colour:

'Sign: Appearance (colour): Score: 0-pale or blue; 1-body pink; extremities blue; 2-completely pink' [Apgar score] (Marshall & Raynor 2020:849).

'Skin: Gelatinous, red, translucent; Smooth, pink, visible veins; Cracking, pink areas, rare veins' [assessment of healthy low birth weight baby – signs of physical maturity: skin] (Marshall & Raynor 2020:865).

Visual assessment of skin colour is subjective, with this subjectivity further complicated by variation of usual skin colour. The extent to which skin appears 'pink', 'red', 'blue', 'yellow', 'grey' or 'white' varies depending on a person's usual skin colour and the subjective assessment of the person examining them.

Many commonly used medical words and the concepts behind them are founded on an assessment of light-coloured skin: cyanosis from Greek 'Kyaneos' meaning blue, and jaundice from the French 'jaune' meaning yellow. The pieces of text that discuss assessment and treatment based on skin colour or tone, often in relation to life-threatening situations such as resuscitation or major haemorrhage, rarely provided information about what 'colour' or 'cyanosis' or 'pallor' or 'jaundice' look like if a person does not have light-coloured skin.

When usual skin colour was mentioned references were brief, of limited value and positioned people with darker skin as different. They often reverted to describing a light-skinned norm within the section or chapter. For example:

'Clinical recognition and assessment of jaundice can be difficult, especially in babies with dark skin tones. In the UK, the use of a transcutaneous bilirubinometer (TCB) is recommended to measure the bilirubin level' (Marshall & Raynor 2020:932).

'Unconjugated bilirubin is fat soluble and will deposit in subcutaneous fat, which makes the skin appear yellow' (Marshall & Raynor 2020:933).

The evidence base around the use of TCB for people with darker skin is contradictory. Although its use is considered more effective than visual clinical assessment, not all types of TCB are effective for all skin colours (Szabo et al 2004). Historically, people from Black, Asian or minority ethnic backgrounds have been underrepresented in clinical and health

research, limiting the validity and generalisability of studies that ostensibly apply to the whole population (Redwood & Gill 2013). This contributes to lack of understanding around the need for different approaches to clinical assessment and a deficit of evidence available to inform the care of people with darker skin.

If understanding around difference in skin colour is not included in midwifery educational resources midwives become reliant on individual experience to develop their understanding. Disparity in effective learning opportunities, given the large difference in ethnic mix across the countries and regions of the UK, puts at risk the provision of safe, effective and equitable care for all women and babies.

Reluctance to identify and discuss difference in skin colour may arise from well-intentioned colour blindness, in the mistaken belief that equity of care means ignoring skin colour. However, equitable care requires the opposite: colour awareness, explicit acknowledgment and explanation of difference (Sommers 2011).

Structural racism describes institutional practices that benefit White people and disadvantage PoC: it is present throughout society and midwifery education is no exception. When education focuses on a light-skinned norm clinical disadvantage for those with darker skin manifests in many ways: from recognition of perineal trauma, signs of domestic abuse and wound healing, through to identifying jaundice, cyanosis or pallor (Sommers 2011, Everett et al 2012). It is this structural racism, not race, that puts people at risk (Hardeman et al 2016, Crear-Perry 2021).

Personal communication with the editors of *Myles Textbook for Midwives* made clear that they are aware of the issues raised here and are committed to working with the publisher to address them in future editions.

Conclusion

Black people and PoC are at greatly increased risk of harmful perinatal outcomes. The reasons for this are multiple and complex and must be identified and addressed. This work found that *Myles Textbook for Midwives*, the most popular and widely used midwifery textbook in the world, presents white bodies as the norm in text and images and fails to provide information that is relevant to the clinical assessment of mothers and babies with darker skin.

Structural racism is ubiquitous throughout society and its manifestation in midwifery education may be a contributing factor to the current disparity in outcomes. Local efforts to decolonialise curricula and learning materials are to be welcomed, however much more is required. Concrete efforts to identify and root out racial bias at all levels of midwifery education are

necessary, and this must happen alongside addressing the current lack of evidence to support practice.

Using the terms ‘racism’ and ‘racial bias’ may feel uncomfortable, particularly when individuals are, in fact, committed to treating people equally, but if a problem is not identified and named it cannot be addressed. Positive change is only possible when underpinned by understanding that it is racism, not race, that puts women and babies at risk.

Acknowledgments

We would like to thank Nahida Hanif and Memuna Sowe for their substantial contribution to this work. Thanks also to Professor Helen Cheyne for her support and advice.

Authors

Submitting author

Dr Mairi Harkness PhD RM, Research Fellow NMAHP Research Unit, University of Stirling, Scotland. Email: mairi.harkness@stir.ac.uk. Twitter: @MairiHarkness

Co-author

Chlorice Wallace MSc RM, Midwifery Practice Facilitator, Princess Royal University Hospital (King's College Hospital), Orpington, England.

References

- Burnett A, Mooney C, Grant J, Kahin M, Sagoo R, Rivers E, Deravin L, Darbyshire P (2020). Dismantling racism in education: in 2020, the year of the nurse & midwife, “it’s time”. *Nurse Education Today* 93:104532.
- Byrne MM, Weddle C, Davis E, McGinnis P (2003). The Byrne guide for inclusionary cultural content. *Journal of Nurse Education* 42(6):277-81.
- Crear-Perry J (2021). *Writing & features*. <https://www.joiacrearperry.com/writing-features> [Accessed 1 April 2022].
- Delgado R, Stefancic J (2012). *Critical race theory: an introduction*. 2nd ed. New York, NY: New York University Press.
- Draper ES, Gallimore ID, Kurinczuk JJ, Smith PW, Boby T, Smith LK, Manktelow BN, on behalf of the MBRRACE-UK Collaboration (2018). *MBRRACE-UK perinatal mortality surveillance report, UK perinatal deaths for births from January to December 2016*. Leicester: The Infant Mortality and Morbidity Studies, Department of Health Sciences, University of Leicester. <https://www.npeu.ox.ac.uk/assets/downloads/mbrance-uk/reports/MBRRACE-UK%20Perinatal%20Surveillance%20Full%20Report%20for%202016%20-%20June%202018.pdf> [Accessed 26 May 2022].
- Elsevier (2020). *Myles textbook for midwives, 17th edition*. <https://www.uk.elsevierhealth.com/myles-textbook-for-midwives-9780702076428.html#description> [Accessed 1 April 2022].
- Everett JS, Budescu M, Sommers MS (2012). Making sense of skin color in clinical care. *Clinical Nursing Research* 21(4):495-516.
- Hardeman RR, Medina EM, Kozhimannil KB (2016). Structural racism and supporting black lives — the role of health professionals. *New England Journal of Medicine* 375(22):2113-5.

- Harkness M, Cheyne H (2019). Myles textbook for midwives 1953 and 2014, a feminist critical discourse analysis. *Midwifery* 76:1-7.
- Horn A (2020). Racism matters: 1. 'When people show you who they are, believe them': why black women mistrust maternity services. *Practising Midwife* 23(8):15-17.
- Hunt SC, Richens Y (1999). Unwitting racism and midwifery. *British Journal of Midwifery* 7(6):358.
- Kanji R, Schneider HJ, Pontin M (2017). Brown-colored buccal mucosa associated with methemoglobinemia. Cyanosis appears different in varying ethnic groups. *Visual Diagnostics in Emergency Medicine* 52(5):e209-11.
- King D, Domin DS (2007). The representation of people of color in undergraduate general chemistry textbooks. *Journal of Chemical Education* 84(2):342-5.
- Knight M, Bunch K, Tuffnell D, Shakespeare J, Kotnis R, Kenyon S, Kurinczuk JJ eds, on behalf of MBRRACE-UK (2020). *Saving lives, improving mothers' care - lessons learned to inform maternity care from the UK and Ireland Confidential Enquiries in Maternal Deaths and Morbidity 2016-18*. Oxford: National Perinatal Epidemiology Unit, University of Oxford. https://www.npeu.ox.ac.uk/assets/downloads/mbrance-uk/reports/maternal-report-2020/MBRRACE-UK_Maternal_Report_Dec_2020_v10_ONLINE_VERSION_1404.pdf [Accessed 1 April 2022].
- Lindquist A, Knight M, Kurinczuk JJ (2013). Variation in severe maternal morbidity according to socioeconomic position: a UK national case-control study. *BMJ Open* 3(6):e002742. <http://dx.doi.org/10.1136/bmjopen-2013-002742> [Accessed 1 April 2022].
- Lord M (2020). Racism matters: 4. It's time to tell the truth: action needed to support black people in maternity. *Practising Midwife* 23(11):12-15.
- Louie P, Wilkes R (2018). Representations of race and skin tone in medical textbook imagery. *Social Science & Medicine* 202:38-42.
- Marshall J, Raynor M eds (2020). *Myles textbook for midwives*. 17th ed. Edinburgh: Elsevier.
- Martin GC, Kirgis J, Sid E, Sabin JA (2016). Equitable imagery in the preclinical medical school curriculum: findings from one medical school. *Academic Medicine* 91(7):1002-6.
- Maya-Enero S, Candel-Pau J, Garcia-Garcia J, Giminéz-Arnau AM, López-Vilchez MÁ (2020). Validation of a neonatal skin color scale. *European Journal of Pediatrics* 179(9):1403-11.
- Ménage D, Chapman M, Raynor M, Essat Z, Wells R (2021). Decolonising midwifery education part two: neonatal assessment. *Practising Midwife* 24(6):44-9.
- Redwood S, Gill PS (2013). Under-representation of minority ethnic groups in research – call for action. *British Journal of General Practice* 63(612):342-3.
- Sadker D (2021). *Some practical ideas for confronting curricular bias*. <https://www.sadker.org/curricularbias.html> [Accessed 1 April 2022].
- Scotland's Census (2021). *Ethnicity*. <https://www.scotlandscensus.gov.uk/census-results/at-a-glance/ethnicity/> [Accessed 1 April 2022].
- Sommers MS (2011). Color awareness: a must for patient assessment. *American Nurse Today* 6(1):6.
- Stephen E, Abdelhady I, Al-Aufi A, Al-Mawaali H, Al-Wahaibi K (2021). Missing limb ischemia in dark-skinned patients: the badinjal sign. *Indian Journal of Vascular & Endovascular Surgery* 8(1):102-4.
- Szabo P, Wolf M, Bucher HU, Haensse D, Fauchère JC, Arlettaz R (2004). Assessment of jaundice in preterm neonates: comparison between clinical assessment, two transcutaneous bilirubinometers and serum bilirubin values. *Acta Paediatrica* 93(11):1491-5.
- Tsai J, Ucik L, Baldwin N, Hasslinger C, George P (2016). Race matters? Examining and rethinking race portrayal in preclinical medical education. *Academic Medicine* 91(7):916-20.
- UK Government (2018). *Regional ethnic diversity*. <https://www.ethnicity-facts-figures.service.gov.uk/uk-population-by-ethnicity/national-and-regional-populations/regional-ethnic-diversity/latest> [Accessed 1 April 2022].
- World Health Organization (WHO) (2019). *Ten steps to successful breastfeeding*. <https://www.who.int/multi-media/details/ten-steps-to-successful-breastfeeding> [Accessed 31 May 2022].

Harkness M, Wallace C. MIDIRS Midwifery Digest. September 2022, vol 32, no 3, pp 305-310.

Original article. © MIDIRS 2022.

For more information on these topics please see search packs: M4 pre-registration education; M96 institutional racism.