

## Race and prescribing

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**Summary** Treatment of mental illness in Black and minority ethnic groups differs from that in the White majority. Large differences in admission, detention and seclusion rates have been recorded. These disparities extend into the physical healthcare setting, particularly in the USA but also within the UK National Health Service. There are many influences on prescribing of psychotropic medication, not least the metabolising capacity of the individual. Ethnic differences do occur, particularly for East Asian peoples. However, these differences are broadly similar across ethnic groups, particularly for the cytochrome P450 enzymes responsible for metabolising psychotropic medicines. Psychotropic medication prescribing also differs by ethnicity. Specifically, antipsychotic dose, type and route of administration may differ. However, most data originate in the USA and UK studies have not replicated these findings, even after controlling for multiple confounding factors. Similarly, antidepressant prescribing and access to treatment may differ by ethnicity. These differences may have complex causes that are not well understood. Overall, prescribing of antipsychotics appears to be broadly equitable in Black and minority ethnic groups.

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Treatment of mental illness in Black and minority ethnic groups differs from that in the majority.<sup>1</sup> Large differences in admission, seclusion and detention rates have been measured for different ethnicities – particularly when data from Black and White patients are compared. Specifically, Black patients are almost four times more likely to be detained under the Mental Health Act,<sup>2</sup> up to nine times more likely to be admitted into hospital.<sup>3</sup> Black people also have a longer length of admission<sup>3</sup> and are almost eight times more likely to be treated on a high-security ward.<sup>4</sup> These differences have complex, often multifactorial causes and have been attributed to misdiagnosis, delays in seeking and receiving treatment, higher incidences of, and exposure to, risk factors for psychosis,<sup>5</sup> and discrimination. Despite the Department of Health's numerous recommendations in its *Delivering Race Equality*<sup>1</sup> and *Inside Outside*<sup>6</sup> reports, these differences continue to exist and, accepting the inherent limitations of data collected from a cross-sectional survey, are not improving.<sup>3</sup> Ultimately, these findings have led to accusations, vociferously rejected by many,<sup>7–9</sup> of institutional racism in mental health services.<sup>10</sup>

### Race and physical healthcare

Differences in the provision of health services to Black and minority ethnic groups can also extend into physical healthcare.<sup>6</sup> Access to treatment may be affected by ethnicity, particularly in the USA but also within the

equitable UK healthcare system. Examples of UK healthcare inequality include reduced cervical cancer screening and reduced rates of coronary angioplasty in South Asian populations.<sup>11,12</sup> There are numerous well-documented differences in the medical treatment of Black and minority ethnic patients in the USA, particularly for Black compared with White patients, even after accounting for medical insurance status. Examples include poorer outcome and treatment of colorectal cancer<sup>13</sup> and less frequent use of newer drugs for ischaemic stroke.<sup>14</sup>

### Race and metabolism of psychotropics

Prescribing in psychiatry differs by race for a variety of reasons, not least because genetic variation can affect the metabolism of psychotropics. Many psychotropics are metabolised by the hepatic cytochrome P450 (CYP450) enzymes – a family of enzymes initially developed by animals over billions of years to detoxify plant toxins. This enzymatic system includes over 40 different enzymes but only 6 are responsible for almost all drug metabolism. Some of these enzymes are subject to genetic polymorphism and Black and minority ethnic groups have variants of these isoenzymes with different, often slower, activity. Specifically, CYP2D6, CYP2C9 and CYP2C19, enzymes that are important in metabolising numerous antidepressants, antipsychotics and benzodiazepines, can be polymorphic. This means that some populations may metabolise

psychotropics more slowly than others resulting in higher plasma levels. Determining the effects of genetic polymorphism on CYP450 enzymes is difficult, as even inter-ethnic differences can be marked – in Black individuals, poor metabolism of CYP2D6 occurs in 1.8% of Ethiopians compared with 19% of South Africans.<sup>15</sup> Overall, there are probably fewer people with poor metabolism of CYP2D6 and CYP2C9 in Asian and Black populations than in White populations,<sup>16</sup> and a greater proportion of East Asians than Black and White people with poor metabolism of CYP2C19.<sup>17,18</sup> Ultra-extensive and intermediate metabolisers also exist and proportions of these also vary by ethnicity: for instance, over 50% of Asian people have intermediate metabolism of CYP2D6.<sup>15</sup> Although one would expect that genetic polymorphism of CYP450 enzymes would have an important effect on dosing of psychotropics for Asians, it does not explain differences in prescribing between other ethnic groups. That is not to say that metabolising ability has no effect on dosing or adverse effects of medication (indeed, those with poor metabolism of CYP2D6 have a greater risk of developing tardive dyskinesia and experiencing extrapyramidal side-effects<sup>17</sup>), but that an individual's own metabolising ability may be more important than their ethnicity alone. Currently in the UK, determining CYP450 polymorphisms is prohibitively expensive and is usually only possible within a clinical trial.

### Race and psychotropic prescribing

Are there differences in prescribing of psychotropics in Black and minority ethnic groups that relate to prejudice rather than metabolism? Patients and carers seem to think so,<sup>6,19</sup> and, after the inquiry into the death of David Bennett,<sup>20</sup> the issue needed investigation.<sup>1</sup>

Most of the studies examining psychotropic use by ethnicity have been completed in the USA. Differences in antipsychotic treatment by ethnicity include: an increased likelihood of receiving an antipsychotic,<sup>21–23</sup> higher doses,<sup>24–26</sup> older drugs<sup>27,28</sup> and more frequent use of depot formulations.<sup>29</sup> Again, these differences are pronounced for Black compared with White patients. These studies analysed mostly large US databases and adjusted for only a few confounding factors affecting the prescribing of antipsychotics; many did not adjust for health insurance status. The healthcare systems of the UK and the USA differ markedly and have a profound effect on access to, and receipt of, treatment.

There are few UK studies examining ethnicity and antipsychotic use. One survey<sup>30</sup> found no significant differences (after adjustment for five confounding variables) in doses of antipsychotics taken by Black and White patients. However, Black patients were more likely than White patients to be receiving a depot antipsychotic and at a significantly higher dose. Our cross-sectional surveys of antipsychotic prescribing quality and ethnicity have included large numbers of patients from three NHS trusts and accounted for multiple confounding factors.<sup>31,32</sup> We found no significant differences between Black and White patients for antipsychotic dose, high dose (>100% of maximum dose) or type (typical or atypical) prescribed, even after adjustment for over 20 different confounding

factors. However, both higher costs of antipsychotic medication and polypharmacy (>1 antipsychotic prescribed) were significantly more likely in Black patients.<sup>31</sup>

Antidepressant treatment may also vary by ethnicity. Black and Asian patients, especially those living in areas of high ethnic density, are less likely than White patients to access care for depression<sup>33</sup> and to be prescribed an antidepressant.<sup>34,35</sup> Moreover, even in vascular disease, where depression is associated with higher mortality, rates of antidepressant use are much lower in Black compared with White patients even after adjustment for depression severity.<sup>36</sup> On the other hand, a study of psychiatrists' assessments of video vignettes of late-life depression in individuals who differed by gender and race (African American or White) found no differences in diagnosis or treatment.<sup>37</sup> This suggests that factors other than bias by race are also important. Racial differences in acceptability<sup>38</sup> of use of antidepressants have been cited as a potential cause of these findings. However, antidepressant stigma appears to be greater in White compared with Black patients.<sup>39</sup>

### Conclusions

It is clear that there is quite some way to go before UK health services provide equal treatment to all minority ethnic groups. However, prescribing of antipsychotics appears overall to be broadly equitable in minority ethnic groups. Further investigation of the potentially complex and numerous reasons for these differences is urgently needed.

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