How do Disparities in the Criminal Justice System and Medical Settings Shape Decision-Making?

Anita Abbey[1] (Trainee Clinical Psychologist)

Candidate Registration Number: 100373509

Primary Supervisor: Dr Peter Beazley[1]

Secondary Supervisor: Dr Ian Edwards[2]

[1]*Department of Clinical Psychology, University of East Anglia, Norwich, UK*

[2] *School of Law, University of East Anglia, Norwich, UK*

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University of East Anglia

Faculty of Medicine and Health Sciences

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Thesis Portfolio Abstract

Background

Research evidence exists for the presence of disparities in decision-making for professionals from both the healthcare and legal sectors. In health settings, physical attributes, such as service-user race, have been suggested to evoke disparate decisions in professionals. Legal professionals, including jurors, have also been reported to exhibit varied perceptions of expert witnesses based on their attributes, which has also been suggested to negatively impact upon their decision-making.

Methods

The systematic review included in the thesis portfolio searched literature within scientific journals on the topic of racial disparities in healthcare workers' decision-making. A narrative approach was used to synthesise data from quantitative studies. The empirical study employed a mock jury stimulation trial to assess: credibility ratings given to an expert witness based on their characteristics (i.e., profession and race), and how these credibility ratings impact on jurors' verdict decision-making.

Results

Eleven studies met the inclusion criteria for the systematic review. Overall, research findings were mixed. Evidence for the presence of racial disparities was more evident for healthcare professionals' decisions in the following areas: treatment recommendations, symptom severity and attribution of symptom cause, in favour of White patients. There was weaker evidence in support of the existence of racial disparities in healthcare professionals for diagnostic and

prescriptive decisions. Findings from the empirical study suggest that jurors' decisions in relation to the perception of credibility did not vary based on expert witness race or profession. However, jurors' decisions in relation to verdict sentence did vary, based on an expert's profession and/or credibility rating.

Conclusions

Findings from this thesis portfolio highlight the need for more research to be conducted that focuses on racial disparities in decisions made by both healthcare professionals and jurors. More research is particularly needed in this area to build on existing knowledge about biases, plus other factors that may act as mechanisms which generate disparate decisions in both settings.

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Chapter 1

Introduction to Thesis Portfolio

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Introduction to Thesis Portfolio

Biases

The attitudes and beliefs held by professionals from various backgrounds has been at the top of the agenda for researchers attempting to understand biased practices within institutions (Hall, 2015). Institutions, such as the healthcare service and criminal justice system, have been identified as systems plagued with discriminatory practices (Gollust et al., 2018; Pager & Shepherd, 2008). Within these systems, professionals have been found to possess biases that may have an impact on their evaluations, leading to either favourable or unfavourable perspectives held towards particular groups of people (Vela et al., 2022). Professionals' biases are reported to be more pronounced when they are faced with high volumes of information, which results in them using mental shortcuts to process large amounts of complex information and make key decisions (Crisp, 2015; Lester & Visschers, 2012). These simplifying and discriminatory tendencies are often referred to as unconscious biases, as they are not consciously held (Storm et al., 2023). Biases can also be confirmatory (i.e., when an individual searches for information that supports their beliefs and ignores data contradicting them) or anchoring (i.e., when an individual focuses on a single piece of information) (Ly et al., 2023; Nickerson, 1998).

Theories Explaining Biases

The Dual Process Theory (Djulbegovic et al., 2012) is a widely accepted framework that provides an explanation for the mechanisms behind reasoning biases. This theory postulates that reasoning and decision-making rely on two competing systems: 1) an unconscious, fast, automatic, and affect-driven system; 2) a rational, slow, deliberate, and logical system. Individuals are suggested to use system one when the information being processed is of less

importance, and utilise system two when information that needs to be processed is deemed of high importance (Sladek et al., 2006). The Heuristic-Systematic Model (Chaiken & Ledgerwood, 2012), provides a further explanation for information processing, postulating that an individual's judgement, and processing of information, depends on heuristic and systematic processing modes. On the one hand, heuristic processing is believed to require lower levels of mental effort and cognitive load, and draw upon simple rules stored in long-term memory storage. On the other hand, systematic processing involves making sense of relevant information in a comprehensive and analytical manner, in a way that requires the effortful scrutiny of information (Kobayashi, 2022).

Together, both theories of dual processing suggest that individuals are more likely to use the information processing systems that place less demand on time and resources, such as system one and the Heuristic Processing System (Doherty & Carroll, 2020). These processing modes allow for quick decisions to be made when individuals are faced with the task of processing large volumes of information within short time constraints (Kobayashi et al., 2021). However, due to the shallowness and level of affect-based reasoning involved in employing these modes of thinking, individuals are more likely to be vulnerable to misleading information (Preisz, 2019). This, in turn, can lead to individuals reaching inaccurate conclusions when making decisions (Silva et al., 2023).

Disparities in Healthcare Professionals' Decision-Making

The presence of biases within the healthcare system is suggested to have a detrimental effect on quality of care and key decisions made by healthcare professionals (Featherston et al., 2020). Research suggests that professionals often hold biases towards individuals from minoritised non-White groups, which is strongly exhibited in professional-patient interactions

(Hall et al., 2015; Williams et al., 2007). Biased perspectives can lead to poorer health outcomes and negatively impact on medical decisions (Blumenthal-Barby & Krieger, 2015; Croskerry, 2002; Saposnik et al., 2016). In particular, studies have found health professionals to make biased decisions in favour of White patients in relation to psychiatric diagnosis, treatment choice, and medication prescription (Connolly & Taylor, 2016; Di Caccavo et al., 2000; Duveau et al., 2023; Duveau et al., 2024; Ezawa & Strunk, 2022; Garland et al., 2015; Kales et al., 2005a). Research has also found decisions made by professionals to be partly shaped by their perceptions and beliefs around symptom cause and severity, specifically in individuals accessing services who identify as non-White (Gushue et al., 2022; Joy & Bartholomew, 2021; Kales et al., 2005b). These disparities add to the existing barriers that individuals from racial minorities face in relation to accessing services, specifically in relation to: communicating distress, stigmatising cultural beliefs, feelings of guilt and shame, and their preference for self or community reliance (Hall et al., 2015; Mclean et al., 2003; Salaheddin, 2016).

It has been suggested that the disparate decisions made by mental health professionals is further maintained by their ongoing beliefs regarding individuals from minoritised racial backgrounds. For example, health professionals have been found to possess negative beliefs regarding the level of intelligence held by patients from minority groups (Kales et al., 2005a). This, in turn, has impacted on their treatment decisions, due to concerns about treatment adherence and the increased likelihood of being sued for malpractice (Van Ryn & Burke, 2000). The existence of racial disparities, which are partly shaped by biases held by mental health professionals, is particularly disconcerting, given the role that it plays in widening the gap of healthcare inequalities (Featherston et al., 2020). This also leads to wider ramifications, where individuals from minority groups are more likely to be undiagnosed with mental health

conditions. This is due to them spending limited time with professionals, many of whom possess an inadequate understanding of their basic needs, therefore making it less likely for them to accurately address their presenting concerns (Hall et al., 2015).

Disparities in Legal Professionals' Decision-Making

In addition to the presence of disparities within the healthcare sector, legal professionals also possess biases that can adversely influence their decisions (Gopal et al., 2021; Thomas, 2010). This finding is not particularly surprising, given the fact that the Criminal Justice System (CJS) has been identified as a well-known structure for systemic racism (Pager & Shepherd, 2008). Recent incidents, such as the death of George Floyd in May 2020, have placed the CJS under the spotlight and highlighted racial injustices that individuals from racial minority groups experience (Hodgkinson et al., 2021). Psychological research investigating the association between racial disparities and decision-making found that jurors often make biased decisions when they are required to deliberate on verdicts for Black defendants (Devine & Caughlin, 2014; Mitchell et al., 2005). An abundance of research has also found biases to play a role in jurors' perceptions of expert witnesses who are summoned to court to provide members of the courtroom with specialised expertise on matters within their field (Flick et al., 2022; Rix, 1999).

In relation to the biases that jurors possess, research has found that jurors are more likely to attribute higher levels of credibility to experts in possession of the following traits: trustworthiness, confidence, likeability, and confidence (Brodsky et al., 2009; Cramer et al., 2009). In addition to these traits, the personal characteristics associated with the expert, such as their race and profession, have been reported to further influence perceptions of expert witness credibility (Cohen & Peterson, 1981; Kipoulas et al., 2024; Mixon et al., 1995). Studies have also shown that, through the process of persuasion, highly credible expert witnesses are more

likely to have a greater impact on altering jurors' judgements (Bornstein, 2004). This can be explained, in part, due to jurors often finding expert witnesses' messages difficult to comprehend (Hans & Saks, 2018), which results in them relying on mental shortcuts (i.e., superficial features of a message) to make key decisions (Ivković & Hans, 2006). As a consequence, individuals who are represented by experts with lower credibility ratings are more susceptible to receive 'guilty' verdicts (Younan & Martire, 2021). The existence of such disparities in legal professionals' decision-making, shaped by expert witnesses' traits and characteristics, highlights the need for increased research interest in this area, due to potential ramifications in biased decision-making, leading to unfair sentencing decisions.

Research Gap

Empirical evidence exists for the presence of disparities in professionals' decisions in healthcare settings. However, research in this area that specifically focuses on racial disparities within the context of mental health settings is scarce. Hence, more research is needed on this topic to add to the existing evidence base, and further inform practices and policies that reduce disparities within the healthcare sector. In addition, a systematic review that synthesises literature on this topic matter is yet to be published.

Moreover, although research has documented the complex role that biases play in jurors' credibility ratings of experts and resulting verdicts, research that investigates this phenomenon, specifically with regard to experts with intersecting layers to their identity, remains limited. Therefore, in this area, a shift in research focus is of vital importance: it will allow for a better understanding of how experts' intersecting characteristics activates negative biases in jurors, ultimately leading to poor decision-making. Study findings can be used to inform practices and policies within the criminal justice system and further shed light on how safeguards can be

introduced to protect individuals from biases. For example, allowing for information about an expert's identity to be 'blind' during criminal proceedings.

Rationale for Thesis Portfolio

The thesis portfolio aimed to investigate the presence of disparities in professionals providing services within the healthcare sector and criminal justice system, in order to gain further insight into how biases shape decision-making. Disparities in decisions made in relation to race was a particular area of research that was integrated into both papers, due to the ongoing existence of racial stereotyping and the presence of institutional racism in society, within multiple institutions (Fiske, 2000; Griffith et al., 2007). Findings from both areas of research has the potential to raise awareness of the presence of biases that shape differential decisions made in both systems. This will increase the momentum for institutions to adopt anti-discriminatory practices in their quest towards achieving equality for individuals from minoritised groups who access and provide services.

Outline for Thesis Portfolio

This portfolio consists of two main research papers detailing findings from the: 1) systematic review of research, and 2) empirical research project. The systematic review in this portfolio included published quantitative literature studies that focused on the topic of racial disparities in decision-making amongst mental healthcare professionals. The review aimed to collate research on this topic matter using a narrative synthesis approach and to report findings in a publishable research paper format. The empirical paper within this thesis portfolio involves primary data collection that focused on providing research evidence to answer a question: Do variations in jurors' perceptions of expert witness credibility exist based on the characteristics

that experts possess? The paper further investigates whether jurors' perceptions of expert witness credibility predicts verdict decisions. The relationship between both studies is further discussed in chapters three and five, in addition to personal reflections, strengths and limitations, and the implications that have arisen from the aforementioned areas of research.

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Chapter 2

Systematic Review

Racial disparities in Healthcare Professionals' Decision-making in Individuals with Mental Health Difficulties from Different Racial Backgrounds.

Author: Anita Abbey*

Prepared for Submission to Social Science & Medicine

(Author Guidelines found in Appendix A)

*Corresponding Author: ntn21dyu@uea.ac.uk

Supervised by: Dr Peter Beazley

Department of Clinical Psychology, University of East Anglia, Norwich, NR4 7TJ, United Kingdom

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Highlights

- Racial disparities exist in some domains of healthcare professionals' decision-making.
- No racial differences were found for diagnostic and prescription decisions.
- Racial differences reported in treatment choice, attribution of symptom cause, and symptom severity.
- More international studies are needed, with a diverse and larger sample size.
- Further studies on racial disparities will help to eradicate health inequalities.

Abstract

Background

The presence of biases in healthcare workers' decision-making may play a role in further widening health inequalities. This may give rise to unfair decisions and practices being followed in services, leading to lower standards of care. Research has demonstrated that the presence of racial biases amongst clinical professionals can lead to unfair decisions. The dearth of publications in this area has resulted in this topic being less understood.

Methods

A systematic review was conducted using the following databases: E-journals, APA PsychArticles, APA PsycINFO, CINHAL, and MEDLINE. Studies were published between 1980 and 2024 and included vignette-based scenarios about individuals with various mental health conditions. Included studies manipulated the individual's race in the vignette, as part of the experimental study inclusion criteria. Professionals were required to make a clinical decision about the patient in the vignette (e.g., treatment choice, diagnosis, etc.). Eleven quantitative studies met the inclusion criteria for the review. Data was extracted from papers and quality appraised. Studies received strong to moderate quality ratings, with one study rated as weak.

Results

Results from the review suggest the presence of racial biases in professionals' decisions relating to treatment choice, symptom severity, and attribution of symptom cause. Evidence in support of the presence of biases in diagnostic and prescription decisions was much weaker.

Conclusion

More research is needed to better understand the characteristics of mental health disorders in various racial backgrounds. Further insight is needed into the origin, presence, and impact of biases on decision-making to improve patient care and widen access to individuals with mental health conditions from different backgrounds.

Keywords: *Racial disparities, bias, healthcare professionals, clinical decision-making, and mental health conditions.*

Introduction

Health Disparities

The existence of health disparities is a well-established phenomenon across the world (Beckfield et al., 2013). The term health disparity is used to denote differences and gaps in the quality of healthcare that individuals from different racial, ethnic, and socioeconomic groups experience (Riley, 2012). Healthcare differences are exemplified by an individual's social pecking order, which acts as a determinant of the position and power they hold when accessing healthcare services (Braveman, 2014). Individuals from disadvantaged groups, including those who belong to ethnic minority groups, older adult populations, and different genders, are likely to receive uneven access to services and poorer health outcomes, plus care coverage, in some countries (Riley, 2012; Woods et al., 2005). Historically, the Alma Ata Declaration was implemented to encourage governments to prioritise the provision of adequate health systems by the year 2000, providing individuals with the opportunity to be actively involved in the planning and implementation of their treatment (World Health Organization, 1978).

The goal of universal access to healthcare has been at the top of the agenda for both publicised and privatised services (Daniels, 2008). The right to health has been prioritised in services and is now widely recognised as a basic human need (World Health Organization, 1978). Although healthcare systems have worked towards reaching a stage of 'health equity' – that is, treating all patients fairly whilst prioritising the needs of those at risk of poor health (Braveman, 2014) – research has shown that inadequate access, and lack of satisfaction in services, still shapes the experience of minority groups accessing services (Garney et al., 2021).

Racial Disparities

The concept of racial disparities can be better understood by gaining insight into how racism operates in society. Racism refers to the practice of dominant racial groups categorising individuals into social groups called 'races', based on the idea of inferiority (Williams & Cooper, 2019). More widely, during acts of racism, power is often abused by dominant groups to devalue, disempower, and unequally allocate resources and opportunities to groups that are perceived as inferior or minoritised (Zambrana & Williams, 2022). The term minority, herein, is used to refer to individuals from underserved groups subjected to unequal power relations (Omi & Winant, 2014). This review will focus on the minority characteristic of race. Racial groups refer to individuals from either White or non-White backgrounds. For the purpose of this review, the non-White racial group category will consist of individuals who identify as Black, Asian, or Hispanic.

The practice of racism exists in structures, practices, and procedures that disadvantage individuals who fit into a particular racial category (Eneanya et al., 2022). Several factors have been identified that facilitate structural racist practices within healthcare systems: a non-diverse workforce, a lack of interpreters employed by services, poor access to care, and time constraints (Gollust et al., 2018). In addition, as systems operate through individuals, racial discrimination can be enacted between individuals. The act of racial discrimination often involves overt racial jokes and harassment that singles individuals out based on race. It can also involve covert verbal and behavioural exchanges that convey hostility towards racialised groups (Sue et al., 2007). Racial discrimination exhibited interpersonally is suggested to play a key role in disparities witnessed in the incidence, prevalence, and morbidity rates reported for minoritised groups who present to services with physical and mental health needs (McGuire & Miranda, 2008). The

existence of such disparities continues to hinder the progress of healthcare systems in achieving their target of equitable and responsive care (Hamed et al., 2022).

Racial Disparities in Mental Health

In comparison to the racial disparities described in general health services, disparities in mental health settings follow a different pattern. Individuals from minority groups have been reported to experience lower or equivalent rates of psychiatric disorders, compared to their White counterparts (Avenevoli et al., 2015; Breslau et al., 2005). The lifetime risk of mental health disorders in minority groups has been reported as follows (in descending order): White (45.6%), Hispanic (38.8%), Black (37.05%), and Asian (23.5%) (Alvarez et al., 2019). The tendency for minority individuals' mental well-being to be reported as better than, or similar to, individuals from White backgrounds is often referred to as the Black-White Paradox (Louie & Wheaton, 2019). This phenomenon is conceptualised as a 'paradox', as it is expected that individuals from minority backgrounds are more susceptible to mental health disorders due to their increased exposure to psychological stressors and their reports of lower life satisfaction (Taylor & Turner, 2002; Williams & Sternthal, 2010). However, following prolonged exposure to life stressors and acts of discrimination, minority individuals may have developed coping strategies, which desensitises them from psychological burdens. This, in turn, reduces their predisposition to mental health concerns (Mouzon, 2013; Woo et al., 2019).

In addition, another reason why disparities in mental health diagnosis may exist amongst minority groups members may be due to individuals being less likely to consult professionals about their difficulties, which subsequently increases the chances of them being undiagnosed with a mental health condition (Cooper et al., 2013). Additional barriers that minority groups face when accessing support for mental health concerns includes a lack of culturally competent

services that are able to meet the social, cultural, and linguistic needs of patients from this population (Mclean et al., 2003). In addition, these groups face negative stigma from individuals from their own racial backgrounds, who perceive help-seeking to be a personal weakness or an indication of a lack of religious faith (Mclean et al., 2003; Ward & Heidrich, 2009). Minority groups also have to navigate public perceptions, where they are depicted as being dangerous (Rao et al., 2007). This has led to biased attitudes amongst professionals, where the former are often viewed as being in need of treatment that requires segregation (Rao et al., 2007). This often leads to delayed contact with services, resulting in longer waiting times for treatment and poorer mental health prognoses, where individuals seek support when symptoms are more severe and enduring (Bignall et al., 2019). This results in minority individuals being more susceptible to chronic mental health conditions, such as psychosis (Neighbors et al., 2003).

Racial Disparities in Mental Healthcare Workers

The existence of racial disparities amongst healthcare workers, and its impact on the quality of professional care, has been highlighted as a cause of concern (Burgess et al., 2007). For a better understanding of how disparities operate within healthcare systems, it is important for research to focus on the presence of biases amongst healthcare workers who are responsible for delivering high-quality care (FitzGerald & Hurst, 2017). The existence of disparities in healthcare has been closely linked to cognitive biases that often lead to the negative evaluations directed at particular groups of people (Blair et al., 2011). Biases can be unconscious (implicit) or conscious (explicit) (Vela et al., 2022), and confirmatory (i.e., when an individual searches for information that supports their beliefs and ignores data contradicting them) or anchoring (i.e., when an individual focuses on a single piece of information) (Ly et al., 2023; Nickerson, 1998).

Unconscious biases are reported to play a key role in the unfavourable evaluations that professionals hold towards healthcare users from minority ethnic groups (Hamed et al., 2022; Stepanikova, 2012). Research has found that unconscious biases can influence the decisions made by healthcare professionals in relation to diagnosis and treatment (Meidert et al., 2023). Studies have found differences in the diagnosis of several mental health conditions, where depression is more frequently diagnosed in individuals from White backgrounds, compared to psychosis, which is three to four times more prevalent in Black communities (Heun-Johnson et al., 2021; Williams et al., 2007). In relation to the presence of racial disparities in anxiety disorders, research evidence remains inconsistent. Although some studies report higher odds of White individuals being diagnosed with anxiety, compared to individuals from minority groups (Vilsaint et al., 2019; Williams et al., 2019), others have reported the complete opposite, suggesting that Black individuals have a higher risk of developing anxiety-related disorders, compared to White individuals (Maclntyre et al., 2023; Watkins et al., 2015).

Variations in professionals' decisions about the presence of mental health symptoms in individuals from minority backgrounds has been associated with their beliefs about symptom cause and severity, which adds to their cognitive burden when making diagnostic decisions (Gushue et al., 2022; Lieder et al., 2017). This also influences professionals' treatment decisions, where individuals from minority backgrounds, who are deemed to be asymptomatic of a mental health concern, are less likely to receive sufficient medical intervention and be referred for follow-up interventions following a successful episode of treatment (Chui et al., 2021).

Research investigating racial disparities in psychiatric medication prescriptions for antidepressant and antipsychotic medication have documented mixed findings. While some studies have reported that White individuals are more likely to receive a prescription for

antidepressant medication (Lê Cook et al., 2017; Remmert et al., 2022), others have found similar prescription rates in individuals from White and Black racial backgrounds (Cerdeña et al., 2021; Remmert et al., 2022). However, stronger empirical support exists for the presence of racial disparities in the prescription of anxiolytic medication, where individuals from White backgrounds are more likely to receive a prescription for benzodiazepine medication, compared to individuals from minority racial groups (Cook et al., 2018; Ribas Roca et al., 2023).

Although studies have sought to investigate the presence of disparities in professionals' decisions in multiple treatment and diagnostic domains, evidence supporting the presence of racial disparities remains inconclusive. In particular, the direction and magnitude of reported disparities appears to be less clear. In addition, there is an absence of literature that has adopted a systematic approach to synthesising and evaluating existing findings on this research topic. Hence, conducting a systematic review on this area of research will allow for a comprehensive review of literature on this topic, and for knowledge gaps to be identified.

Therefore, we decided that it would be useful to conduct a systematic review on racial disparities in healthcare professionals' treatment decisions, in order to contribute to and strengthen the existing evidence base. In particular, our systematic review aimed to investigate racial disparities reported in experimental research studies, by assessing the following areas: treatment choice, diagnosis, prescription recommendation, symptom severity, and attribution of symptom cause. The systematic review aimed to answer the following questions:

1) Are there differences in the decision-making processes in healthcare professionals which are based on race?

2) Are there existing gaps in the literature pertaining to racial disparities in decision-making amongst health care professionals?

Method

Study Design

A systematic review of literature was registered online following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidance (PRISMA; Moher et al., 2009). Studies that met the inclusion criteria, and were published in peer-reviewed academic journals, were quality assessed. The review was submitted to PROSPERO for approval.

Search Strategy

An initial scoping review was carried out to identify terms that were used in the literature in order to: 1) assess for disparities in healthcare professionals' decision-making, and 2) establish that no other systematic review had been conducted in this area. The search strategy involved search terms for "race and ethnicity", "mental health", and "type of experimental method used" (Appendix B). Data sources were searched through EBSCO in order to elicit studies that were relevant to the search. The following databases were searched in September 2023 and updated in February 2024 by the primary researcher (AA): E-journals, APA PsychArticles, APA PsychInfo, CINHAL, and MEDLINE. The date limit for included papers was set to those published between the years 1980 and 2024, as we believed that studies published before this timeframe may not have been reflective of current research and existing knowledge, which may have negatively impacted on the applicability of findings to contemporary health settings.

The scoping search confirmed, to the best of our knowledge, that there were no published systematic reviews that had been conducted on this topic. Citation tracking was conducted by

(AA) through hand-searching the reference lists of included papers, in order to locate research papers that were not identified during the initial database search.

Inclusion Criteria

The review included studies investigating the presence of disparities in healthcare professionals' decision-making in relation to a patient's race and mental health presentation. Studies were deemed to be eligible for inclusion if they met the following criteria:

Population: The population of participants recruited in this study consisted of healthcare professionals. We used the International Standard Classification of Occupations 2008 (ISCO-08; Ganzeboom, 2010), which specified the following job roles that fell into the category of health care professionals: doctors, nurses, General Practitioners (GPs), prescribers, mental health therapists, psychological therapists, social workers, and medical students. Within this source, healthcare professionals who worked directly with patients, and made key decisions around aspects of their care, were selected, as they were deemed appropriate for the scope of the review.

The ISCO-08 also provided definitions for the professionals included in the above study. For example, according to the ISCO-08, a psychological therapist or a psychologist is "an individual who studies mental processes and applies this knowledge to promote personal, social, educational or occupational adjustment and development".

Studies excluded from this review include those that: 1) explored biases alone, 2) did not include a decision-making component, and 3) assessed decision-making within other professions.

Intervention: Case vignettes regarding a patient with a clinical mental health condition were presented to healthcare professionals.

Comparison: In order to be included in the final review, the case(s) described in the vignette had to include a manipulation of the patient's race or ethnicity, as the review aimed to investigate the presence of racial disparities in professionals' clinical decisions. Studies that did not include a race manipulation were excluded.

Outcomes: The primary outcome was to assess the decisions made within a clinical context by professionals for patients with mental health issues from different racial backgrounds. Studies reporting on decisions relating to: medical and non-medical treatment, diagnosis, medication prescription, perceptions of symptom severity and symptom cause, were included in the review.

Studies were excluded if they: 1) were not available in English or full-text, 2) did not employ quantitative research methodology, 3) included grey literature or were unpublished, 4) did not include a manipulation of patient race or ethnicity, 5) did not report professional decision-making by healthcare professionals of interest, and 6) were not published between 1980 and 2024.

Identification of Studies

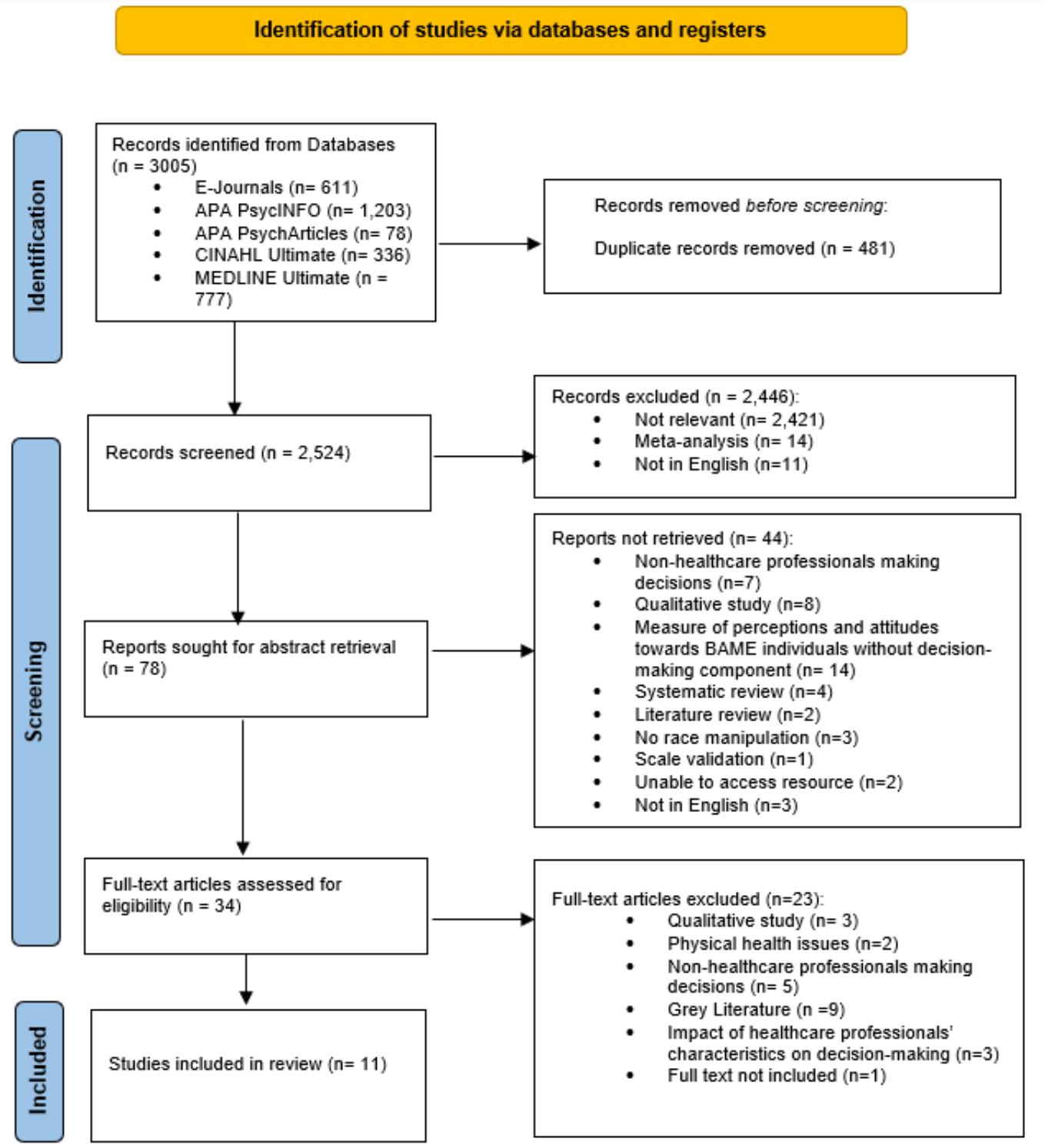
The initial search on the electronic databases identified 3,005 studies. Papers identified during the search were uploaded to Endnote. Four hundred and eighty-one duplicate studies were removed, which resulted in 2,524 studies being initially screened. Titles were screened for relevance against study inclusion criteria by the lead researcher, which led to the exclusion of 2,446 studies for the following reasons: non-relevance (n=2,421), meta-analytic study (n=14), and non-English studies (n=11). Following this, 78 paper abstracts were screened against our inclusion criteria by AA and a second reviewer, who screened approximately 10% of the papers

(N=8). In order to resolve discrepancies in reviewer screening, the two reviewers discussed and rescreened papers that they did not initially agree on, allowing them to reach a shared consensus on studies that were eligible for a full-text review. Following this, an 89% concordance in agreement was reached between both screeners.

This resulted in 44 papers being excluded following abstract retrieval. Full-text reviews were conducted for 34 studies; however, 23 studies were later excluded, as they did not meet the inclusion criteria. The remaining 11 studies that met the inclusion criteria were included in the final review (See Figure 1).

Figure 1

Prisma Flowchart Showing the Process Study Identification



Data Extraction

Data extraction was carried out independently by one reviewer (AA). The following information was extracted from papers: article author, year of publication, study location, sample characteristics, sampling method, sampling strategy, process of randomisation, and patient characteristics. Information extracted from the included studies was more suitable for a narrative, as opposed to a meta-analytic approach, due to the anticipation of a lack of consistency in the methodological approach and outcomes (i.e., types of decisions) employed by the studies included in the review (Popay et al., 2006). Information pertaining to our research question was also included in the data extraction table, such as: diagnostic decisions, measures, and a summary of study findings. We synthesised data using a narrative approach, following the guidance on systematic reviews (Petticrew & Roberts, 2008; Popay et al., 2006). Endnote and an Excel 2016 spreadsheet were used to store and organise data.

Results

Quality Appraisal

The quality of each study was assessed independently using the Quality Assessment Tool for Quantitative Studies (QATQS; Thomas et al., 2003). The assessment tool was created to evaluate a variety of intervention study designs, such as RCTs and case-control studies. The QATQS is suitable for systematic reviews of effectiveness and has been reported to have good inter-rater reliability (0.77), content validity, and test-retest reliability (Armijo-Olivo et al., 2012; Jackson & Waters, 2005). The tool assesses six methodological dimensions: 1) selection bias, 2) study design, 3) confounders, 4) blinding, 5) data collection methods, and 6) withdrawals and drop-outs, which provide a global rating for the quality of a study. Each dimension was given a

rating between one, two, and three. A rating of one indicated a strong quality paper, a rating of two indicated a moderate quality paper, and a rating of three indicated a weak quality paper.

Once each component was rated, the ratings were accumulated to provide an overall rating for the quantitative paper. An overall rating of one indicated a strong quality paper that consisted of no weak ratings within individual components of the paper. An overall rating of two indicated a moderate quality paper, with one single weak rating. An overall rating of three indicated a weak quality paper that had two or more weak ratings. The main researcher (AA) assessed all papers, while the second rater cross-checked quality ratings for each paper. Areas of disagreement between both raters were resolved through discussions and the act of jointly reviewing ratings that sparked disagreement, in order to reach a shared consensus on ratings. Overall, four studies (36.4%) were evaluated as having a 'strong' quality, six (54.5%) as having a 'moderate' quality, and one (9%) as having a 'weak' quality (See Table 1).

Table 1

A summary of quality ratings of studies included in the review using the QATQS (Thomas et al., 2003).

Study Title	Selection Bias	Study Design	Confounders	Blinding	Data Collection	Withdrawals and Drop-outs	Quality Level
Kales et al., (2005a)	1	1	1	2	3	1	Moderate
Ezawa & Strunk (2022)	1	1	1	2	1	1	Strong
Connolly & Taylor (2016)	1	3	1	1	1	2	Moderate
Di Caccavo et al., (2000)	3	1	1	1	1	3	Weak
Duveau et al., (2024)	2	1	1	1	2	2	Strong
Duveau et al., (2023)	1	1	1	2	1	1	Strong
Garland et al., (2015)	2	1	2	1	1	1	Strong
Gushue et al., (2022)	2	1	2	1	1	3	Moderate
Joy & Bartholomew (2021)	2	1	1	1	1	3	Moderate
Kales et al., (2005b)	1	1	1	1	2	3	Moderate
Littlewood (1992)	1	1	1	3	1	1	Moderate

Included Publication Characteristics

A total of 11 quantitative studies were included in the systematic review. All of the studies were experimental in nature and employed various recruitment techniques: opportunity (n=5), volunteer (n=5), and snowball (n=1) sampling. The total sample size for the included studies was 4,587. The occupation of participants included in the study were as follows: psychiatrists (n=391), therapists with a psychological background (n=218), medical prescribers (n=123), licenced and trainee GPs (n= 2,479), physicians (n=947), mental health therapists (n=138), medical doctors (n=42), primary care physicians (n=178), social workers and psychologists (n=32), and nurses (n=39). Studies were conducted by research teams based in 3 countries: the United States of America (n=6), the United Kingdom (n=3), and Belgium (n=2). Included studies were published between 1992 and 2023.

Study Participant Characteristics

All studies encompassed in the review included case vignettes describing a hypothetical patient from a specific racial background, which required professionals to reach a decision based on the individual's presenting mental health issue or neurodiversity. The patients depicted in the vignettes were in the following life stages: older adult (n=2), adult (n=8), and child (n=1). Amongst the included studies, 72.7% of the studies randomised patients into conditions where they viewed vignettes consisting of patients from one of two racial groups (i.e., a White or Black patient), and 27.3% of study vignettes included patients from one of three racial groups (i.e., White, Black, and Asian, or White, Black, and Hispanic). No other racial groups were included. Patients were depicted as experiencing various mental health conditions (i.e., depression, psychosis, schizophrenia, anxiety, bipolar, post-traumatic stress disorder, and obsessive compulsive disorder) or neurodevelopmental disorders (attention deficit hyperactive disorder and

autism spectrum disorder). In some included studies, the patient's diagnosis was also subject to an experimental manipulation.

Type of Treatment Decision

In terms of the type of decision that professionals made, included papers focused on one or more of the following treatment decision areas: treatment choice, medication prescription, diagnosis, perception of symptom severity, and attribution of symptom cause. A total of six papers focused on treatment choice, where the papers consisted of professionals making choices about the type of treatment they would recommend for a patient, or whether a particular service would be suitable for the patient's presenting needs. Four publications focused on professionals' choice of medication prescription and/or dosage based on the patient's presenting needs. Eight papers required professionals to make decisions about the type of diagnosis they would give to a patient presenting with mental health symptomology, in accordance with the Diagnostic and Statistical Manual of Mental Disorders (DSM) criteria. Four papers focused on professionals making judgements about the severity of a patient's presenting difficulties. Two papers focused on professionals' attributions of the cause of mental health symptoms in patients. Decisions made by professionals were primarily based on the information presented to them in vignettes. All vignettes included a manipulation of the patient's race (See Table 2).

Table 2

Studies Evaluating Treatment Decision-Making in Healthcare Professionals

Authors, Year, and Country	Professional Sample Characteristics	Sampling Method	Sampling recruitment/ Platform used	Process of Randomisation	Patient Characteristics	Diagnostic Decision	Measures	Summary of Study Findings
Kales et al., 2005a *USA*	N= 321 psychiatrists. **Training/Professional background:** 215 (67%) graduates from medical schools in the USA, 106 (33%) graduates from international medical schools. **Race/Ethnicity:** 232 (72%) White, 60 (19%) Asian, 15 (5%) other ethnic background, 7 (2%) Black, and 7 (2%) Hispanic.	Volunteer Sampling.	Psychiatrists were invited to take place in the study via post card invitation, or on-site during a conference.	Participants were randomly assigned to see one of four vignettes, which varied according to race and gender manipulations. The four conditions were: Black female, Black male, White female, and White male.	**Population:** Older Adults with Depression, with suggestive symptoms of Psychosis, Cognitive Issues, and Alcohol use. **Race manipulation:** Black and White.	Diagnostic Decisions.	Written Vignette. Diagnostic and Statistical Manual- IV (DSM-IV).	Psychiatrists were no less likely to diagnose or treat depression in Black elderly patients, compared to their White counterparts. Findings suggest that psychiatrist bias existed in diagnosis, based on the colour of a patient's skin.
Ezawa & Strunk, 2022 *USA*	N=218 Therapists with a background in psychology. **Average age:** 39.34 years. **Race/Ethnicity:** 184 (84.4%) therapists were White, 18 (8.3%) were Asian, 8 (3.7%) were Black, 2 (0.9%) were American Indian or Alaskan Native, and 1 (0%) were Native Hawaiian, and 5 (2.3%) identified as Other.	Volunteer Sampling.	Mental health therapists across the United States were recruited to participate in a study of clinical decision-making in CBT using word-of-mouth and online communication. Interested therapists were provided with a	Participants were randomly assigned to groups in the following ways: 109 participants were randomised to the White patient condition and 109 were randomised to the Black patient condition.	**Population:** Adults with Depression. **Race manipulation:** Black and White.	Treatment Choice (CBT Interventions/Strategies to use with patients from different races).	Written vignette. The Symbolic Racism 2000 Scale. Marlowe-Crowne Social Desirability. Scale-Short Form. Cognitive change scale (11-point likert scale).	Cognitive change strategies were perceived as being less therapeutic and validation strategies as more therapeutic for Black patients. Therapists spent more time on validation strategies when working with Black patients than White patients. Among therapists presented with Black patients, positive racial attitudes were associated with viewing cognitive change

	Training/ Professional background: 97 (44.5%) therapists had a Ph.D., 26 (11.9%) had a Psy.D., 85 (39.0%) had a master's degree, 8 (3.7%) had a bachelor's degree, and 2 (0.9%) described their highest degree as "other."		link to the online experiment.					and validation strategies as more therapeutic.
Connolly & Taylor, 2016 *UK*	N=123. Medical prescribers. **Gender:** 76 (61.8%) Male and 47 (38.2%) Female. **Training/Professional background:** 50 (41%) Consultant, 42 (34.4%) Specialist trainee, 12 (9.8%) Core trainee, and 18 (14.8) Foundation trainee. **Race/Ethnicity:** 88 (72.7%) White, 18 (14.9%) Asian, 8 (6.6%) Black, 4 (3.3%) Mixed, 2 (1.7%) Other, and 1 (0.8%) Chinese.	Opportunity Sampling.	Vignettes were sent to medical prescribers from an NHS trust, with an explanation of what the study entailed. The explanatory letter asked prescribers to complete a survey of antipsychotic prescribing and stated that the reasons for the study could not be revealed, as they would invalidate the results. Respondents could reply via email or anonymously by post.	Half of the prescribers were sent the case study where the ethnicity of the patient was White, and the other half where the ethnicity of the patient was Black.	**Population:** Adults with Psychosis. **Race manipulation:** Black and White.	Medication prescription recommendation and dosage.	Written Vignette. British National Formulary (BNF).	There was no significant difference in the total dose of antipsychotic by case ethnicity. Mean doses for Black and White patients were 47.7% and 50.9%, respectively. No difference was found in antipsychotic and polypharmacy recommendation, dosage of medication prescription, and route of administration for Black and White patients.
Di Caccavo et al., 2000 *UK*	N=18. General Practitioners. **Gender:** 10 (55.6%) male and 8 (44.4%) female. **Race/Ethnicity:** 18 (100%) White.	Opportunity Sampling.	Vignettes were sent to practitioners by post. Respondents sent their responses back by post.	Participants received a vignette either depicting an Asian, Black, or White patient with a mental health condition.	**Population:** Adults with Depression, Anxiety, or Psychosis. **Race manipulation:** Black, Asian, and White.	Diagnostic Decision and Treatment Choice.	Written vignette. Diagnostic and Statistical Manual (DSM).	General Practitioners diagnoses of depression and psychosis did not differ according to patients' racial group. Accuracy for diagnosis in depression was most accurate for all racial groups (79%; 41/54 GP's). Psychosis (21.8%) was equally likely to be

								diagnosed as anxiety (21.8%) and depression (23.6%), in all races. Anxiety diagnosis was most accurate for White individuals (82.3%). Anxiety was more likely to be seen as a physical complaint in Asian and Black patients. There was no significant effect of race on treatment choice.
Duveau et al., 2024 *Belgium*	N= 797. Licensed and Trainee General Practitioners. **Average Age:** 38.25 years **Gender:** 36.5% Male and 63.5% Female. **Race/Ethnicity:** 73% White and 17% Non-White background. **Training/Professional background:** 52.8% Licensed GP and 47.2% GPs in training.	Volunteer sampling.	GPs were invited to take part in the online study using a database from a larger scale 'REMDI' project to access their contact details.	GPs were randomly allocated to watch a video with either a Black or White male patient.	**Population:** Adults with Depression, Schizophrenia, Bipolar, Anxiety, PTSD, OCD, and Sleep disorders **Race manipulation:** Black and White.	Treatment Choice, Diagnostic Decision, and Symptom Severity.	Video vignette Diagnostic and Statistical Manual -5 (DSM-5)	Several medical decisions differed, depending on the ethnicity of the patient in the vignette. There was no difference in depression diagnosis between both races. The prevalence of PTSD was significantly higher in patients from the Black background, with a small effect size of 23.9%. Symptoms in Black patients were estimated to be less severe, compared to White patients. Medical and combination treatment was more likely to be prescribed for White patients.
Duveau et al., 2023 *Belgium*	N= 964. General Practitioners. **Average Age:** 38.2 years **Gender:** 37% Male and 63% Female	Opportuni ty sampling.	A link to the survey was shared in general newsletters and by email via GP practices and other Belgian authorities.	GPs were randomly assigned to one of two conditions: Black patient (n=400) and White patient (n=400).	**Population:** Adults with Depression. **Race manipulation:** Black and White.	Treatment Choice, Diagnosis, Prescription and dosage, Symptom severity.	Video vignette. Diagnostic and Statistical. Manual -5 (DSM-5)	No significant differences were found in depression diagnoses for White and Black patients. Anxiety was more likely to be diagnosed in White patients.

	Training/Professional background: 55.1% Licensed GP, 44.9% GP in Training							PTSD with Depression was more likely to be diagnosed in Black patients. Symptom severity was deemed to be lower in black patients.
Garland et al., 2015 *USA*	N= 371. Physicians attending medical school or working in clinical practice. **Gender:** 52.3 % Male and 47.7% Female **Race/Ethnicity:** 69% White, 19.7% Asian/Pacific Islander, 5.7% Hispanic, 3.5% Black, and 2.2% Mixed. **Training/Professional background:** 77.9% attended medical school in the US, 7.8% in Asia, and 3.5 % in India.	Opportunity Sampling.	Participants were randomly selected from a medical database. Surveys were emailed to the respondents.	Participants were randomly assigned to one of three conditions: Hispanic (31%), Black (33.2%), and White (35.8%), using Qualtrics.	**Population:** Children with ADHD, Anxiety, and Autism. **Race manipulation:** The mother of the child was either Black, Hispanic, or White.	Treatment Choice, Medication prescription recommendation, and Diagnostic decisions.	Video Vignette. Diagnostic and Statistical Manual -IV (DSM-IV).	No significant differences were found for psychosocial treatment recommendations for individuals from different racial backgrounds. No significant difference was found for diagnostic and medication recommendations. Antidepressants were recommended more frequently for patients with parents from White backgrounds, compared to those with Black and Hispanic parents.
Gushue et al., 2022 *USA*	N= 181 Mental Health Trainees and Practitioners. **Average age:** 42.1 years **Race/Ethnicity:** 100% White **Gender:** 22.1% Male and 76.2% Female. **Training/Professional background:** 28% Bachelor's degree, 55% Master's degree, 12% Doctorate, and 3% Other professional degree.	Snowball Sampling.	Participants were recruited via emails, signs, and flyers that were sent to graduate programs and mental health services.	Participants were randomly assigned to one of three conditions using Qualtrics.	**Population:** Adults with Anxiety and Sleep difficulties. **Race manipulation:** Black, Asian, and White.	Symptom severity and Attribution of symptoms.	Video vignette. Diagnostic and Statistical Manual-5 (DSM-5). Initial Client Inventory (ICII-R). Caution Dimension Scale (CDS).	There were overall differences in participants' perceptions of symptom severity, as a product of the patient's race. Black patients were rated as significantly less symptomatic, compared to White and Asian patients. The problems presented by Black patients were perceived to be caused by an internal cause (i.e., internal attribution) rather than an external cause (i.e., situational attribution).
Joy & Bartholomew, 2021	N=138. Mental Health Providers.	Opportunity Sampling.	Participants were recruited online	Participants were randomly assigned to	**Population:** Adults with GAD.	Diagnostic Decision, Symptom	Written vignette.	There were no significant differences in diagnosis based

USA	**Average Age:** 38.3 years old. **Gender:** 76% Female and 24% Male. **Race/Ethnicity:** 86% White, 5% Asian, 4% Black, 4% Hispanic, and 1% Native American. **Training/Professional background:** 35% Clinical Psychologists, 26% Counselling psychologists, 15% Mental health practitioners, 12% Counsellors, 5% Social workers, and 7% other professionals.		through an online mailing list.	one of two conditions using Qualtrics.	**Race manipulation:** Black and White.	Severity, and Attribution of Symptom Cause.	Diagnostic and Statistical Manual-5 (DSM-5). Clinical Index of Client Concerns (CLICC). Colour Blind Racial Attitudes Scale (CoRAS). General Belief in a Just World Scale (GBJW).	on the patient's racial background. Anxiety diagnosis did not differ based on the patient's race.
Kales et al., 2005b *USA*	N=178. Primary Care Physicians. **Average Age:** 44.8 years old. **Gender:** 50.5% Female and 49.5% Male. **Average years since medical school graduation:** 19-20 years. **Race/Ethnicity:** 70.8% White, 18.5% Asian, 6.2% Black, 3.4% Hispanic, and 1.1% Other.	Volunteer Sampling.	Participants were recruited onsite at an annual meeting.	PCPs were randomly assigned to view one of the four vignettes via an online platform.	**Population:** Older Adults with Depression (male and female). **Race manipulation:** Black and White.	Treatment Choice (follow-up decisions), Diagnostic Decision, and Medication prescription.	Video vignette. Diagnostic and Statistical Manual -IV (DSM-IV). Mini-Mental State Examination (MMSE).	There were no significant differences found in the diagnosis of depression for patients from Black and White racial backgrounds. There were no significant differences in antidepressant treatment recommendations based on patient race. There were no significant differences in follow-up recommendations based on race.
Littlewood, 1992 *UK*	N=342. Health professionals. **Training/Professional background:** 18.1% Psychiatrists, 12.3% Medical doctors, 11.4% Social workers, Psychologists, and Nurses,	Volunteer Sampling.	Participants were recruited onsite at three leading teaching hospitals.	Participants were randomly assigned to one of two vignettes conditions: Black condition (n=167) and White condition (n=175).	**Population:** Adults with Psychosis, Depression, Personality Disorder, and Stress Reaction.	Diagnostic Decisions.	Written vignette.	There were no statistically significant differences in diagnoses in affective and psychotic disorders across Black and White racial groups.

33.9% Medical students without training in psychiatry, 14.0% Medical students with training in psychiatry, and 0.9% Unspecified.	**Race manipulation:** Black and White.

Treatment Choice

Six studies focused on assessing treatment choice decisions made by healthcare professionals. Studies focused on assessing whether there were differences in treatment recommendations based on a patient's race. Four studies employed vignettes where the patient's presentation was standardised for all professionals, and the patient depicted symptoms of depression (Duveau et al., 2023; Duveau et al., 2024; Ezawa & Strunk, 2022; Kales et al., 2005b). One study varied the clinical presentation of the patient and exposed professionals to one of the following mental health presentations: psychosis, depression, or anxiety (Di Caccavo et al., 2000). However, rather than manipulating the patient's race directly, one study focused on altering the race of the patient's mother, to assess whether this also resulted in varied decisions by professionals (Garland et al., 2015).

Three studies assessed treatment recommendations made by General Practitioners (GPs) for patients from different racial backgrounds (Di Caccavo et al., 2000; Duveau et al., 2003; Duveau et al., 2024). Despite recruiting the same professional population, studies reported different findings in treatment recommendations for patients presenting with symptoms of anxiety, depression, or psychotic-related disorders. The former study did not find a significant impact of race on GPs' decisions when they were asked to rate the likelihood of making treatment decisions from a standardised list of recommendations for Black, White, and Asian patients. However, the two latter studies reported significant differences in treatment recommendations made for Black and White patients, where professionals were more likely to propose a treatment plan prescribing medical, or a combination of medical and non-medical, interventions for depressed patients from a White background, compared to a Black background.

According to a regression analysis, a small effect size (26% of variance) was attributed to the impact of race on treatment decision-making.

One study assessed whether manipulating the race of a child's mother in a case vignette would have a similar impact on activating disparate decisions in healthcare professionals (Garland et al., 2015). The study found no significant differences in treatment recommendations based on the race of the mother, for Black, White, or Hispanic children presenting with symptoms of ADHD, Anxiety, and Autism Spectrum Disorder (ASD).

Another study examined treatment decisions made in relation to delivering components of an intervention to patients with depression. Ezawa and Strunk (2022) researched whether therapists' decisions to engage patients in particular aspects of a Cognitive Behavioural Therapy (CBT) intervention (i.e., cognitive or validation strategies) differed based on the patients' race. The study found significant differences in recommendations relating to the patients' perceived race, where White patients were more frequently recommended cognitive strategies, while Black patients were recommended validation strategies. Therapists were also found to spend significantly more time using cognitive techniques when working with White patients, and validation techniques when working with Black patients.

Two studies assessed post-treatment decisions, such as onward referral and follow-up, after treatment for adult patients with depression from different races. Significant differences were reported in professionals' decision-making in relation to onward referrals for Black and White patients. Black patients only received onward referrals when socio-demographic factors were disclosed, compared to White patients who were referred onwards, irrespective of professionals' awareness of socio-demographic factors (Duveau et al., 2023). In terms of follow-up decisions, Kales et al., (2005b) reported no differences in decisions based on race in relation

to providing patients with 1-6-month follow-ups and referring them to non-medical providers, such as psychologists or social workers.

Diagnosis

A total of eight papers assessed whether professionals' diagnostic decisions varied based on a patient's racial background. Studies required professionals to either choose a single diagnostic label to assign to the patient (n=5), or to select multiple diagnostic labels from a list (n=3) that appropriately described the patients' presenting difficulties. Five studies focused on an adult presenting with a mental health difficulty in a clinical vignette. All studies used the Diagnostic and Statistical Manual (DSM) to inform their clinical descriptions of patients.

Two studies involved a Black patient and a White patient presenting with depression, and did not include ambiguity in their descriptions of symptoms (Duveau et al., 2003; Duveau et al., 2004). In both studies, GPs were recruited as healthcare professionals and were required to make diagnostic decisions. Both studies reported a significant difference in the diagnostic decisions made by GPs, depending on a patient's race, where individuals from Black backgrounds were more likely to receive a diagnosis of PTSD, or a dual diagnosis of PTSD with depression. Diagnostic differences in PTSD were reported as 16.1% for Black patients, compared to 11% in White patients, with an effect size of 23.9%. Racial disparities in PTSD diagnosis were still reported, even when professionals received background information about a patient's socio-economic status, which intended to activate empathy and humanisation.

In relation to diagnosing symptoms of depression, no significant differences were reported for Black and White patients, even in conditions where physicians received background information. Similarly, two studies did not find evidence of the presence of racial disparities in

health professionals' diagnosis of depressive and psychotic symptoms in White, Black, and Asian patients (Di Caccavo et al., 2000; Littlewood, 1992). However, one of the studies reported that both White and Black patients were likely to receive a diagnosis of psychosis, compared to other affective disorder diagnoses, but reported no differences in diagnostic decisions in relation to personality and stress-related disorders for individuals from Black and White racial groups (Littlewood, 1992).

One study compared diagnostic decisions for Black, White, Asian, and different gendered patients. The study reported racial differences in diagnosis, where White individuals across both genders received a correct diagnosis of anxiety, compared to other races. Also, Asian males and females were more likely to receive an incorrect diagnosis of anxiety and physical health concerns, compared to White patients. Black patients were more likely to be diagnosed with a physical health issue and not at an increased risk of being diagnosed with psychosis, compared to their White counterparts (Di Caccavo et al., 2000). Although, the study involved a small sample size of 18 GPs and did not report effect size. A larger study including 138 therapists similarly reported no difference in anxiety diagnoses between Black and White patients (Joy & Bartholomew, 2021). Contrary to this, Littlewood (1992), who employed a large sample of medical graduates (n=342), found no differences in diagnoses in affective and psychotic disorders across Black and White racial groups, although they reported a higher diagnosis for schizophrenia in both groups. However, the patient described in the study was male, making findings less generalisable to female populations.

For studies that investigated disparities in anxiety disorder diagnoses, findings appear to be mixed, but overall in support of the presence of racial disparities for individuals from White and non-White racial backgrounds. Two studies report significant differences in the diagnosis of

anxiety in patients from White racial groups, compared to Black and Asian racial groups (Di Caccavo et al., 2000; Duveau et al., 2023). In particular, findings from studies suggest that White individuals were more likely to be diagnosed with anxiety symptoms; Duveau et al. (2023) also found this to be the case when participants received information about a patient's socio-economic background. In addition, both Black and Asian patients presenting with symptoms of anxiety were also less likely to receive a correct diagnosis of anxiety, and their symptoms were more likely to be attributed to a physical health concern, compared to White patients (Di Caccavo et al., 2000). However, study findings from Joy and Bartholomew's (2021) research do not provide support for the presence of disparities in Black and White patients presenting with symptoms of specific anxiety disorders, such as Generalised Anxiety Disorder (GAD).

Studies that described mental health presentations in an older adult population reported no differences in Black and White patients who presented with late-life depression (Kales et al., 2005a; Kales et al., 2005b). Both studies investigated psychiatrists and primary care physicians' certainty in diagnostic choices and reported no significant differences in certainty ratings across races. However, confidence in depression diagnosis was higher for individuals from White (80.4%) as opposed to Black (64%) backgrounds. In addition, stronger support for disparities was reported when diagnosing depression across different genders, as opposed to different races.

A study that investigated diagnostic decisions in professionals working in a child population did not support the presence of racial disparities in professionals when making diagnostic decisions. In particular, a study by Garland et al. (2015) presented medical physicians with a vignette, which depicted a child with symptoms of Autism, ADHD, or Anxiety. In this study, rather than the race of the patient (i.e., the child) being directly manipulated, the race of the child's parent was altered instead. Parents were from one of three racial groups: Hispanic,

White, or Black. The study did not report significant differences in the diagnosis of the above mental health and neurodiverse conditions in child patients where their race was inferred as belonging to a White or non-White racial background.

Symptom Severity

Four studies investigated professionals' perceptions of symptom severity in patients from different races. Two studies used standardised scales to investigate professionals' perceptions of symptom severity in patients from different races. Gushue et al., (2022) employed the Initial Client Impression Inventory-R (ICII-R, Clarke, 2009; Gushue, 2004), which consists of 18 items measuring the level of concern regarding the severity of a patient's symptoms. The internal consistency rating of the ICRII-R is good (0.89), and the scale is reported to positively correlate with the Clinical Judgement Scale (Clarke, 2009; Houts & Galante, 1985). Whilst Joy and Bartholomew's (2021) study employed the Clinical Index of Client Concerns (CLICC; Center for Collegiate Mental Health, 2016), a valid measure of client concerns (Center for Collegiate Mental Health, 2016), consisting of a 44-item checklist, was used to rate patient concerns. Two studies did not employ any standardised clinical measures for symptom severity (Duveau et al., 2023; Duveau et al., 2024).

Out of the four studies, three reported a significant difference in perceptions of symptom severity across races, where Black patients presenting with symptoms of anxiety were perceived as having less severe symptoms, compared to their White and Asian counterparts, even when professionals were provided with their patients' socio-economic background information, which intended to activate empathy and humanisation (Duveau et al., 2023). However, a study that focused on Generalised Anxiety Disorder (GAD), a specific type of anxiety disorder, found no

differences in therapists' perceptions of anxiety severity in Black and White patients (Joy & Bartholomew, 2021).

Attribution of Cause of Symptoms

Gushue et al. (2022) used the Causation Dimension Scale (CDS, Russell, 1982) as a measure of professionals' attribution of anxiety symptoms in patients from different racial backgrounds. Professionals attributed the cause of anxiety and sleep-related difficulties to internal factors in Black patients, compared to White and Asian patients. The study found internal symptom attribution cause to be negatively correlated with symptom severity ($r = -0.27$, $p<0.01$). Internal symptom attribution was also found to have a significant effect on anxiety diagnosis $t (157) = 4.97$, $p< 0.00$ (Joy & Batholomew, 2021). Together, study findings suggest a relationship between the attribution of the cause of anxiety symptoms and the perceived race of the patient. For example, individuals from Black backgrounds were more likely to have their symptoms of anxiety attributed to internal factors.

This in turn, may impact on professionals' perceptions of anxiety symptom severity in Black individuals and reduce the likelihood of them receiving an accurate diagnosis of anxiety, compared to their White and Asian counterparts.

Medication Prescription and/or Dosage

Most studies investigating medication prescription decisions made by professionals for patients from different races did not report significant differences in medication recommendations based on race. In particular, in studies that focused on antidepressant medication recommendations, both psychiatrists and physicians, recommended Selective Serotonin Reuptake Inhibitors (SSRIs) as the first-line of treatment for depressed patients from

Black and White racial backgrounds (Kales et al., 2005a; Kales et al., 2005b). However, in both of the included studies, professionals did not refer to medical prescription regulations to guide their decisions.

A recent study that required medical prescribers to use the British National Formulary (BNF) as a reference point for prescribing antipsychotic medication reported no significant differences in the type of antipsychotic medication prescribed ($p = 0.680$) and route of administration ($p = 0.531$), for patients from different racial backgrounds. In addition, the study also found no significant differences in recommendations for antipsychotic dose ($p = 0.567$), where recommended doses for Black and White patients were 47.7% and 50.9%, respectively (Connolly & Taylor, 2016). However, study findings suggest that Black female patients were rated as being less likely to adhere to treatment ($p<.05$), and to sue for malpractice ($p<.05$), whilst Black males were rated as being less likely to understand psychiatrist recommendations ($p<0.5$), compared to White female and male patients (Connolly & Taylor, 2016). Further, Duveau et al. (2023) reported that GPs were more likely to prescribe Benzodiazepines for White patients presenting with depression, compared to Black patients ($p<0.05$).

Discussion

Interpretation of Findings

The studies included in the review suggest the presence of an association between the treatment choice decisions made by professionals and the racial category of the patient in which these decisions pertain to. Four out of six studies in the review found differential racial decisions made in relation to medical and non-medical treatment recommendations. One study found that professionals were more likely to prescribe solely medical, or a combination of medical and non-

medical interventions, for White patients (Duveau et al., 2024). Our findings are supported by Coleman et al. (2016), who analysed outcomes for 7,523,956 patients on a medical database and found that minority ethnic patients with a psychiatric diagnosis were less likely to be recommended a medical intervention for most psychiatric conditions, and were less likely to be referred for psychological therapy than White patients (Mercer et al., 2019). Together, findings support the consensus that individuals from minority ethnic groups are faced with poorer health outcomes, compared to their White counterparts (McGuire & Miranda, 2008). Previous research has suggested that disparities in health may be a product of socioeconomic differences (i.e., income, wealth, and educational attainment), which play a powerful role in maintaining inequalities in health outcomes (Marmot et al., 2017; Shonkoff et al., 2000). However, our findings also suggest that healthcare professionals act as key decision-makers in the fair allocation of healthcare resources amongst individuals from different racial backgrounds (Smith et al., 2013).

However, as two studies included in the review were not suggestive of racial differences in decisions made by professionals about treatment choice, it can be argued that the current study's findings may be influenced by variations in the methodological approaches adopted by included studies. For example, the majority of studies that reported significant racial differences in treatment recommendations employed written vignettes as opposed to video vignettes. Previous research has shown that written vignettes offer less human and realistic presentation (Sleed et al., 2022), which calls into question the mundane validity of studies included in the review that are suggestive of significant racial differences in treatment choices made by healthcare professionals. It can be argued that written vignettes reduced the salience of the race manipulation and activated honest negative attitudes held towards patients from minority ethnic

groups, which led to honest decisions being made about treatment choice in healthcare professionals (Ezawa & Strunk, 2022; Hall et al, 2015). This is in support of the Aversive Racism Theory (Dovidio & Gaertner, 1986), which suggests that some individuals in society support egalitarian principles and believe themselves to be non-prejudiced, whilst they unconsciously harbour negative beliefs about disadvantaged groups. Hence, the theory posits that, in ambiguous situations, aversive racists may exhibit more discriminatory behaviour towards disadvantaged groups (Dovidio et al., 2016).

In addition, in relation to professionals' decisions about components of CBT treatment to use with individuals from particular racial backgrounds, our review found a preference for psychological therapists to use validation techniques with Black individuals and cognitive techniques with White individuals (Ezawa & Strunk, 2022). Although this finding is suggestive of a disparity in the choice of the CBT component used by therapists for patients with different racial backgrounds, the treatment decision is supported by Hays' (2009) culturally competent CBT framework, which empathises the importance of validating helpful thoughts, as opposed to evaluating and challenging the accuracy of thoughts. This was demonstrated in the need for therapists to move away from cognitive to validation techniques.

Further, as the majority of professionals included in the population sample for this study were from a White background, it can also be argued that there may have been an increased motivation for therapists to appear as more culturally sensitive when working with individuals from minority backgrounds. Hence, the increased employment of validation techniques during CBT delivery with individuals from minority groups would have allowed for patients' unique experience of life stressors and discrimination to be captured during CBT (Ezawa & Strunk,

2022; Greene et al., 1985), at the expense of therapists' competence in adhering to, and delivering regimented CBT protocol.

However, research suggests that the therapist's level of competency, and their adherence to treatment protocol, are of vital importance in producing long-term positive outcomes (Bjaastad et al., 2023). Hence, although demonstrating cultural competence, decisions made by therapists in this study may reflect their beliefs regarding their ability to engage Black individuals in therapy, where they prioritised maintaining a healthy therapeutic alliance - which is known to be detrimental for positive change in CBT (Chang & Berk, 2009; Knock et al., 2021). In addition, the application of culturally adapted CBT in practice remains questionable, as there does not seem to be a strong body of evidence supporting its use, or a shared consensus on elements that work, due to a lack of universal training (Dalmia et al., 2023; Naeem et al., 2023).

Although culturally adapted CBT may be an effective way to work with individuals from various racial backgrounds (Rathod et al., 2019), adapting therapy in this way may be based on the premise that minority individuals possess characteristics that prevent them from experiencing treatment gains in its original form (Hernandez et al., 2020). Hence, in practice, therapists can work towards improving their knowledge and understanding of culturally underserved communities, to narrow the health inequalities that they inadvertently experience (Chu & Zhu, 2023). Further research is needed to explore whether professionals make disparate decisions on the cultural adaptations to employ when working with individuals from specific minority backgrounds.

Two studies included in the review reported significant racial differences in onward referrals made by GPs. The studies found an increased likelihood for White patients with depression to be referred to external services for additional support (Duveau et al., 2023; Duveau

et al., 2024). Findings support previous research that reported the reduced occurrence of ethnic minorities receiving specialist mental health support and appropriate medical treatment following contact with primary care professionals (Memon et al., 2016). This finding is particularly alarming, for it suggests that, in addition to the multiple barriers that minority ethnic groups face (i.e., social stigma and cultural naivety), when it comes to accessing appropriate mental health support, the inadequate response they receive, and unfair allocation of resources by professionals, further widens the access gap (Memon et al., 2016). Hence, more research is needed to better understand how patients' characteristics impact on professionals' decisions in relation to treatment and referral recommendations. However, it is important to establish whether these decisions are reached using mental shortcuts (i.e., biases), as opposed to being guided by clinical guidelines which are supported by empirical evidence (Molony, 2016).

We found mixed evidence for the presence of diagnostic differences across various racial groups. The preponderance of the studies included in this review reported no differences in the diagnosis of depression and psychosis in Black and White individuals (Duveau et al., 2023; Duveau et al., 2024; Garland et al., 2015; Joy & Bartholomow et al., 2021; Kales et al., 2005a; Kales et al., 2005b; Littlewood, 1992). Our findings support previous research that reported no differences in the occurrence of depression in White and Black populations (Dunlop et al., 2003; Ettman et al., 2022). Our findings can be explained through the 'Black-White Mental Health Paradox', which suggests that although Black individuals are disproportionately exposed to stressors that impact on their well-being, they tend to have equal or better levels of mental health, compared to White individuals (Keyes, 2009). Despite this, our findings suggest no racial differences in depression diagnoses, this can be explained by the 'paradox', which suggests that Black individuals have a high stress threshold that protects them from mental health issues such

as depression. Together, this can lead to the assumption that Black people are less likely to exhibit depressive symptoms. As a result, it can be assumed that there may be a high proportion of undiagnosed and untreated depression in Black populations (Hasin et al., 2108), adding to the global disease burden and reducing overall quality of life in Black individuals (Taylor et al., 2023).

In relation to differences in psychosis diagnosis amongst individuals from different racial backgrounds, our findings contradict existing studies that have reported a higher incidence of psychotic disorders amongst individuals from Black backgrounds (Cerdeña et al., 2021; Cohen & Marino, 2013; Halvorsrud et al., 2019). Differences in research findings can be explained by the employment of a small sample size in one study and the inclusion of another study that was published more than twenty years ago (i.e., Di Caccavo et al., 2000; Littlewood, 1992). This calls into question the reliability and applicability of findings to current clinical practice (Patsopoulous & Ioannidis, 2009). It is a well-established observation that Black individuals are three to five times more likely to be diagnosed with psychotic-related disorders and consequently admitted to inpatient settings (Bignall et al., 2019). Hence, more experimental studies are needed to add clarity as to whether racial disparities exist in diagnosing psychotic and other mental health disorders.

However, two studies included in the review are suggestive of racial differences in mental health diagnoses. In Di Caccavo et al.'s (2000) study, a higher proportion of White individuals received an anxiety diagnosis, compared to their Black counterparts. Our finding is supported by research that found that Black individuals were less likely to be diagnosed with anxiety, compared to White and Asian individuals (Vanderminden et al., 2019). Results add credence to the consensus that race is a key factor in determining whether an individual receives a diagnosis

of anxiety and suggests that diagnostic decisions may be subject to clinician bias. We also found disparities in Post-Traumatic Stress Disorder (PTSD) diagnosis, with a higher diagnostic level reported in Black compared to White individuals (Duveau et al., 2024). It can be argued that PTSD is more prominent in Black populations due to their increased exposure to sociocultural and racial stressors, which causes them to frequently re-experience symptoms that reflect an enhanced memory for trauma-related threats (Cantor, 2009; Sibrava et al., 2019).

An explanation for racial disparities in diagnosis may stem from professionals' perceptions of symptom severity and attribution, which has been extensively researched in anxiety disorders. In particular, three studies in our review found that Black individuals were less likely to be perceived as symptomatic of anxiety symptoms, compared to other ethnic groups (Duveau et al., 2023; Duveau et al., 2024), and their symptoms were more likely to be attributed to underlying physical or internal factors (Gushue et al., 2022). Internal symptom attribution has been suggested to have a significant effect on anxiety diagnosis (Joy & Batholomew, 2021). Findings suggest that while Black individuals may experience symptoms of anxiety, they are less likely to receive an official diagnosis (Vanderminden et al., 2019), as in this population, anxiety disorders are often perceived as a somatic concern indicative of a physical illness (Hunter & Schmidt, 2010).

More research is needed to gain a full understanding of how anxiety and other mental health conditions present in minority populations, in order to improve professionals' perceptions of health (Carter & Walker, 2014). The correct conceptualisation of mental health symptoms is of vital importance for widening the gateway for equal access to appropriate diagnosis and medical interventions (Vanderminden et al., 2019).

The results from this review were not in support of the presence of racial biases in prescription recommendations for depression (Kales et al., 2005a; Kales et al., 2005b). Studies did not report differences in recommendations for antidepressants in Black and White individuals. Our findings are non-concordant with previous research that has reported a reduced likelihood of Black individuals (compared to White individuals), being prescribed antidepressant medication (Cerdeña et al., 2021; McGregor et al., 2020). Discrepancies in study findings may be due to the studies included in the review focusing their research on an older adult population. Although, existing research evidence supports the presence of racial disparities in decisions about medication treatment for older Black adults with depression (Simpson et al., 2007). However, study findings must be interpreted with caution, as it is important to clarify the degree to which professionals' beliefs about Black patients' adherence to medication, likelihood to sue for malpractice, and understanding of medication recommendations jointly impact on professionals' prescription recommendations (Kales et al., 2005a).

There were also no racial disparities reported for antipsychotic prescriptions in Black and White individuals with psychosis (Connolly & Taylor, 2016). Although the study's findings appear to be credible as they reference the British National Formulary (BNF) guidance on safe prescribing, previous research findings remain inconclusive. Mixed results have been reported, where some studies suggest the presence of racial differences (Das-Munshi et al., 2018; Williams et al., 2020) in antipsychotic medication prescription, and others do not (Connolly et al., 2007; Connolly & Taylor, 2016). In addition, as there seems to be more of a shared consensus on the presence of disparities in the type of antipsychotic medication prescribed to individuals from Black and White backgrounds (Beck et al., 2019; Das-Munshi et al., 2018), future research should shift the topic of research focus to this area.

Contrary to the above findings, racial disparities were reported for prescription decisions in Black and White patients presenting with anxiety. The White race was associated with increased prescriptions of Benzodiazepines (Duveau et al., 2023). As prescription involves a risk and benefit analysis, it is important for future research to uncover how clinicians reach different prescription decisions for individuals who present with anxiety from different racial backgrounds (Cook et al., 2018).

Strengths and Limitations

To the best of our knowledge, this systematic review was the first to investigate the presence of racial disparities in healthcare professionals' decision-making. The review used previous literature to examine the decisions made by healthcare professionals in patients presenting with mental health difficulties from various racial backgrounds. We identified 11 papers that met the inclusion criteria, five of which indicated a relationship between patient race and decision-making in healthcare professionals. The decision-making areas covered across papers included: treatment choice, diagnosis, symptom severity, attribution of symptom cause, medication prescription and medication dosage. Studies focused on one or multiple clinical decision areas. The findings reported by papers were mixed. Overall, however, studies support the presence of a weak relationship between patient race and healthcare professional decision-making. However, there is stronger evidence for differential decisions made by professionals in areas such as treatment choice, symptom severity and attribution of cause (Di Caccavo et al., 2000; Duveau et al., 2003; Duveau et al., 2024; Ezawa & Strunk, 2022; Gushue et al., 2022), compared to other areas (i.e., diagnosis and medication prescription).

In order to be able to draw conclusions from this review, the following limitations must be considered. Published papers included in the review were from the following countries: the

United Kingdom, the United States of America, and Belgium, which implies that inferences drawn from studies are limited to professionals who work in healthcare systems within these countries. We are aware that the healthcare systems in some countries are privatised, which may give rise to further disparities in professionals' decision-making in favour of those who are able to afford appropriate healthcare services (Courtemanche et al., 2018). The current review also remains limited to investigating the influence of race on decisions made by healthcare professionals. Future research should investigate the impact of other protected characteristics, such as gender, age, and disability (Gauci et al., 2022; Zikmund-Fisher et al., 2008) on healthcare professionals' decision-making.

Our inclusion criteria for this study meant that we only included papers in that were published in English, which limits the generalisability of our findings to decisions made by professionals working in English speaking populations (Jackson & Kuriyama, 2019). We also included studies with different sample sizes, which may have negatively impacted on the robustness of the study findings (Hong et al., 2020). The inclusion of predominately homogeneous convenience samples, with large White professional populations, makes it difficult to understand whether findings are applicable to professionals from other backgrounds. To get a broader picture on multiple factors that result in biased decisions by professionals, it would be helpful for studies to investigate the impact of healthcare professionals' characteristics, such as gender and age on decision-making (Mebane et al., 1999). Future research should review studies that have included attitude scales, in order to ascertain the extent to which professionals pre-existing biases impacts on their decision-making.

Study Implications

There are several implications that can be drawn from the findings of the systematic review. In relation to clinical practice, it is important for healthcare services to build professionals' awareness on matters of race and other protected characteristics, with the primary aim of reducing the impact of biases on decision-making. Training can be one-off or built into ongoing continuous development programmes for professionals to have the opportunity to build their confidence and sensitivity when working with patients on the protected characteristic list. A space for reflective practice should also be prioritised in healthcare settings, to provide professionals with a safe and comfortable space to raise practice concerns and learn how to address issues of difference under the assistance of other professionals, which can be a difficult area of discussion.

In addition to the clinical recommendations listed above, future research can also take on board the following suggestions. More research is needed that investigates mental health presentations in ethnic minority groups. In practice, this would allow for professionals to improve their efficiency when it comes to identifying mental health symptoms and offering high-quality and timely treatment to individuals from various racial backgrounds. In addition, it is important for future research to investigate how racial biases arise, and develop effective measures of bias that do not trigger confounders which often result in professionals adjusting their biased ideologies. Conducting future research focused on the extent to which biases impact on decisions made by clinicians will allow for existing treatment gaps to be narrowed and for the eradication of diagnostic and treatment inequalities.

Conclusion

This systematic review highlights the scarcity of research on the topic of racial disparities in decision-making by healthcare professionals. In particular, papers on this topic have

predominately focused on differential decisions pertaining to individuals from Black and White racial backgrounds. Hence, more research is needed which looks into a larger racial demographic of individuals, and explores disparities in individuals with intersecting characteristics. The papers included in this review indicated the presence of racial disparities in professionals' decision-making, especially in the areas of treatment choice, symptom severity, and attribution of treatment cause. Empirical support for the presence of racial biases was weaker in relation to diagnostic and prescription decisions. Hence, further research is needed that explores the characteristics of mental health conditions in minority backgrounds, and the origin, and prevalence of racial biases in healthcare professionals. Building on knowledge gaps in these areas will allow for fair decisions to be made by professionals who are often unaware of their unconscious biases, which skew the validity of their decisions and adds to the presence of existing health inequalities.

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Chapter 3

Bridging Chapter

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Bridging Chapter

The previous chapter aimed to explore literature on healthcare professionals' decision-making in individuals with mental health presentations from different racial backgrounds. In particular, the review focused on the presence of racial disparities in professionals making decisions in the following clinical areas: treatment choice, diagnosis, symptom severity, attribution of symptom cause, medication prescription and medication dosage. Due to the limited number of papers on this topic in the literature, a total of 11 papers were included in the review. Collated and synthesised findings from papers highlighted the presence of disparities in decisions made regarding individuals presenting with various mental health and neurodiverse conditions, especially in the areas of: treatment choice, symptom severity, and symptom cause attribution. In the above areas, professionals were found to make decisions in favour of White individuals. The findings from this review highlight the presence of biases in healthcare systems, within professionals who act as key decision-makers.

We attributed the presence of racial disparities amongst healthcare professionals to be the product of heuristics, also known as mental shortcuts, which come into play when individuals are faced with competing demands, complex information and short timeframes (Kahneman & Tversky, 1984). Although, the use of heuristics allows for healthcare professionals to problem solve and reach clinical decisions, in many cases, it can lead to inflexible thinking.

Biases can be confirmatory (i.e., when an individual searches for information that supports their beliefs and ignores data contradicting them) or anchoring (i.e., when an individual focuses on a single piece of information) (Ly et al., 2023; Nickerson, 1998). In addition to negatively impacting on the clinical decisions that professionals make, biases can also shape

professionals' perceptions of individuals, especially in relation to those who identify with Black racial backgrounds (Curley & Neuhaus, 2024; Gopal et al., 2021).

As, the systematic review provided evidence for the presence of racial biases in healthcare professionals' decision-making, we were curious about whether this phenomenon also occurred in other institutions. We were particularly interested in evaluating the presence of this phenomenon within the legal system in the UK. As an adjunct to our systematic review, we decided to conduct an empirical study that explored the nature of biases within jurors who act as key decision-makers within the Criminal Justice System (CJS).

Within the CJS, jurors are tasked with analysing large volumes of evidence in order to reach a deliberation (Brooks, 2017; Ivković & Hans, 2003). However, jurors' decision-making can also be impacted by biases which can negatively impact on the course of justice (Curley et al., 2022). This is in part, is due to the fact that jurors are legal lay persons who are not exempt from the influence of biases on their decision-making, due its natural occurrence within the human population (Emberton, 2021).

Literature in the field that has explored this topic, has solely focused on the impact of biases on jurors' verdict decisions as a product of the defendant's race (Devine & Caughlin, 2014; Mitchell et al., 2005). However, a small volume of research exists that has taken this subject matter further and looked into the impact of an expert witnesses characteristics on jurors' perceptions of credibility and legal decision-making (Carlson & Russo, 2001; Ivkovic & Hans, 2003). The focus on this research topic is of particular interest as jurors and other legal professionals frequently rely on expert witnesses to provide evidence on a case, which can be used to inform the trail and decision-making process (Krauss & Sales, 2001).

However, jurors have been found to frequently show biases in their decision-making when they are presented with expert witness evidence (Carlson & Russo, 2001; Ivkovic & Hans, 2003). In particular, previous research on this topic has found that experts who: possess particular physical attributes, identify with a particular race, gender, and/or profession, are associated with higher levels of credibility (Cohen & Peterson, 1981; Kipoulas et al., 2024; Mixon et al., 1995). In addition, studies have also shown that, through the process of persuasion, highly credible expert witnesses are more likely to have a greater impact on jurors' judgements and resulting verdicts (Bornstein, 2004; Munavu, 2008).

Therefore, for our empirical paper, in addition to evaluating the impact of expert witnesses' characteristics on jurors' perceptions of credibility, we decided to assess the influence of an expert witness's message on the verdicts that jurors reach. We thought that it was of great importance to explore this topic in order to gain a better picture of the factors that influence jurors' perceptions of credibility and their decision-making. For the purpose of the empirical study, we conducted an experiment to assess the impact of an expert's race and profession on mock jurors' perceptions of credibility, and their decision-making.

Similar to the systematic review, we focused on the concept of 'race' when assessing jurors' perceptions of credibility and verdict decisions. Research on this topic is of particular interest as the legal system has been identified as an institutionally racist structure that disadvantages individuals from minority groups (Pager & Shepherd, 2008). As a result of the presence of racial biases within this structure, there have been countless reports of forceful policing behaviour that negatively impacts on individuals from Black racial groups (Pager & Shepherd, 2008). Recent media coverage on the death of George Floyd – in the USA – fuelled the Black Lives Matter (BLM) movement, whilst serving as an example of the injustices that

people from minority groups experience in the hands of individuals who are employed to prevent rather than cause harm. In the UK, the BLM movement has led to more open discussions in stakeholders about matters of race. This has resulted in concerns being raised about the racist practices that exist in core institutions like the CJS and healthcare sector (Hodgkinson et al., 2021; Iacobucci, 2022).

A recent shift in the employment of experts has seen a rapid increase in other professionals such as psychologists, being summoned to court proceedings to provide evidence on matters of mental health (Mazur & Sztuka, 2021). Although, broadening inclusion has meant that professionals such as psychologists have been able to offer a more rounded viewpoint on mental health matters, by applying a biopsychosocial perspective to cases, psychiatrists still account for the large proportion of experts providing an opinion on matters to do with mental health, personality, and learning difficulties (Edens et al., 2012; Leslie et al., 2007; Mohtashemi et al., 2016).

We also believed that conducting our empirical study would allow for the impact of profession and race on mock jurors' perceptions of credibility and decision-making to be further investigated. For the purpose of our empirical study, a consultant psychiatrist and clinical psychologist were used to describe an expert witness who provided evidence for a defendant presenting with neurodiversity. These professionals were selected as they are both known to possess specialist knowledge on matters of mental health and neurodiversity. We predicted that jurors' perceptions of credibility and verdict decisions would vary depending on the expert witness's race and profession.

Exploring biases in individuals who act as key decision-makers within the healthcare and justice system, provides an avenue to explore factors that can lead to unfair conclusions being

reached in both institutions. We hope that findings from our studies would be used to increase awareness of the presence of unconscious biases in the health and legal sectors, and inform the development of policies and practices that positively inform associated professionals' decisions. Ultimately, we hope that our research can contribute towards the eradication of discriminatory attitudes and processes that continue to taint both systems.

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Chapter 4

Exploring the Impact of Expert Witness Profession and Perceived Race on Perceptions of Credibility and Decision-Making in Mock Jurors

Main Author: Anita Abbey*[1]

Supervised by: Dr Peter Beazley[1] and Dr Ian Edwards[2]

[1]*Department of Clinical Psychology, University of East Anglia, Norwich, UK*

[2] *School of Law, University of East Anglia, Norwich, UK*

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(Author guidelines found in Appendix C)

Author Note

*Correspondence concerning this article should be addressed to Anita Abbey

Norwich Medical School, University of East Anglia, Norwich Research Park,

Norwich, Norfolk, NR4 7TJ, UK.

Email: a.abbey@uea.ac.uk

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Introduction

The Criminal Justice System

In England and Wales, the use of legal laypersons to administer justice forms the cornerstone of the Criminal Justice System (Stirk, 2002). In the magistrates' court, where all criminal proceedings begin, lay individuals known as 'magistrates' deliberate on less serious criminal cases (e.g., motoring offences and common assault) (McBarnet, 1981). More serious criminal offences such as murder, rape, and robbery, are committed to the Crown Court, where legal laypersons referred to as 'jurors' decide on whether the defendant is guilty or not guilty, usually based on a unanimous verdict (Brooks, 2017). However, the processes that are required to be followed, to ensure the fair evaluation and application of evidence, are complex as they consist of specific rules and procedures (Crowder & Turvey, 2013). It is the role of the jury, which is comprised of 12 jurors, to hear evidence, and apply legal rules to determine true facts about the case in order to reach a fair verdict (Curley et al., 2022a; Ivković & Hans, 2003).

In court settings, the judge also plays an important role as an adjudicator who manages the behaviour of members of the courtroom and ensures that proceedings are done in a fair and law-abiding manner (Rowden & Wallace, 2018). Despite the presence of this safeguard, juries have been criticised for not always making the 'right' decisions, resulting in the jury process being undermined (Miller et al., 2021).

The Role of Juries

Although, juries have a duty to impact the course of justice, when they are presented with complex cases, they often turn to expert witnesses, who are accountable to a regulatory body, to provide expert evidence outside of the knowledgebase of the judge and jury (Cramer et al., 2009;

Rix, 1999). In mental health matters, psychiatrists have had a consistent role in providing evidence in the courts since the 18th century (Rix, 2015). Historically, medical witnesses were called to testify on cases of insanity and matters of mental health functioning before the court as their profession was believed to be highly prestigious and a well-regulated branch of medical science (Channaveerachari et al., 2022; Grobler, 2021). However, as the clinical understanding of mental health difficulties has improved, there has been an increase in the breadth of professionals providing evidence on mental health issues. This change has picked up momentum due to a shift in focus from 'expert status', which has allowed for professionals such as psychologists, who have specialist knowledge in mental health processes, to take on the role as expert witnesses in court (Levine, 1971).

Hence, the wider inclusion of mental health professionals in court proceedings is of particular importance given that 1 in 4 individuals with mental health difficulties will encounter the justice system (Cooper & Grace, 2016; Livingston, 2016). From this, jurors can benefit from gaining a wider perspective on the extent to which mental health difficulties contribute to key questions about a defendant's behaviour, such as recklessness or intention, which could be used to inform decisions (Van Es et al., 2020).

Expert Witnesses

The use of psychologists as expert witnesses is a relatively modern development in the courtroom where there has been a recent increase of their use in criminal trials (Kassin et al., 2001). As expert witnesses, psychologists can assist by completing developmental histories, personality and neuropsychological assessments, and psychological formulations, which provide a theoretical framework for the analysis of evidence, prediction of risk of violence, and engagement in criminal offences (Ireland, 2008). This evidence is used to add to the jury's

existing knowledge and understanding of the case, in order to inform the trial and jury decision-making process (Krauss & Sales, 2001).

Despite increased efforts to employ psychologists in court, their position as an expert witness has been impacted due to evidence suggesting that psychiatrists are perceived as holding more specialised scientific knowledge, resulting in the field of psychology being perceived as less theoretically plausible (Mazur, 2021). This has led to the preferential use of psychiatrists as experts to continue, where jurors possess a limited understanding of psychologist's expertise and perceive their understanding on mental health issues to be limited to mental health presentations such as personality disorders (Leslie et al., 2007). Even if psychologists were believed to possess knowledge gaps on the topic of mental health, research has found individuals with personality difficulties to account for up to 70% of the forensic population (Fazel & Danesh, 2002). This supports the increased need for psychologists to be used as expert witnesses in court, especially when dealing with complex legal issues concerning individuals with intersecting mental health and personality concerns (Nidich et al., 2016). Employing psychologists as legal experts could lead to better decisions about guilt for individuals with such diagnoses who are often seen as "bad" rather than "mad", and, hence, "less deserving" and "more responsible" for their actions (Khanom et al., 2009).

Due to the lack of shared consensus surrounding the use of psychological expert testimonies, there has been relatively little research on its impact on juror decision-making (Geiselman et al., 2002). As the use of experts has become commonplace within legal proceedings, research regarding how experts are perceived is of increasing importance (Bate, 2016). Existing research on this topic has found psychological testimonies to increase deliberation and encourage the jury to consider additional trial evidence - which supports the use

of psychological experts (Munavu, 2008). In addition to this, the increased employment of psychologists as expert witnesses has led to the adoption of a more rounded biopsychosocial approach to understanding criminality (Mohtashemi et al., 2016). However, a major factor that has limited the momentum of this shift has been the poor understanding of the differences in training pathways between psychologists and psychiatrists, where legal professionals often assume synonymity between both roles (Shapiro et al. 2015).

Expert Witness Testimonies

Moreover, although collectively, expert witness testimonies provide a solution to the juries' overreliance on less plausible material to inform their decisions, it creates a secondary problem. This is because, juries often find it difficult to comprehend expert evidence and apply it to criminal cases, which may impact on the course of justice and lead to wrongful convictions (Bromby, 2011; Hans & Saks, 2018). A major concern has been that psychological expert testimonies may cause juries to overcorrect their verdicts in attempts to remain fair in their judgements (Munavu, 2008). Another potential challenge that may arise is that if jurors are unable to process the information provided in the testimony, they may be less able to control their biases (Thomas, 2010). Hence, although jurors attempt to make rational decisions, this comes at a cognitive cost of processing high volumes of information (Lester & Visschers, 2012).

The evidence above implies that jurors often act as "cognitive misers" who rely on timesaving mental shortcuts known as heuristics to optimise their mental effort in processing information (Crisp, 2015). Research has demonstrated the challenges in maintaining a non-biased perspective when exposed to jurors who share similar viewpoints can enhance the presence of bias due to group polarisation effects. This is where a strong consensus in opinion

about a trial, makes jurors unable to maintain impartiality and therefore, reach extreme decisions (Haegerich et al., 2013; Ruva et al., 2014).

It has also been suggested that the perceived quality of an expert testimony may impact on the receptivity of the testimony, and, consequently, the level of persuasiveness which can impact on judgements and sentencing decisions (Bornstein, 2004). As with most forms of communication, research suggests that characteristics of the message such as language, speech pattern and voice can negate the content of the message (Cramer et al., 2011; Wilcox & NicDaeid, 2018). This process is captured by the Elaboration Likelihood Model (ELM; Petty & Cacioppo, 1986), of persuasion, which suggests that the high cognitive demands placed on jurors' evaluations of messages can be swayed by superficial features of an expert's message rather than the content (Bornstein & Greene, 2011; Daftary-Kapur et al., 2010; Ivković & Hans, 2006).

Source Credibility

There are cues used by jurors that go beyond the testimony content, that determine an experts' impact on the trial processes, and verdict decisions (Cooper et al., 1996; Schuller et al., 2005). A factor of interest has been 'source credibility' which has been found to play an important role in persuasion (Liu et al., 2015). Credibility can be defined as the tendency for the receiver of a message to believe or trust the person delivering the message with minimum doubt about being misinformed (Umeogu, 2012). Research suggests that source credibility has an influence on persuasiveness and favourable outcomes from the receiver (Tormala et al., 2006). In expert witness research, credibility has been conceptualised as a multi-dimensional concept that has been extensively researched using the Witness Credibility Scale (WCS), where credibility has been defined by the following constructs: trustworthiness, confidence, likeability, and

knowledge (Brodsky et al., 2010). Although, the scale was designed to be an overall measure of credibility, factors on this scale have also been found to work separately in determining an expert's credibility rating (Fuchsberger, 2013). For example, empirical studies have found strong associations with confidence and likeability on perceptions of credibility, and overall levels of persuasion (Brodsky et al., 2009; Cramer et al., 2009).

Using the WCS, research has attempted to identify factors, beyond content, that influence credibility. Factors identified have included the personal characteristics of trial jurors and defendants, type of offence, strength of the prosecution' s evidence, and expert credentials (Devine & Caughlin, 2014; Flick et al., 2022; Pornpitakpan & Francis, 2000; Poulin, 2007; Thomas, 2010). Less salient factors that have been identified include appearance, body language, level of self-confidence, gender, and race (Boohar et al., 2020; Cramer et al., 2009; Jones et al., 2023; McKimmie et al., 2013). Yet, out of these factors, the area that appears to be under-researched is the role that an expert's race plays on decision-making in the courtroom.

Credibility and Profession

Existing evidence suggests that race impacts on perceived credibility which may shape decisions made outside the context of the courtroom. The direct impact of race on perceived credibility is reported to be bi-directional where it can either enhance or detract from the potential credibility of a message, and subsequently impact on attitude change (Wilson & Sherrell, 1993). An early study by Khatib (1989), investigated the impact of race (White vs. Black) and occupation (Professor vs. Preacher) on source credibility. Participants were asked to complete a questionnaire where they had to decide on whether they agreed with a statement made from one of the above sources. Findings suggest that in comparison to the occupation condition, the 'race' condition yielded more significant results, where individuals were more

likely to agree with statements produced by a source from a similar race. In particular, this finding was more pronounced in White participants who consistently rated the White source as 'highly credible'. Results are in support of Freiden's (1984) research, who also found congruency in race between the audience and source to predict source credibility ratings. Whilst it is recognised that this research is dated, there remains an abundance of evidence for the presence of racial stereotyping in society (Fiske, 2000), which could potentially impact on perceptions of credibility.

Credibility and Race

Although evidence suggests that race impacts on perceived source credibility, only a handful of studies have examined this phenomenon within the context of expert witness research. Few studies in this area have predominately focused on manipulating the race of the defendant. Current findings in this area of research remain controversial. Findings from Thomas' (2010) study, suggest that juries are 'fair' as no evidence of discrimination was found when jurors were tasked with making decisions about defendants from minority backgrounds. However, a meta-analytic study suggests that jurors are more likely to be lenient and issue 'not guilty' verdicts to defendants of the same race (Devine & Caughlin, 2014), whilst they tend to pay more attention to legally relevant material when the defendant is from a different race (Sargent & Bradfield, 2004). This finding may be partially explained by the 'Watchdog Hypothesis' which suggests that in Western societies, White jurors are more likely to act as "watchdogs" and attend to legally relevant information when the defendant is Black, in efforts to be seen as fair and less racist (Sargent & Bradfield, 2004). In-line with the Aversive Racism Theory, findings also highlight the presence of underlying schemas that are dissonant, as whilst holding negative schemas about

individuals from particular races, White jurors also work towards upholding cultural values of fairness, social justice, and equality (Dovidio et al., 2004).

Source Credibility and Expert Witness Race

Limited research has directly investigated the impact of expert race on credibility and decision-making in court. The few studies that exist have yielded mixed results. Some studies suggest that White jurors are more likely to deem a defendant as guilty when they are represented by a Black defence attorney (compared to a White defence attorney), and often view same-race attorneys as more honest than those from other races (Cohen & Peterson, 1981; Mixon et al., 1995). In addition, more recent research documented in Munavu's (2008) thesis, found individuals with high scores on racism questionnaires to frequently rate Black experts as poorly educated and unprofessional. However, previous research has found no support for the presence of own-race bias, where Black female experts were perceived as more persuasive than their White female counterparts (Memon & Shurman, 1998).

Similar results were documented by Miyatake (1999), who explored the impact of the race of a psychologist testifying in court as an expert witness on judgements of credibility. The study found no significant differences in perceptions of credibility in experts from different races. However, this study has been criticised for making the race of the expert witness salient which may have led to mock jurors correcting for racial biases (Munavu, 2008). It is recommended that future studies use less salient factors to indicate expert race, in order to evoke more explicit racial attitudes.

Current Study Aims and Rationale

To the best of our knowledge, there are a limited number of studies that explore the combined effect of different expert attributes on jurors' perceptions of credibility and decision-making. Hence, we decided to expand on the work of Kipoulas et al. (2024), who explored the combined effect of gender (male vs. female) and profession (consultant clinical psychologist vs. consultant psychiatrist), on expert credibility ratings given by mock jurors, by substituting expert gender with expert race (White vs. Black).

As the aforementioned research reported significant findings, we wondered whether psychologists or psychiatrists from particular racial backgrounds would be perceived as less credible. We also believed that it would be useful to assess the combined effects of expert witness profession and race on jurors' verdict decisions. We decided to focus on race as an attribute due to the increased awareness of racist practices within the criminal justice system, where minoritised groups within the workforce tend to be targets of racial discrimination (Pager & Shepherd, 2008).

However, due to the mixed findings surrounding the impact of race in juror decision-making studies, we did not make directional predictions, noting that it would be reasonable to argue from both perspectives. The first perspective would predict that a Black expert witness would be rated as less credible, and associated with lower levels of persuasiveness, than the White expert witness, in-line with the similarity-leniency effect, due to racial biases. The second perspective, drawing on the watchdog hypothesis, would suggest that the Black expert would experience no difference in, or higher credibility ratings compared to their White counterpart, due to efforts by jurors to appear as less racially biased.

We reasoned that there could be an interaction between profession and race also, given the fact that the clinical psychology workforce is over-representative of people from White

ethnic backgrounds (Muthy, 2022), and the psychiatric profession is far more ethnically diverse (Royal College of Psychiatrists, 2019). These population differences could have, over time, influenced wider social attitudes about the 'expected' racial origin of a psychiatrist or psychologist. Therefore, we reasoned that racial biases towards the Black expert, in either direction, would be more pronounced in psychologists where perceived race would have a more pronounced 'mismatch' with population expectations of a clinical psychologist.

In line with previous research that has documented the complicated role that biases play in jurors, this study is of vital importance as findings would provide a better understanding of how biases impact on credibility rating. This in turn, would allow for our understanding of the impact of this on the process of the jury achieving a fair trial (i.e., guilty vs. non-guilty verdict), and the severity of sentencing (Ryan & Westera, 2018). Through our findings, we aim to inform practices and policies within the criminal justice system and shed light on how safeguards can be introduced to protect individuals from biases – i.e., allowing for information about an expert's identity to 'blind' during criminal proceedings.

Research Questions

1. To what extent does an expert witnesses' profession impact on the credibility rating given by jurors on the WCS?
2. To what extent does an expert witnesses' race impact on the credibility rating given by jurors on the WCS?
3. To what extent does the combined effect of expert witness profession and race impact on the credibility rating given by jurors on the WCS?

4. To what extent do expert witness characteristics (i.e., profession and race) and/or credibility rating predict jurors' verdict decisions (i.e., guilty vs not guilty)?

Methods

Design

The study adopted a 2 (Expert witness profession: consultant psychiatrist versus consultant clinical psychologist) by 2 (Expert witness perceived race: Black versus White), between-subjects factorial design. The two independent variables were expert witness profession and race, which were manipulated by randomly assigning participants to experimental conditions. There were a total of four experimental conditions which included a: 1) Black consultant psychiatrist, 2) White consultant psychiatrist, 3) Black consultant clinical psychologist and 4) White consultant clinical psychologist. The two dependent variables in this study were credibility rating and juror verdict. Expert witness credibility was operationally defined by the Witness Credibility Scale that measures constructs such as trustworthiness, likeability, confidence, and knowledge, which are indicative of credibility. Juror verdict was measured through a decision tool which required participants to indicate a 'guilty' or 'not-guilty' verdict, during a mock jury stimulation trial.

Participants

A total of 148 participants were recruited for the study (n=76 female, and n=72 male). Participants ranged in age from 20 to 72 years (M= 42.5, SD= 14.5 years). In the sample, 89% of individuals were from a White British background, with 64.6% of the sample possessing a type of degree (i.e., foundation to doctorate degree). A convenience sampling method was used to recruit participants through the Prolific crowdsourcing platform. Individuals who participated in

the study received a payment of £2.20 for their time spent completing the 20-minute study. Reimbursement was calculated in-line with Prolific price recommendations, which suggests that participants should be paid £6 for a 60-minute study.

To guide our recruitment of participants we carried out a power calculation using G*Power (Faul et al., 2007). We predicted that findings from the two-way ANOVA and logistic binary regression would yield at minimum a medium effect size based on findings from Kipoulas et al.'s (2024) study, which this study is an extension of, who found a small-medium effect size for the impact of profession and gender on jurors' perceptions of expert witness credibility, and verdict rating. G*Power indicated that in order to detect a power of 80% and a medium to large effect size of 35%, with a significance level of .05, a total of 94 participants were needed to proceed with the study. The final sample satisfied these requirements.

Inclusion and Exclusion Criteria

To make the current study realistic, inclusion criteria were developed to match criteria of the Juries Act (1974), which details the type of individuals that are allowed to partake in jury service and those that are to be disqualified or excused, in England and Wales. Hence, individuals who met the following criteria were deemed eligible for the study: 1) aged 18-76 years, and 2) registered to vote and lived in England and Wales for at least five years (since the age of 13). Individuals were ineligible for the study if they were not fluent in English and/or indicated that they were currently on bail or had previously been sentenced to imprisonment or a term of detention for 10 years or more.

Materials

Demographic Questionnaire. The questionnaire collected demographic information on age, ethnicity, gender, and geographical location. The questionnaire consisted of a series of open and closed questions, and participants' responses were anonymised (Appendix D).

Mock Juror Instructions. Juror instructions adapted from (https://masonlec.org/site/files/2011/09/2011-GMU-Mock-Trial-Final-Jury-Instructions-and-Verdict-Form-2011-09-19.pdf), were given to participants. Instructions were issued by the judge and encouraged participants to consider the following concepts: burden of proof, and unreasonable doubt when deciding on a verdict (Appendix E). Juror instructions were incorporated into the study to reduce the risk of ambiguity in verdict decisions by encouraging jurors to attend to information about the case in a non-biased way (Pfeifer & Bernstein, 2003; Shaked-Schroer et al., 2008).

Case Vignette. Case vignette material was adapted from Kipoulas et al.'s (2024) study, who edited publicly available transcripts on criminal cases (i.e., Elliott v C, 1983; R v G, 2003; R v Stephenson, 1979), in England and Wales, to create the vignettes employed in this study. The vignette used in this study described a defendant called Mr Brown who pleaded guilty to the offence of arson, which had resulted in damage to hospital property (Appendix F). The vignette was reviewed by the authors of the paper who had a background in law and psychology, and extensive knowledge on the topic of expert witness testimony.

Similar to Kipoulas et al.'s (2024) study, we decided portray Mr Brown as an individual with a diagnosis of a mild learning disability (LD) and ADHD. We chose these two diagnoses as individuals with these disorders are more prone to committing the criminal offence of arson, due to impairments in particular parts of the brain that are responsible for inhibiting undesired behavioural responses (Bush, 2010; Collins et al., 2021). Hence, individuals with these disorders

are known to be susceptible to an increased risk of vulnerability, delinquency and risk-taking behaviour due to higher rates of impulsivity, mood dysregulation and a lack of self-control (Fletcher & Wolfe, 2009; Noel, 2018). In addition, it was believed that both professionals would be able to provide expert knowledge on individuals with both clinical presentations.

Individuals in all experimental conditions received the same case vignette.

Expert Witness Testimony Vignette. The expert witness testimony was written by a (Black or White) consultant psychiatrist or consultant clinical psychologist who had 18 years' experience of working within the NHS, with specialist knowledge in Learning and Neurodevelopmental disorders. The vignette referred to the expert's profession four times (Appendix G). In-line with the methods used in previous research, the race of the expert witness was manipulated using surnames that reflected either a Black or White ethnic origin, as a means of reinforcing racial stereotypes and eliciting biased judgements (Bertrand & Mullainathan, 2004; Munavu, 2008).

We used two surnames to represent each ethnic group to ensure that the race manipulation worked, in the absence of a pictorial representation of the expert's race. The surnames used for the Black expert witness were Dr Achebe or Dr Mensah, which were generated from the following source (https://www.momjunction.com/articles/most-common-african-last-names-surnames_00457713/). African-origin surnames were used due to them not being derived during British colonisation, making them less English sounding. The surnames used for the White Expert witness were Dr Smith or Dr Jones, which were generated from the following source ((https://www.independent.co.uk/news/uk/home-news/the-25-common-surnames-britain-family-history-university-west-england-bristol-uk-a7423196.html). Unfortunately, at the time of conducting this study, a journal source could not be identified for extracting surnames, thus, journalistic reporting was relied upon.

Witness Credibility Scale (WCS). The WCS scale was used to assess credibility ratings in mock jurors following a stimulation trial. The measure consisted of 20-items rated on a 10-point Likert scale (1=strongly disagree and 10=strongly agree), that loaded onto the following credibility constructs: confidence, likeability, trustworthiness, and knowledge (Appendix H). An overall high score indicated a higher credibility rating. Internal consistency values have been reported for each subscale (.88 – confidence, .87 – likeability, .90 – knowledge, and .94 – trustworthiness) (Brodsky et al., 2010). The overall internal consistency for the scale in this study was high (α=.97).

Juror Verdict Tool. The juror verdict tool consisted of two responses which were guilty or not guilty. We decided to use this tool as it reflected how real jurors deliberate on verdicts in England and Wales when deciding on criminal cases (Ewanation & Maeder, 2021).

Juror Verdict Confidence Tool. A likert scale was used to assess confidence in participants' verdict decisions. The scale ranged from 0 to 100 (0 = not certain and 100 = complete certainty), with a high score indicating certainty in the verdict decision made.

Psytoolkit. This programme was used to construct the online experiment by inputting data on the system using scripted terms (Stoet, 2010). The Psytoolkit platform was chosen as it is student friendly due to the basic knowledge of coding needed, and its high level of replicability in generated results (Kim et al., 2019).

Prolific. This crowdsourcing platform was used to recruit online participants (https://www.prolific.co/) and administer the study. Collected data did not contain identifiable information. This platform was used for data collection due its production of high-quality data

and lower rates of participant bias, compared to other platforms (Chandler et al., 2014; Peer et al., 2017).

Manipulation Checks. Manipulation checks were employed to ensure that participants were aware of the manipulations used in the study and attended to experiment instructions (Aronow et al., 2019; Sigall & Mills, 1998). Questions were asked about the following manipulations: the nature of the crime, object involved in the crime and profession of the expert witness. Participants were provided with 2 to 3 options to select from, in a multiple-choice format.

Procedure

The study was conducted using Prolific as a platform. The study was advertised online, and prospective participants were invited to partake in the study after they had completed an eligibility screening tool. Participants who were eligible for the study, based on the studies inclusion criteria, were invited to read the study information sheet (Appendix I). Participants who were interested in completing the study indicated their consent by completing a form (Appendix J). The online study involved a mock jury stimulation trial where participants read a case vignette. During this task, participants were provided with the following instructions "please imagine that the following summarises Mr Brown's account of his actions". After the task, participants read the expert witness testimony vignette. Participants were randomly assigned to an expert witness condition using the Psytoolkit software where each condition was coded into different blocks and the software chose one condition at random to allocate individuals into during the course of the study. In each condition, participants read a vignette written by a consultant psychiatrist or clinical psychologist who was either White or Black. Following this, participants answered manipulation check questions.

In the second phase of the study, participants received juror instructions, which required them to act as jurors and reach a verdict decision based on the information they had received in the vignettes. Participants indicated their decisions using the juror verdict tool, and the confidence they had in their decision using the juror verdict confidence scale. Then, participants were asked to complete the WCS, where they indicated how credible they perceived the expert witness in the vignette to be. Participants completed the demographic questionnaire. Before completing the study, participants were provided with the right to withdraw from the study without disclosing a reason. At the end of the study, participants received a debrief about the full aims of the study (Appendix K) and were provided with information on wellbeing support (Appendix L). The study lasted for 20 minutes in duration.

Ethical Considerations

Ethical approval was sought before conducting the study through the Faculty of Medicine and Health Sciences Research, at the University of East Anglia (Appendix M).

Results

A total of 148 participants completed the online study. However, only 63% of the data provided by participants was included in the final statistical analysis. The reasons for data exclusion were as follows: two or more incorrect answers on the manipulation check (n=4), missing values in collected data (n=8), individuals not satisfying study inclusion criteria due to forensic history (n=6), and participants taking nine minutes or less to complete the study (n=36). We decided to exclude participants based on study completion time, due to researchers being aware of extremely short completion times being indicative of a lack of motivation for participants to complete the study as instructed, or due to random responding (Pinsoneault,

2007). As a result, a total of 94 participants' data files were included in the final sample used for statistical analysis. Table 1 shows demographic information for the final sample.

Table 1

Demographic information for study participants (n=94)

	Mean *(M,* years)	**Standard deviation (*SD,* years)**
Age	43.23	14.74
	Number (n)	**Percentage (%)**
Gender		
Female	54	57.18%
Male	40	42.82%
Ethnic group		
Asian British	13	13.82%
Black British	3	2.81%
Mixed British	1	1.34%
White British	77	82.03%
National Identity		
English	68	72.32%
Welsh	7	7.79%
Other	19	19.89%
Education		
Secondary school (up to 16 years, GCSEs)	15	16.31%
Higher or Secondary or higher Education (A-levels, BTEC, etc)	18	19.27%
Foundation degree	9	10.08%
Undergraduate degree	35	37.74%
Master's degree	13	13.65%
	4	2.95%

Doctorate degree/PHD		
Employment Status		
Employed	64	68.26%
Unemployed	9	9.28%
Student	7	7.74%
Retired	7	7.73%
Unable to work due to health reasons/disability	5	5.47%
Prefer not to say	1	1.52%

Statistical Analysis

All analyses were conducted using IBM statistics 28.0. Two-way between subject's ANOVAs were conducted to test for main and interaction effects for expert witness characteristics (i.e., profession and race), and witness credibility scores (i.e., overall credibility scores and scores on the WCS subscales). Binary codes were used to represent the expert witness conditions. For profession "0" indicated psychologist and "1" indicated psychiatrist. For race "0" indicated Black and "1" indicated White. Scores on the WCS were reverse coded (i.e., unlikeable recoded to likeable).

Most assumptions of the ANOVA were met apart from the "normality assumption", as the data from our sample was not normally distributed. However, given the relatively large sample size and the similar negative skew in all groups, the two-way ANOVA analysis was considered appropriate (Maxwell & Delaney, 2004). Prior to conducting analyses, we mean centred the following variables: overall credibility rating and subscale ratings given on the WCS, to reduce the occurrence of multicollinearity between variables (Olvera Astivia et al., 2019).

Two-way ANOVA results

The findings from this study did not support our hypothesis that there would be differences in jurors' overall credibility ratings as a function of the perceived race and the profession of the expert witness (See Table 2).

Table 2

Marginal Means and Standard Deviations for Overall Credibility Rating and Credibility Subscales

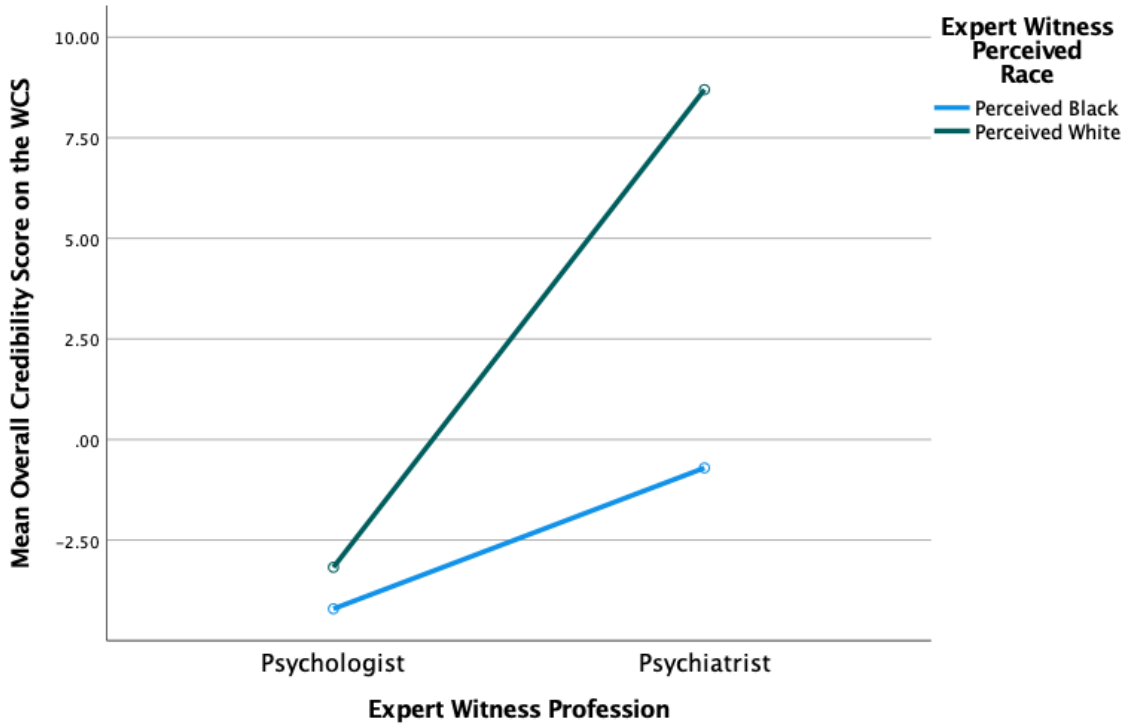
Witness Profession	**Perceived race**	**N**	**Overall Credibility**	**Likeability**	**Trustworthy**	**Confidence**	**Knowledge**
psychologist	Black	19	-4.21 (30.54)	-.54 (8.13)	-8.71 (7.73)	-1.49 (7.61)	-.87 (7.73)
	White	30	-3.17 (32.63)	-.39 (8.32)	-1.29 (8.07)	-.94 (8.58)	-1.29 (8.07)
	Total	49	-3.57 (31.52)	-.45 (8.16)	-1.13 (7.86)	-1.15 (8.14)	-1.13 (7.86)
psychiatrist	Black	23	-.71 (33.77)	-1.67 (6.46)	.40 (9.59)	1.02 (10.79)	.40 (9.59)
	White	22	8.69 (38.40)	2.76 (10.08)	2.09 (10.01)	1.50 (8.65)	2.09 (10.01)
	Total	45	3.89 (36.01)	.49 (8.63)	1.23 (9.72)	1.26 (9.69)	1.23 (9.73)
Total	Black	42	-2.29 (32.01)	-1.16 (7.19)	-.17 (8.72)	-.11 (9.46)	-.17 (8.72)
	White	52	1.85 (35.32)	.93 (9.15)	.13 (9.01)	.09 (8.61)	.13 (9.01)
	Total	94	.00 (33.77)	.00 (8.35)	.00 (8.84)	.00 (8.95)	.00 (8.83)

The results from the analysis show no significant differences in overall credibility ratings between the consultant psychiatrist and consultant clinical psychologist expert witnesses, F (1, 90) = 1.173, p = .282. Findings also suggest no significant difference in overall credibility ratings

for the Black or White expert witnesses, F (1, 90) = .540, p= .464. Contrary to our prediction that there would be an interaction effect of profession and race on overall credibility rating, our results were non-significant, F (1, 90) = .348, p= .557 (see Figure 1).

Figure 1

Mean Overall Credibility Score on the WCS for Expert Witness Profession and Perceived Race conditions.



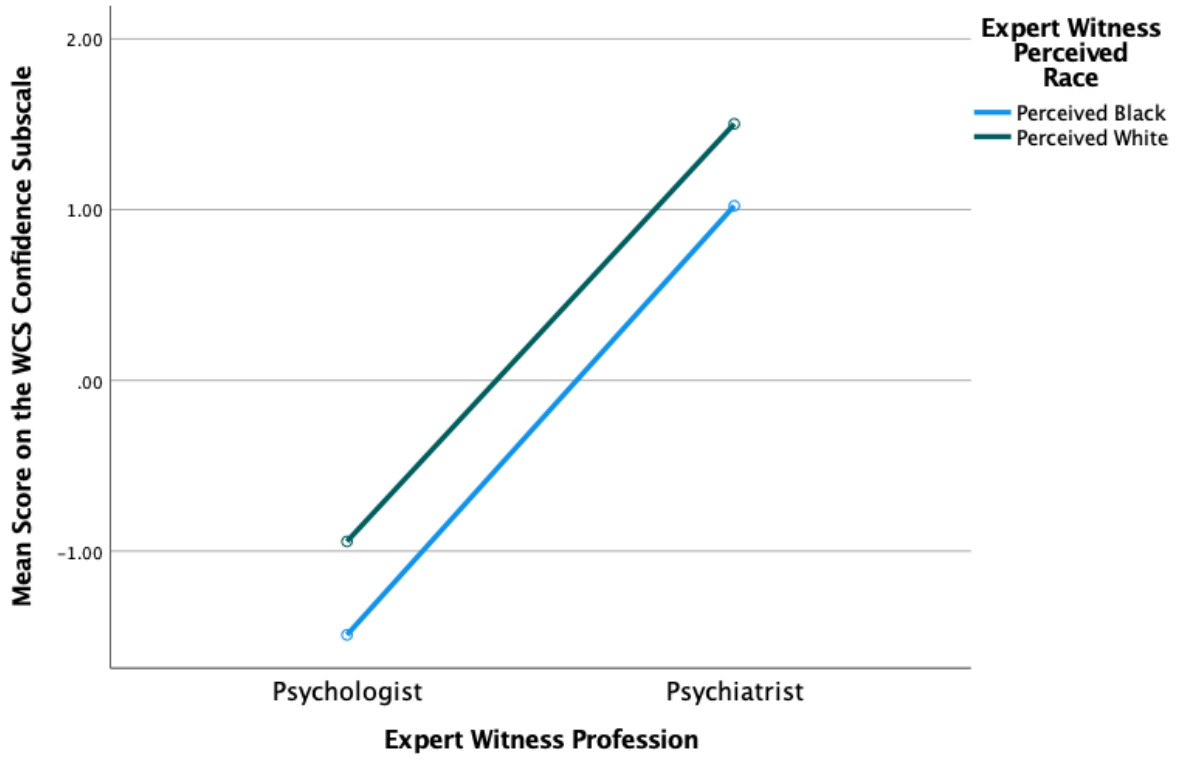
Confidence Subscale

There were no significant differences in confidence ratings on the WCS, between the consultant psychiatrist and consultant clinical psychologist expert witnesses, F (1, 90) = 1.729, p= .192. We also found no significant difference in confidence ratings for the Black or White expert witnesses, F (I, 90) = .074, p=.786. Contrary to our prediction that there would be an

interaction effect of profession and race on confidence rating, our results were not significant, F (1, 90) = .000, p= .986 (see Figure 2).

Figure 2

Mean Confidence Score on the WCS for Expert Witness Profession and Perceived Race conditions.



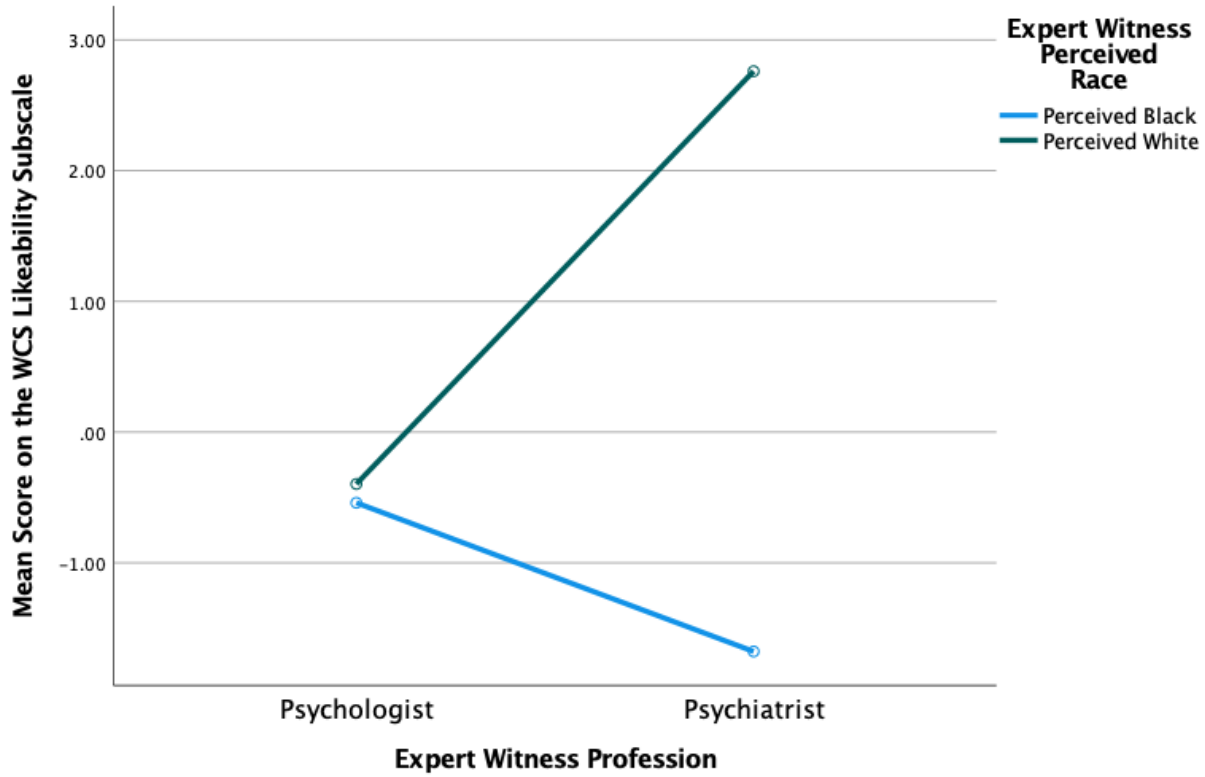
Likeability Subscale

There were no significant differences in likeability ratings on the WCS, between the consultant psychiatrist and consultant clinical psychologist expert witnesses, F (1, 90) = .336, p= .564. We also found no significant difference in likeability ratings for the Black or White expert witnesses, F (1, 90) = 1.729, p= .192. Contrary to our prediction that there would be an

interaction effect of profession and race on likeability rating, our results were not significant, F (1, 90) = 1.519, p= .221 (See Figure 3).

Figure 3

Mean Likeability Score on the WCS for Expert Witness Profession and Perceived Race conditions.



Trustworthiness Subscale

There were no significant differences in trustworthiness ratings on the WCS, between the consultant psychiatrist and consultant clinical psychologist expert witnesses, F (1, 90) = .891, p= .348. We also found no significant difference in trustworthiness ratings for the Black or White expert witnesses, F (1, 90) = .817, p= .368. Contrary to our prediction that there would be an

interaction effect of profession and race on trustworthiness rating, our results were not significant, F (1, 90) = .264, p= .608 (See Figure 4).

Figure 4

Mean Trustworthiness Score on the WCS for Expert Witness Profession and Perceived Race conditions.

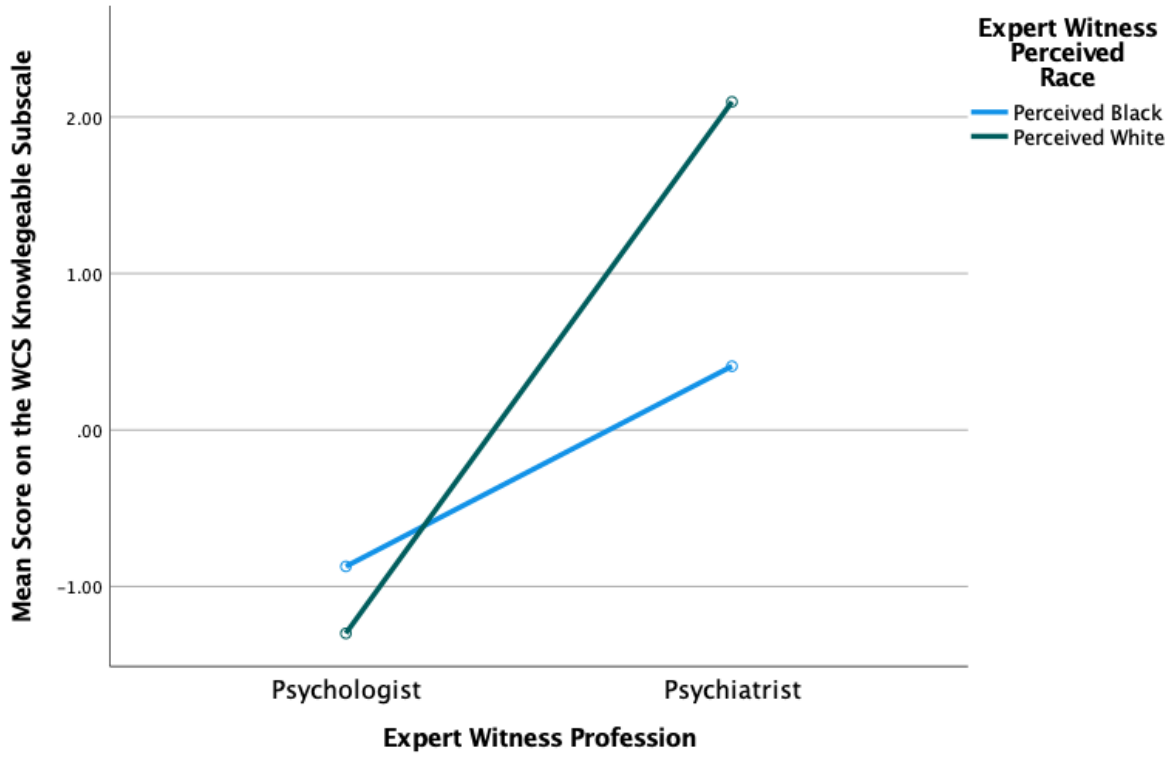
Knowledgeable Subscale

There were no significant differences in knowledgeable ratings on the WCS, between the consultant psychiatrist and consultant clinical psychologist expert witnesses, F (1, 90) = 1.585, p= .211. We also found no significant difference in knowledgeable ratings for the Black or White expert witnesses, F (1, 90) = .115, p= .735. Contrary to our prediction that there would be an

interaction effect of profession and race on the knowledgeable rating, our results were not significant, F (1, 90) = .325, p= .570 (See Figure 5).

Figure 5

Mean Knowledgeable Score on the WCS for Expert Witness Profession and Perceived Race conditions.



Hierarchical Binary Logistic Regression results

A hierarchical binary logistic regression analysis was conducted to assess whether jurors' verdicts (1=guilty vs 2= non-guilty) could be predicted when controlling for: expert witness profession and expert witness race (Step1), overall credibility rating (Step 2), and the following

interaction terms (overall credibility*profession), and (overall credibility*race) (Step 3). All assumptions for the regression analysis were met.

The logistic regression model's goodness-of-fit was assessed using a likelihood ratio test which yielded a significant chi-square statistic of X^2 (5) = 13.704, p=. 018. This meant that the null hypothesis could be rejected, as the model explained 18.1% of the variance in juror's verdicts (Nagelkerke R^2). The model correctly predicted 59.6% of cases.

Race (β= -.648, p=.156) and credibility rating*race (β= .012, p=.443), were non-significant predictors of jurors' verdicts. This suggests that the likelihood of receiving a not guilty verdict did not differ for the defendant when represented by a Black or White expert witness, irrespective of the credibility rating that they previously received from jurors (See Table 3).

Profession (β= .973, p=.053), was a marginally significant predictor of jurors' verdicts. The odds ratio calculated at 2.645, suggests that the likelihood of receiving a not guilty verdict is marginally higher for defendants who were represented by a consultant psychiatrist compared to a consultant clinical psychologist, as an expert witness.

However, overall credibility rating (β= -.043, p=.040) and credibility rating*profession (β= .040, p=.050) were significant predictors of jurors' verdicts. For overall credibility rating, the odds ratio calculated at .958, suggests that the likelihood of receiving a not guilty verdict is higher for defendants who were represented by an expert witness who was rated as highly credible, as opposed to an expert with low levels of credibility. In terms of credibility rating combined with profession, the odds ratio calculated at 1.012, meant that the likelihood of

receiving a not guilty verdict was equal for defendants represented by either a consultant psychiatrist or a consultant clinical psychologist.

Table 3

Results from Hierarchical Binary Logistic Regression Analysis

Predictor Variables	β	*SE* β	Wald's X^2	*p*	Odds ratio (e^{β})
Intercept	-.182	.483	.142	.706	.833
Profession	.973	.504	3.73	.053*	2.645
Race	-.648	.457	2.01	.156	.523
Credibility	-.043	.021	4.22	.040**	.958
Credibility*Profession	.040	.021	3.83	.050**	1.041
Credibility*Race	.012	.016	.588	.443	1.012

** *Refers to significance at a 5% level.*

* *Refers to significance at a 10% level.*

Discussion

The primary aim of this study was to explore the effect of expert witnesses characteristics on mock jurors' credibility ratings. It was hypothesised that there would be a significant difference in mock jurors' credibility ratings for experts from different professions. We predicted that the consultant psychiatrist would be rated as more credible than the consultant clinical psychologist. However, contrary to our hypothesis, we did not find a significant impact of expert profession on overall credibility rating, as indicated by the WCS. Although marginal means, indicated small mean differences in credibility ratings, where the consultant psychiatrist was rated as more credible overall, observed differences were not significant. Hence, mock jurors did not perceive any differences in credibility in both expert professionals' testimonies. Our non-significant findings may reflect challenges in members of the public (i.e., mock jurors), in understanding the nuanced differences in the clinical roles of both professionals (Angermeyer et al., 2017). This may have impacted on jurors' judgments concerning credibility.

For individual subscales on the WCS, we did not identify statistically significant main or interaction effects. However, looking at our data, in terms of profession, it appears as though the consultant psychiatrist expert received higher mean ratings on all subscales, although findings were non-significant. The highest difference in ratings was on the confidence and knowledgeable subscales. This partially explains why the psychiatrist received a higher overall credibility rating, as both confidence and knowledge have been strongly associated with perceptions of credibility (Birch et al., 2020). The lowest difference in ratings was on the likeability subscale, which suggests that although there were small differences in likeability ratings between both expert professions, this difference may have been of significant importance, as likeability is deemed to be an important indicator of credibility and persuasion (Younan & Martire, 2021). Overall, the

non-significant differences in credibility ratings, suggests that the field of psychology may be held in higher esteem than initially anticipated. In addition, jurors may only perceive existing differences to exist in professionals' conceptualisation and treatment of mental health disturbances.

As we did not find statistically significant differences on the impact of profession on expert witnesses credibility ratings, we recommend that future research should aim to make comparisons between professions where there is a greater difference in level of training and knowledgebase, such as between doctors and nurses (Godlee, 2008). This would, reduce the nuanced differences between both professions. Prospective studies can also create low to high expert training and expertise conditions as seen in Ferreira and Wingrove's (2023) study, which will allow for researchers to further explore the extent to which expert profession impacts on jurors' perceptions of credibility.

In our current study, the expert's profession was mentioned predominantly at the beginning of the expert testimony vignette. This may have impacted on participants' ability to correctly process and recall the profession of the expert witness and resulted in individuals' data files being removed from the final data set, as a result of failing the manipulation check. To increase the success of priming participants in each profession condition, future studies should also refer to the expert's profession (i.e. job title) towards the end of the expert testimony vignette. This would increase the likelihood of effective recall, due to a tendency for individuals to retain information presented at the beginning and the end of a statement, as a result of the primacy and recency effect (Glanzer & Cunitz, 1966).

We also hypothesised that there would be a difference in mock juror's credibility rating for experts from different racial backgrounds. In our current study, we did not find a significant

impact of race on credibility rating, indicated on the WCS. This meant that the race of the expert witness did not predict the verdict issued by jurors. However, our table of marginal means suggests a non-significant small mean difference in credibility rating as a product of race, where on average, White expert witnesses received higher credibility ratings by mock jurors.

Contrary to the watchdog hypothesis, findings from this study suggest that White jurors were slightly less receptive to receiving information delivered by the Black expert witness, and, were therefore less likely to perceive them as a credible source (Sargent & Bradfield, 2004). To further test for the presence of pre-existing racial attitudes in mock jurors, future studies should administer the Single Category Implicit Association Test (SC-IAT; Karpinski & Steinman, 2006). This will allow for the presence of pre-existing unconscious biases in mock jurors to be assessed, and for the exploration of the extent to which these biases impact on the process of decision-making in jurors.

In addition, our current study manipulated the concept of 'race', using ethnic origin surnames to represent the race of the Black and White expert witness. In this study, participants were randomly assigned to one of two conditions for each racial category of the expert witness. We used two ethnic-origin surnames to represent racial categories in order to ensure that one of the two surnames would activate socio-demographic stereotypes (Stelter & Degner, 2018). However, a major limitation of this study remains that we are unaware of the extent to which the generated surnames represent intended racial categories. Hence, future studies could address this limitation by generating a pilot study that incorporates preliminary manipulation checks to test the association of surnames with specific ethnicities or races. This would allow for the impact of other demographic factors (i.e., educational level and income), to be ruled out when assessing for the direct impact of race on jurors' perceptions of expert witness credibility.

In future research, if it is not feasible to conduct a pilot study, it would be beneficial for studies to assign race associated names to experts that have been used in previous research to manipulate the perception of race (Bertrand & Mullainathan, 2004; Martiniello & Verhaeghe, 2023). This will allow for valid inferences to be drawn about the impact of jurors' perceptions of race on their ratings of expert witness credibility. To further improve the reliability of the race manipulation used in this study, future research would benefit from making the race manipulation more salient. This can be achieved by using video stimuli to provide a visual representation of the expert witness (i.e., hair type, eye colour and accent), which is usually not present in written vignettes (Haut et al., 2021). This will provide a direct measure of the impact of manipulating the expert witnesses' race on perceptions of credibility in mock jurors. However, when manipulating race visually, researchers must ensure that the manipulation is not too salient, to prevent participants from becoming aware of the full nature of the study. Otherwise, this may result in participants becoming highly motivated to overanalyse the information provided by the black expert when they are conscious of appearing prejudiced (Johnson & Aboud, 2017), as predicted by the watchdog hypothesis.

We also wonder whether the race manipulation was limited due to the presence of an unprecedented priming effect that occurred due to the perpetrator of the arson crime being named 'Mr Brown'. In particular, we wondered whether the name was associated with the colour Brown. This may have influenced the impact that the expert race manipulation intended to have on activating biases and altering perceived credibility ratings. Future research should seek to find out potential assumptions that participants made about Mr Brown's race, to shed light on the underlying cognitive processes that could have led some individuals to associate the name with a particular race. This is of particular importance as White jurors have been found to treat the out-

group (i.e., minority defendants), in a disparate manner when they are tasked with reaching a verdict (Mitchell et al., 2005).

A similar effect has also been reported in Black jurors known as the 'Black sheep effect', where they are more likely to judge in-group members more harshly (i.e., Black defendant), when they exhibit less socially desirable behaviour, in an attempt to distance themselves from the 'Black sheep' of their social group and maintain a positive group image (Marques et al., 1998). Moreover, to enrich the research methodology used in this study, it would have been useful to administer the demographic questionnaire towards the end of the study to reduce the likelihood of participants changing their behaviours due to becoming aware of the focus of the study.

We did not observe a significant impact of profession combined with perceived race on overall credibility rating as indicated on the WCS. Our study results did not support our prediction that the Black expert witness from a clinical psychology or psychiatry background would receive extreme scores. Hence, our findings suggest that although both professions are predominately composed of White individuals, jurors did not experience a strong sense of 'Whiteness' (Angyal, 2021), when making decisions. Hence, this meant that experts who were perceived as White did not significantly evoke higher credibility ratings in jurors. This implies that the White expert may not have been consciously perceived to possess an array of positive traits that were not shared by the Black expert, due to "White privilege" (McIntosh & Privilege, 1989; Odunsanya, 2017).

In addition to assessing the impact manipulating an expert witnesses features on the perceived credibility ratings issued by mock jurors, a secondary aim of the study was to assess whether expert witnesses race and profession, credibility rating, and credibility rating combined with race or profession, predicted jurors' verdicts. We were particularly interested in assessing

the impact of these variables on the verdicts issued by mock jurors due to previous research suggesting that mock jurors who perceive experts as highly credible are more likely to perceive a defendant as less guilty during mock jury stimulation trials (Kipoulas et al., 2024; Krauss & Sales, 2001).

We found that credibility significantly predicted the verdict sentence given to the defendant. In particular, our findings indicated that an expert witness who is rated high in credibility is likely to yield more non-guilty verdicts. Our results align with research that has found expert witness credibility to be positively congruent with juror verdicts and severity of sentencing (Cramer et al., 2009; Ellison & Munro, 2009). This finding is further explained by the Cognitive Response Theory (Greenwald, 2014), which states that all attitude change occurs as a result of the thoughts and beliefs that a receiver has about the person delivering a persuasive message.

Findings also add credence to the presence of cognitive biases which influence the judgements made by jurors in court (Estrada–Reynolds et al., 2015). For example, research suggests that individuals rely on decisional shortcuts such as heuristics, derived from peripheral cues, particularly when they do not have the ability or motivation to process complex information (McKimmie et al., 2004). Although, heuristics are sometimes useful, they can lead to errors in judgement (Gigerenzer & Goldstein, 1996). Hence, it is important for research to focus on identifying the mental shortcuts that jurors use when presented with evidence from expert witnesses, in order to reduce the likelihood of biased decisions occurring during the course of jury deliberations (Curley et al., 2022b).

Further, in this study, we found that credibility combined with profession significantly predicted jurors' verdicts. This indicates that an expert's qualifications and skillset are competencies that

comprise judgements of a sources' credibility (Morgan et al., 2023). In addition, our results suggest that there is no association between an expert witnesses race and verdict sentence. Hence, our results indicate that credibility may be synonymous with persuasiveness. Future research should measure mock jurors' beliefs towards the message delivered by experts from different races. This can be achieved by getting experts to indicate whether they find a message to be 'favourable' or 'unfavourable' in nature, which will allow for the level of persuasiveness in the expert witnesses' message to be assessed.

Moreover, results from the current study should be interpreted with caution as mock jurors were required to issue a verdict for Mr Brown who had pleaded guilty to the offence of arson. As juries are not required to participate in court proceedings where an individual has pleaded guilty, this component of the study can be considered as a methodological error. Hence, the applicability of findings to real world juror decision-making can be improved by requesting for mock jurors to predict sentencing severity instead. For example, future studies can include a task which requires mock jurors to indicate the sentence length that they believe Mr Brown is likely to receive from a Judge, based on the evidence presented by expert witnesses from different professional and racial backgrounds. Expanding on this research study to further explore the relationship between perceived expert witness credibility, and sentencing decisions is of vital importance as previous research has indicated that there is a positive association between increased credibility and harsher sentencing (Bornstein, 2004; Brodsky et al., 2009; Cramer et al., 2009).

Methodological Limitations

The findings reported in this study should be interpreted by taking into account the following methodological limitations. Participants were recruited through convenience sampling

which means that they were self-selected. This may have resulted in biased findings as individuals who volunteered to participate in the study may have had different characteristics to those who did not participate (EWAG & Craig et al., 2021). For example, the study consisted of predominantly White individuals, which makes the sample of participants non-racially homogenous. Hence, we are unable to draw inferences about Black mock jurors' perception of expert witnesses in the courtroom. In addition, the employment of a large sample, represented by a high preponderance of individuals who hold degree level education, may result in the recruited sample holding more liberal views compared to individuals in the wider society. Therefore, in order to increase confidence in our study findings, future research should aim to employ a more diverse population of mock jurors.

The current study used an online mock jury stimulation trial to gain insight into jurors' perceptions of expert witnesses who possessed particular characteristics, and the impact of this on the verdict decisions reached by jurors during court proceedings. Although mock jury stimulation trials allow for researchers to study jurors' behaviours outside of court settings, the employment of this method has been critiqued for its lack of mundane realism (Bornstein et al., 2017; Herriott, 2022). Therefore, this limitation must be considered when drawing conclusions from this work about real jurors. Hence, future research should attempt to recruit real jurors, who may be more attentive to facts and provide more insight into 'how' and 'why', jurors reach particular verdict decisions (Herriott, 2022; MacCoun, 2004). To improve on current research methodology, a group deliberation process should be included rather than relying on individuals' own judgements (Chalmers & Leverick, 2016), to improve the ecological validity and confidence in results.

Although, prolific has been commended for being an effective platform for collecting data, we must recognise that this surveying technique may further increase population bias. Despite manipulation checks being implemented to ascertain data quality, future research should invite participants to complete the online study in a more controlled environment to reduce confounds and increase study replicability (Haut et al., 2021).

Practical Implications

It is important to identify the biases that exist in members of the jury to develop a better understanding of its origin and impact on decision-making in the Criminal Justice System. Our study aimed to identify biases that impact on perceptions of expert witness credibility and the implications of these biases on jurors' verdict decisions. Findings from this study can be used to gain insight into the development of interventions that can be used to overcome biases in the courtroom. From this, strategies to prevent biases could be uniquely developed depending on the identified root cause of bias, to further inform amendments to existing guides such as the Crown Court Compendium, used by judges to direct jurors during deliberation.

Further, educating jurors on the topic of biases, could have a significant impact on their decision-making, especially if discriminatory beliefs are due to a lack of experience and low confidence in carrying out their job role. Moreover, research identifying additional factors that independently or jointly impact on perceived credibility and jury decision-making is warranted. Although, it is difficult to predict the magnitude of the impact that biases have on jurors' judgements and decisions, developing an understanding of jurors' attitudes can provide key information about techniques and procedures that could be introduced in various sectors to successfully eradicate biases.

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Data Availability Statement: Study data is available through the primary researcher on request.

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Chapter 5

Discussion and Critical Evaluation of Thesis Portfolio

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Summary of Findings

Systematic Review Findings. The systematic review synthesised data from 11 quantitative studies that focused on the topic of racial disparities in healthcare workers' decision-making in the following areas: treatment choice, diagnosis, medication prescription, symptom severity, and attribution of symptom cause. Overall, for most areas of focus, study findings appeared to be mixed in terms of the presence of the differential decisions made by professionals for patients from a White ethnic group compared to other ethnic minority groups.

In relation to treatment choice, professionals were found to be more likely to recommend a solely medical intervention, or a combination of medical and non-medical interventions, for white patients with depression (Duveau et al., 2024). Further, professionals were more likely to recommend validation strategies for Black patients accessing CBT, compared to White patients, where cognitive strategies were more likely to be suggested (Ezawa & Strunk, 2022). Yet, Di Caccavo et al.'s (2000) study, did not find evidence for the presence of racial disparities in treatment choice, and in 1 to 6-month follow-up decisions (Kales et al., 2005b). However, differences were found in onward referral choices for Black individuals who were more likely to be referred to external services, compared to their White counterparts (Duveau et al., 2023).

For diagnostic decisions, findings supporting the presence of racial disparities were also mixed. There were no racial differences reported for the diagnosis of depression, psychosis, ADHD, and autism, in White and racial minority patients (Duveau et al., 2024; Garland et al., 2015; Kales et al., 2005a; Kales et al., 2005b; Littlewood, 1992). However, we found evidence of an increased likelihood for White individuals to be diagnosed with an anxiety disorders (Di Caccavo er al., 2000), and a higher prevalence of PTSD in Black individuals (Duveau et al., 2023). Despite this, we found strong evidence for the presence of differences in the decisions

made about symptom severity, where healthcare professionals were more likely to perceive symptoms reported by Black patients as less severe (Duveau et al., 2023; Duveau et al., 2024; Gushue et al., 2022). Nonetheless, our findings were non-specific to anxiety-related symptoms (Joy & Bartholomew, 2021). However, healthcare providers were also more likely to attribute the cause of minority individuals' symptoms to internal and physical factors (Gushue et al., 2022).

In terms of prescriptive medication decisions, the evidence for the presence of differential decisions for individuals from minority groups was weaker. Individuals from White or minority ethnic backgrounds were not likely to receive different antidepressant or antipsychotic medication recommendations from healthcare professionals (Connolly & Taylor, 2016; Kales et al., 2005a; Kales et al., 2005b). However, for psychotic-related disorders, Black individuals were rated as being less likely to adhere to treatment, understand recommendations, and sue for malpractice, compared to White individuals (Connolly & Taylor, 2016). For the treatment of anxiety disorders, White individuals were more likely to be prescribed Benzodiazepines, compared to Black individuals (Duveau et al., 2023).

Empirical Paper Findings. The empirical paper component to the thesis portfolio focused on two primary research aims. The first aim was to assess whether jurors' perceptions of expert witnesses credibility varied as a function of their characteristics, such as race (Black or White), and profession (consultant psychiatrist or consultant clinical psychologist). Our second aim was to explore whether the credibility rating assigned to an expert witness by jurors impacted on the verdict that was given to a defendant during a mock jury stimulation task. Credibility ratings were indicated using the WCS, with a high score indicating increased perceptions of credibility. We also assessed ratings on subscales of the WCS, which included

measures for expert witness confidence, likeability, trustworthiness, and knowledge. Verdict ratings were indicated on a rating scale, which consisted of "guilty" or "not guilty" responses.

In relation to witness credibility ratings, there were no significant differences in the ratings assigned by jurors for: overall credibility, confidence, likeability, trustworthiness, and knowledge, as a function of the expert witnesses' race or profession. We also did not find any significant interactions for expert witness profession and race, on ratings of overall credibility, and the credibility subscales listed above. These findings suggest that jurors' perceptions of an expert witnesses overall credibility and ratings of confidence, likeability, trustworthiness, and knowledge, did not vary based on the expert's race or professional background. We can also infer that belonging to a particular racial group, in addition to working within a particular professional role, did not impact on jurors' perceptions of credibility for the expert witness.

For our second research aim, we focused on exploring whether an expert witnesses credibility rating impacted on the verdict decisions made by mock jurors. We found credibility rating, and credibility rating with profession, to be significant predictors of verdict sentence. This finding suggests that the more credible an expert witness is perceived to be, the more likely jurors are to reach a guilty verdict. Further, our findings suggest that a highly-credible expert, who holds a particular professional role, is more likely to significantly influence the verdict decisions reached by mock jurors. In particular, in our study, we found that a consultant clinical psychologist who was perceived as highly credible elicited more guilty verdicts amongst mock jurors.

In contrast to the findings from our systematic review, we did not find support for the impact of expert witness race on the credibility ratings or verdict sentences issued by mock jurors. Hence, our findings suggest that the disparities present in the healthcare system, in

relation to making medical decisions about patients from minoritised backgrounds, may not be as evident in the CJS. This is particularly the case in circumstances where jurors are faced with making judgements about experts from minoritised groups, which often informs their verdict decisions. This result was particularly unexpected as we believed that racial biases would exist to a similar degree in the CJS, as the structure is renowned for practices that are systemically racist (Pager & Shepherd, 2008). Although, our findings suggest that unconscious racial biases may be more prevalent in the healthcare system, caution should be exercised when making generalisations from our study, due to its methodological limitations.

Although insignificant findings were reported on the impact of race on jurors' perceptions of credibility and verdict decisions, it does not discredit the fact that individuals who act as key decision-makers within the CJS are prone to unconscious biases, given the fact that biases are innate in nature. Hence, in order to shed further light on this phenomenon, more research is warranted on this topic. More importantly, together, our research findings call for the need of increased educational opportunities for professionals to learn about unconscious biases and its impact on health and judicial outcomes. This will allow for individuals within both healthcare and legal professions to take a proactive stance in challenging the negative attitudes that exist in both sectors. Further research in this area, would allow for individuals from minoritised backgrounds to receive equal outcomes in health settings, and be perceived as highly credible in legal settings.

Critical Evaluation

Systematic Review Critical Evaluation. The systematic review used a narrative synthesis approach to collate information on findings from 11 published quantitative papers that focused on the topic of racial disparities in healthcare workers' decision-making. To the best of our

knowledge, it was the first systematic review to focus on this niche topic area. The review thoroughly examined the decisions made by professionals working in Western healthcare systems (i.e., the UK, Europe, and the USA), and in various areas of decision-making, such as treatment choice, diagnosis, symptom severity, attribution of symptom cause, and medication prescription and dosage. By conducting research in this area, this review enables gaps in the literature to be filled, and allows for sensitive matters, such as racial differences, to be explored. The study also provides an avenue for researchers to gain a better understanding of the presence of biased decisions in professionals. Findings from this study will allow for: awareness to be raised on the topic of (unconscious) biases and alterations to be made to existing service practices that continue to be negatively impacted by the biased decisions that professionals make. As our systematic review consisted of quantitative papers, this meant that our findings were objective, which allows for reliable inferences to be drawn (Queirós et al., 2017).

However, caution must be taken when making inferences from this review due to the majority of included papers originating from Western cultures. Hence, making generalisations to non-Western cultures may act as an imposed etic, where practices reported by healthcare professionals in the West are assumed to be similar to those from other cultures (Berry, 1999). The review also excluded studies that were not published in English, which further limits the potential for inferences to be made about how professionals practice in non-English speaking countries (Jackson & Kuriyama, 2019). The preponderance of our studies employed an opportunity sampling technique which could been prone to sampling bias, where recruited participants were not representative of our target healthcare professional population. As such, findings may not fully capture the presence of racial disparities amongst the targeted population of healthcare professionals (Gonzales et al., 2016).

The systematic review focused on the concept of race when researching disparities. Other protected characteristics, such as gender, age, and ability, should be further researched, as they may give rise to a unique pattern of disparities in healthcare professionals' decision-making (Scheim et al., 2021). The sample population was mostly composed of medically trained professionals, with a limited number of studies examining decisions made by individuals with a psychological therapeutic background. This highlights the need for more quantitative research to be published that looks into racial disparities in these professionals, in order to gain a more accurate picture of the pattern of disparities that exist in a different population of healthcare professionals.

Moreover, the findings from our systematic review highlight the need for professionals to develop their awareness on matters of race and other protected characteristics. This can be achieved by offering professionals training opportunities that will enable them to work towards addressing their biases, which often lead to disparities in race related clinical decisions. This will also allow for professionals to develop their confidence in discussing the differences that exist in individuals' health presentations when they come into contact with healthcare services.

In addition, further research is needed on the expression of mental health presentations in individuals from various ethnic groups. This will allow for professionals to develop their understanding on this topic, which in turn, may reduce the level of undiagnosed mental health conditions in individuals from minority ethnic groups. It is also important for service evaluations to be conducted in healthcare settings to understand areas that need improvement in the running of services, in order to ensure that they are running efficiently, and are easily accessible to all by accommodating culturally appropriate adaptations. Further research needs to be conducted to

inform the development of an effective measure for implicit biases, which focuses on assessing the impact of biased thinking on the decisions that healthcare professionals reach.

Empirical Paper Critical Evaluation. The empirical project contributes to the body of research in the criminal justice system. It adds to the evidence base of expert witness literature, especially in relation to the topic of biases in jurors' perceptions and decision-making. Our evaluation of the impact of expert witnesses characteristics (i.e., race and profession), on jurors' credibility ratings and verdict decisions, was particularly a niche area in the literature which warranted further research attention.

Our research study employed a validated credibility measure (Brodsky & Pivovarova, 2016), which ensured that the data obtained from the study was valid and reliable (Mohajan, 2017). The study also recruited a sample size that was determined by a post-hoc calculation, which increased the likelihood of generating accurate results (Andrade, 2020). A major strength of the study was the use of manipulation checks to ascertain the effectiveness of the race and profession manipulations in the study. This allowed for inattentive participants' data to be filtered out from the results generated by statistical analyses (Hauser & Schwarz, 2015).

However, it is important to highlight that the empirical project has room for improvement. In particular, for the perceived race manipulation, ethnic origin surnames were used to represent the Black and White expert witness. Although, at the time of designing the project, we thought that this was an effective way of implying the race of the expert, we are unsure about whether solely manipulating the name of the expert was enough to activate a race association. Therefore, future research can overcome this issue by using names that have been employed by previous research to ensure that racial priming occurs during the course of the study (as seen in Bertrand & Mullainathan, 2004).

It can also be queried as to whether assigning the name 'Mr Brown' to the defendant was a confounding variable that would have negatively impacted on the results of the study. In particular, as research has found that a defendant's race can impact on jurors' decision-making, we wondered whether this phenomenon occurred in our study (Bradshaw, 2003), which may have had an immeasurable impact on jurors' decision-making. Moreover, in the stimulation trial, mock jurors received a testimony written by the expert, which referred to the expert's professional status only once. In hindsight, the testimony script should have made the expert's profession known to mock jurors multiple times, in order to increase active recall through the primacy and recency effect (Glanzer & Cunitz, 1966). Conducting this empirical project has highlighted the need for more research to be done that focuses on the presence of pre-existing racial attitudes in jurors. Future studies can administer the Single Category Implicit Association Test (SC-IAT; Karpinski & Steinman, 2006), to investigate the presence of unconscious biases and the extent to which this impacts on perceptions of credibility in individuals from different racial and professional backgrounds.

In addition, a limitation of the current study remains the absence of a pilot phase, due to the time pressures and reduced financial resources, during the course of the three year doctoral course. This meant that the number of components that could be added to the main study was limited. Hence, the absence of a pilot phase meant that we were unable to assess the feasibility of the empirical study and troubleshoot methodological issues that may have hindered our ability to collect reliable data (Leon et al., 2011). In hindsight, the incorporation of a pilot study would have allowed for us: to test the extent to which the ethnic-origin surnames represented intended racial categories, and to directly measure the impact that these names had on jurors' perceptions of expert witness credibility.

On a service level, our research echoes the increased need for professionals working within public sectors, such as the criminal justice system, to address their disparate attitudes towards individuals from various racial backgrounds. Working towards addressing biases in legal professionals would allow for the criminal justice system to build a diverse workforce that upholds just and fair values. However, there remains a tremendous amount of work that is needed to achieve this goal. A good place to start working towards obtaining this goal would be for individuals to conduct more academic and service-level research projects focused on investigating the unconscious beliefs that professionals hold. Research in this area is of particular importance as biases continue to impact and shape the way services are delivered, and accessed by individuals from different backgrounds.

Final Reflections

I have found working on this thesis portfolio to be one of my greatest achievements on training. When faced with this task, I initially found it difficult to believe that I could complete this project and document all of my work together in such a cohesive way. At times, I have found it somewhat challenging to view the portfolio as an ongoing piece of work. Indeed, I experienced periods where I was highly motivated to work on this project, followed by periods where my progress was hindered, due to procrastination. This change in effort level was quite frustrating at times, as it often set me back in terms of the personal timelines that I set for myself to complete components of the portfolio.

My empirical paper took precedence over my systematic review, which left me with less time to complete this component of the portfolio. I think a reason for this may have been due to feeling apprehensive about carrying out a systematic review, as a result of my lack of prior experience in this area. However, with the support of my supervisor, and taking time out to read

existing literature, I was able to figure out what was required of me to successfully conduct a systematic review.

I was particularly interested in researching 'biases' in systems, especially in relation to race, due to identifying with a minority group myself and my awareness of the disparities that individuals from underrepresented groups face daily whilst navigating life. I was particularly hesitant about putting this idea forward, as I am aware that race can be a sensitive topic that researchers may not want to venture into. I was pleased that I was able to go ahead with conducting research in this area, as I am aware of the scarcity of literature on this topic. However, I sometimes found myself feeling exhausted when reviewing literature, as I was reminded of the challenges that individuals with similar racial identities as myself faced in several sectors. I believe that this had a huge impact on delays in completing my portfolio, as the research topic triggered emotional burnout.

Putting together this portfolio has allowed me to further develop my research skills. Indeed, I feel more competent when it comes to developing a research question, collecting data, analysing results, and writing up research findings in a more sophisticated way. Additionally, I am more aware of what a systematic review entails, and what is required to ensure that appropriate papers and techniques are used to synthesise data. I have also improved my writing skills, as I am better able to clearly communicate information to my reader.

As a direct result of this project, I also learnt to work well under pressure and to juggle academic, research, and placement demands, even though it has not always been easy. I am also more accepting of change. Indeed, due to my previous project falling through, I had to generate a new topic of research, with the help of my supervisor. I have learnt that rather than dwell on situations that are out of my control, it is of more benefit to focus on things that I can control and

work towards. This newly developed positive attitude has allowed me to learn a lot about myself during a short space of time, and to develop my skills as a researcher with the help of my supervisor(s).

Conclusion

Overall, the thesis portfolio aimed to address the question about whether biases exist amongst professionals in both health and legal settings. The papers included in the portfolio were particularly focused on exploring the impact of professionals' biases on decision-making. The findings from the systematic review adds to the existing body of literature that suggests the presence of racial disparities in healthcare workers' treatment decisions. Moreover, findings from our empirical paper also postulates the presence of racial disparities amongst jurors when they are faced with making decisions about an expert witnesses credibility and verdict sentences.

Together, the results gathered from both papers calls for further research to be conducted that is focused on exploring the topic of biased decision-making within various professionals. If future research were to focus on this area, it would allow for a better understanding of the origin and impact of professionals' biases to be developed. One of the major implications that our study highlights is the need for 'safeguards' to be put in place in order to ensure that individuals with protected characteristics (i.e., race, gender, and disabilities), are not adversely impacted by the discriminatory practices that continue to plague both the healthcare and legal sectors.

Together, the results gathered from both papers call for further research to be conducted that is focused on exploring the topic of biased decision-making within different professionals. If future research were to focus on this area, it would allow for a better understanding of the origin and impact of professionals' biases to be developed. One of the major implications that our study

highlights is the need for more safeguards to be put in place in order to ensure that individuals with protected characteristics (i.e., race, gender, and disabilities), are not adversely impacted by the unconscious biases held by healthcare professionals and jurors. Moreover, it is of heightened importance for stakeholders in both sectors to provide professionals with: 1) a space for reflecting on existing policies, and 2) training opportunities that attempt to eradicate biased practices which continue to plague both systems.

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APPENDICES

Appendix A

Author Guidelines for Submission to Social Science & Medicine

Introduction

Important information for prospective authors

To ensure fairness to all submissions, the *Social Science & Medicine* Editorial Offices cannot consider any queries related to the appropriateness of a manuscript that is submitted via email outside of the formal submission system. We endeavor to make timely assessments on all manuscripts that we receive through the online submission system, and authors will receive a response once the appropriate assessment of the manuscript has been completed. If you are unsure whether or not your paper is within scope, please take some time to review previous issues of the journal and the Aims and Scope at https://www.sciencedirect.com/journal/social-science-and-medicine/about/aims-and-scope.

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The journal publishes the following types of contribution:

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• Indicate clearly if color should be used for any figures in print
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Sex generally refers to a set of biological attributes that are associated with physical and physiological features (e.g., chromosomal genotype, hormonal levels, internal and external anatomy). A binary sex categorization (male/female) is usually designated at birth (""sex assigned at birth""), most often based solely on the visible external anatomy of a newborn. Gender generally refers to socially constructed roles, behaviors, and identities of women, men and gender-diverse people that occur in a historical and cultural context and may vary across societies and over time. Gender influences how people view themselves and each other, how they behave and interact and how power is distributed in society. Sex and gender are often incorrectly portrayed as binary (female/male or woman/man) and unchanging whereas these constructs actually exist along a spectrum and include additional sex categorizations and gender identities such as people who are intersex/have differences of sex development (DSD) or identify as non-binary. Moreover, the terms ""sex"" and ""gender"" can be ambiguous—thus it is important for authors to define the manner in which they are used. In addition to this definition guidance and the SAGER guidelines, the resources on this page offer further insight around sex and gender in research studies.

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• Supply files that are too low in resolution.
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Appendix B

Search Strategy used for Systematic Review

Search Terms:

- Terms relating to race and ethnicity: race OR raci* OR ethni* OR minorit* OR discrim* OR "cultural di*"

AND

- Terms relating to mental health: mental* OR psychia* OR depressi* OR schizo*, OR ptsd, OR "post traumatic", anxiety, psychosi*, psychoti*, "personality disorder*", borderline, "emotionally unstable", EUPD, BPD, bipolar*, "obsessive compulsive", OCD, "antisocial personality*", manic OR mania

AND

- Terms relating to type of experimental method used: scenarios, vignette, "experimental design".

Appendix C

Author Guidelines for Submission to Psychiatry, Psychology and Law

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We are committed to promoting and increasing the visibility of your article. Here are some tips and ideas on how you can work with us to promote your research.

Appendix D

Demographic Questionnaire

Please answer the following:

Age: Please indicate your age in the box on the right-hand side.	
Gender: What is your gender?	Female Male Other (please specify) Prefer not to say
Ethnicity: What is your ethnic group?	White Mixed or Multiple Ethnic Groups Asian or Asian White Black African/Caribbean or Black British Other Ethnic Group Prefer not to say
Location: Where do you live?	England Wales Other (please specify)
Minimum duration at Location: Have you lived in England or Wales for any period of at least 5 years since you were 13 years old?	Yes No
Socio-economic status: Please indicate your post code	_____
Education: What is your highest level of educational attainment?	**Level 1** – Less than GCSE **Level 2 -** GCSE/ Level 2 NVQ **Level 3 -** A-level/Level 3 NVQ **Level 4** – Level 4 NVQ/ HNC **Level 5** – Foundation degree/HND/Level 5 NVQ **Level 6** – BSc/B/ Degree Apprenticeship **Level 7** – Master's degree/ PGCE/Postgraduate diplomas and certificates **Level 8** – Doctorate or PHD
Employment status/category: Do you work as one of the following?	Full time (37+ hours) Part time (less than 37 hours) Unemployed, currently seeking work Unemployed, not currently seeking work Retired Not able to work due to disability Prefer not to say
Occupation: **What is current your occupation?**	_____
Accommodation information: What accommodation type best describes where you live?	Own House Housing association flat Rented house Maisonette Other (please specify)

Forensic History: In the last 10 years, have you served any part of a sentence of imprisonment or a sentence of detention, received a suspended sentence or been subject to a community order/sentence?	Yes (If yes, for how long) No
Current criminal conviction: Are you currently on bail for criminal proceedings?	Yes No

Appendix E

Mock Juror Instructions

Juror instructions: Letter from the Judge

Dear members of the jury,

As jurors, it will be your job to decide whether Mr. Brown (the defendant) is 'guilty' or 'not guilty' of the offence of criminal damage, based on the case report that you have previously read.

To decide on this case, you must consider the evidence. You will need to decide on whether the facts in this case are based on evidence that you have read. Evidence consists of the expert witnesses' testimony and the exhibits about Mr. Brown's case. Anything that you have seen or heard outside the courtroom is not evidence. You may not use any other source of information to help you decide this case. Your decision must be beyond reasonable doubt, and you must be sure that Mr. Brown did in fact cause damage to hospital property.

If you are sure that Mr. Brown was responsible for the damage made to hospital property, then you must also be sure that he intended to cause damage or was reckless about causing the damage. You may be wondering what I mean when I use the term "intention". In the field of law, an individual is said to have intention when they mean to do something to bring about a particular consequence. If you are sure that Mr. Brown carried out an act to bring about damage to hospital property, then your verdict will be 'guilty'.

If you are not sure about his intention to cause damage, then you must ask yourself whether he caused the damage to hospital property 'recklessly'. In the field of law, a person is said to act 'recklessly' when they carry out an act or acts that cause damage and are aware of the risk that the damage will occur, in the circumstances known to them, with prior knowledge of the unreasonable nature of taking that risk.

If you are sure that Mr. Brown was aware of the damage that would occur when he engaged in acts that caused damage to hospital property, then your verdict will be 'guilty'.

You have read the witnesses' evidence concerning Mr. Brown's diagnosis of Attention Deficit Hyperactivity Disorder (ADHD). It is up to each of you to decide on whether you believe that the witnesses' testimony is credible or not to inform your verdict. You may want to consider this when coming to a decision on whether Mr. Brown intended to cause damage to hospital property and whether he was aware of the risk of the damage resulting from his actions.

If you are not sure about whether Mr. Brown intended to cause damage to hospital property and are unsure about whether he acted recklessly, then, you must find him to be 'not guilty' of this charge.

All jurors must be unanimous in their decision in order to deliver a verdict!

Thank you for your time and your service to the court.

Sincerely,

Your Mock Trial Judge

Appendix F

Case Vignette

I note that when interviewed about the currently alleged offence, Mr Brown explained that he went camping with his younger brother at the hospital yard without their parents' permission. Mr Brown admitted that during the night he had set fire to newspapers in the yard at the back of the hospital. He explained that he brought matches with him because he wanted to show some fire tricks to his little brother, but he did not understand that there was inflammable material in the hospital. Mr Brown admitted that he threw the lit newspapers under a wheelie bin and left the yard without putting out the fire. He understood that the burning newspapers set fire to the bin and subsequently spread to the hospital property. This in turn caused over one million pounds worth of damage to the hospital property and adjoining buildings. Mr Brown showed remorse for the incident for which he has pleaded guilty to but has also insisted that he did not believe that his actions would result in such damage. In other words, he denied intending to cause injury to others or damage the hospital's property.

Appendix G

Expert Witness Testimony Vignette

Thank you, Your Honour. My name is Dr Achebe/Mensah/Keita/Smith/Jones/Evans. I am a Consultant Clinical Psychologist/Consultant Psychiatrist with a speciality in learning disabilities and neurodevelopmental disorders. I completed my formal training in Clinical Psychology/Psychiatry in 2005 and I have worked as a Clinical Psychologist/Psychiatrist in several Specialist Learning Disabilities services across the National Health Service since then. My day-to-day duties involve assessment and treatment in an outpatient facility for adults with learning disability needs.

Mr Brown is charged with arson with intent to endanger life and damage property. As part of my role, I have been instructed to assess Mr Brown and provide an expert opinion for the court regarding his mental health condition in relation to his offence. I have been specifically instructed to address the issues of intent and recklessness in the defendant's case. I note that Mr Brown received an assessment of his learning needs at the age of 12 and was given a diagnosis of a Mild Learning Disability.

In terms of background information, Mr Brown is 18 years old and goes regularly to a local college. He lives with his two biological parents and his 5-year younger adopted brother. Mr Brown experienced a series of complications with infections at his birth and early childhood. He missed almost all of his developmental milestones, including sitting up, walking, and learning to talk. He attended a number of different special educational needs schools since he was 9 years old. Mr Brown experienced bullying from an early age because of his weight and communication difficulties. He found it hard to concentrate and read at school and he received one-to-one personal assistance.

Growing up, Mr Brown also struggled to build and maintain friendships. I note Mr Brown was suspended from school on a number of occasions. In 2016, he absconded from
a charity social event and was missing for eight hours. The police were contacted. Mr Brown was suspended again in 2017 for being verbally abusive towards the cleaning staff. At this point, Mr Brown began to present with challenging behaviours which resulted in him being excluded from two schools in 2018 and 2019. In March 2020, a professionals meeting was held by local services, and concerns were raised about Mr Brown's vulnerability. For example, it was reported that Mr Brown was approaching strangers in cars asking for cigarettes.

Mr Brown experiences increased symptoms of anxiety and distressing intrusive thoughts about harming others and/or himself which are commonly reported in people with learning disabilities. When distressed, Mr Brown said that he would set fire to newspapers, books, or old clothes to make himself feel calm. His parents reported that their son had been preoccupied with fire since he was young, but they don't know what caused it. Mr Brown seems to get excited about the fire's ability to get out of control and burn everything. He appeared to have developed and maintained a belief that he is a dangerous person and needs to stay away from other people.

Mr Brown is well supported by his parents who have a good understanding of his needs and learning difficulties. In this assessment, there was not enough evidence to suggest that Mr Brown experiences symptoms of a psychotic illness for example delusional thinking or hallucinatory phenomena. Mr Brown's performance on various neuropsychological tests showed evidence of some difficulties across a range of areas including his memory, ability to plan, as well as his visual and perceptual functioning. Mr Brown presented in a social sense as younger than his chronological age and at times in assessment was rather socially disinhibited (i.e., asking inappropriate questions to the interviewer). Mr Brown's cognitive abilities were found to range between borderline to low average across all domains with a full-scale Intelligence Quotient (IQ) score of 61. Similarly, he struggles with understanding other people's intentions. This means that in day-to-day situations he may experience problems with accurately recognising other people's intentions and understanding how they may guide behaviours.

As my psychological/psychiatric assessment confirmed, Mr Brown suffers from a Mild Learning Disability, which is a recognised condition that affects the brain's ability to send, receive, and process information. He also meets the criteria for a diagnosis of Attention and Deficit Hyperactivity Disorder (ADHD) having displayed features

commonly seen in this disorder including recklessness, impulsivity, disinhibition and problems in social understanding, and cognitive difficulties.

In relation to the offence that Mr. Brown committed, in my opinion as Consultant Clinical Psychologist/Consultant Psychiatrist, his emotional and developmental immaturity, ADHD, and difficulties with his anxiety and learning needs will have likely impacted his ability to think through the consequences of his actions. Mr Brown's explanation about setting the fire without thinking through the consequences appears plausible and would be consistent with somebody with his level of impairment. In particular, I think it is plausible that he would not have appreciated the risk caused by setting a small fire so close to the tanks containing flammable material, and overall, this in my view is the most likely explanation.

However, I cannot exclude the possibility that Mr Brown did indeed understand this risk or was in fact particularly excited by the prospect of fire setting within hospital grounds. In this regard, I did notice that when Mr Brown talked about the fires, he seemed to become somewhat animated and perhaps even excited about his actions during the alleged offence.

Appendix H

Witness Credibility Scale (WCS)

Instructions for completing the WCS: Please provide a rating for the expert witness for each item on the scale. If you get stuck on any item, please respond with your best guess.

Example:

1	2	3	4	5	6	7	8	9	10
Dressed Formally						**X**			**Dressed Informally**

1	2	3	4	5	6	7	8	9	10
Unfriendly									**Friendly**

1	2	3	4	5	6	7	8	9	10
Disrespectful									**Respectful**

1	2	3	4	5	6	7	8	9	10
Unkind									**Kind**

1	2	3	4	5	6	7	8	9	10
Ill-mannered									**Well-mannered**

1	2	3	4	5	6	7	8	9	10
Unpleasant									**Pleasant**

1	2	3	4	5	6	7	8	9	10
Untrustworthy									**Trustworthy**

1	2	3	4	5	6	7	8	9	10
Untruthful									**Truthful**

1	2	3	4	5	6	7	8	9	10
Undependable									**Dependable**

1	2	3	4	5	6	7	8	9	10
Dishonest									**Honest**

1	2	3	4	5	6	7	8	9	10

Unreliable **Reliable**

1	2	3	4	5	6	7	8	9	10

Not confident **Confident**

1	2	3	4	5	6	7	8	9	10

Inarticulate **Well-spoken**

1	2	3	4	5	6	7	8	9	10

Tense **Relaxed**

1	2	3	4	5	6	7	8	9	10

Shaken **Poised**

1	2	3	4	5	6	7	8	9	10

Not Self-Assured **Self-Assured**

1	2	3	4	5	6	7	8	9	10

Uninformed **Informed**

1	2	3	4	5	6	7	8	9	10

Illogical **Logical**

1	2	3	4	5	6	7	8	9	10

Uneducated **Educated**

1	2	3	4	5	6	7	8	9	10

Unwise **Wise**

1	2	3	4	5	6	7	8	9	10

Unscientific **Scientific**

Appendix I

Study Information Sheet

Project Title: Exploring the Impact of Expert Witness characteristics on Perceptions of Credibility in Mock Jurors

Study Invitation

You are being invited to partake in a research study conducted by a student on the Doctoral course in Clinical Psychology (ClinPsyD). This study aims to explore how expert witnesses are perceived by mock jurors based on the characteristics that they possess.

Before you agree to take part in this study, please read the information below which contains details about what participating in this study involves.

What is the study about?

Mental health professionals such as psychologists and psychiatrists are sometimes employed in court settings to assist the judge and jury in decision-making. As expert witnesses, they provide factual information and clinical opinions to help the court reach a verdict on whether the accused perpetrator is guilty or innocent. Research has found expert witnesses who are perceived as 'highly' credible to influence the decision-making process in court. For example, witnesses who are rated as knowledgeable, confident, trustworthy and likeable, have been found to have a greater impact on perceived credibility and the consequential verdict that perpetrators are given. In this study, we are particularly interested in exploring whether certain characteristics and attributes that an expert witness possess impacts on the way the expert is perceived and their influence on the jury reaching a verdict.

Do I have to take part?

Your participation is voluntary. You do not have to participate in the study and can chose to stop at any point by closing your browser window or pressing the exit button on your screen. However, once you have submitted your answers at the end of the study, you will no longer be able to withdraw from the study due to answers being anonymised.

What will happen if I agree to take part?

If you agree to participate in the study, you will be asked to read a story about a criminal trial. The story will consist of a statement which has been written by a mental health professional who is testifying on a defendant's mental state at the time of committing an offence. You will also be provided with information about the crime that has been alleged, similar to that which you might receive if you were taking part in jury service in real life.

Following this, based on the testimony that you have read, we will ask you to imagine that you are taking on the role of a juror, where you will be asked to reach a verdict for the defendant (i.e.,

guilty vs. not guilty). Once you have completed this, you will be given a questionnaire to complete that measures your credibility rating of the expert witness.

Once you have completed the study, we will provide you with more information about the specific questions that the study is trying to address. We will not provide you with this information now as this may influence the way in which you respond to questions.

You will also receive a reimbursement of £2.00 for your time which will be credited to your Prolific account.

How long will the study last?

The study will take approximately 20 minutes to complete.

What are the benefits of taking part in this study?

There are no direct benefits of participating in this study. However, your participation in this study will enable us to gain a better understanding of characteristics that impact on perceptions of expert witnesses in court settings. Improving our understanding on this topic, may inform the development of policies and procedures that protect individuals from being perceived as less credible based on their characteristics and attributes.

What are the possible disadvantages of taking part?

The materials used in this study are of a sensitive nature, and, therefore, may be distressing for some participants as they involve reading about a serious crime. In addition, the topics addressed in this study and the decision you make about the expert witness may cause you to reflect on your own values.

If you feel distressed at any point in the study, we advise that you stop participating in the study. We have also put together a resource pack that provides information on services and online material that you can access if you are in need of further support, following participation in the study.

How will information be stored?

Responses to questions will be kept confidential in-line with the Data Protection Act (2018). All of the information that you share will be anonymised and stored securely in a digital folder. Access to this folder will remain limited to the research team. Study data will be destroyed after 10 years. We will only use the information you provide for the purpose of this study.

What will the study findings be used for?

Data collected from this study will be analysed and written up as a requirement of the Clinical Psychology Doctorate Course (ClinPsyD). We also hope to publish the results of this study in an academic journal. For this purpose, we will anonymise your identity. You can request to receive a copy of the final study findings.

Who has reviewed this project?

This study will be reviewed by the Ethics Committee of the Faculty of Medicine and Health Sciences, located at the University of East Anglia. The committee ensures that research is carried out safely.

How can we be contacted?

If you have any questions about the study, you can contact us using the information below:

Anita Abbey Norwich Medical School University of East Anglia Email: A.Abbey@uea.ac.uk	**Dr Peter Beazley** Norwich Medical School University of East Anglia Email. P.Beazley@uea.ac.uk

What if I have complaints about the study?

If you have any complaints or concerns about the study, please do not hesitate to contact us using the information below:

Professor Niall Broomfield

Head of Department of Clinical and Psychological Therapies

Norwich Medical School

University of East Anglia

Email: N.Broomfield@uea.ac.uk

Appendix J

Informed Consent Form

Project Title: Exploring the Impact of Expert Witness characteristics on Perceptions of Credibility in Mock Jurors

Study information: You are consenting to participate in our study which aims to inform research on characteristics and attributes which impact on the perceived credibility of an expert witness.

By giving consent to take part in this study, you agree to reading this consent form and to proceed with the current online study.

Name of Primary researcher: Anita Abbey

By signing below, you are agreeing that:

1) You have read and understood the participation information sheet ☐
2) Questions about your participation in this study have been answered satisfactorily ☐
3) You agree to voluntarily take part in the above study ☐
4) You understand that all personal information will remain confidential, and all efforts will be made to ensure that you cannot be identified ☐
5) You agree that data gathered in this study may be stored anonymously and securely, and used for future research ☐
6) You understand that your participation is voluntary, and you are free to withdraw without any given reason ☐
7) You agree to not save or share any material from the study ☐
8) You understand that the purpose of the study is to consider the characteristics which may influence juror decision-making about a person charged with a serious offence, and that I will be told more information about the specific characteristics being considered after the study is completed ☐

_____ _____

I consent **I do not consent**

Appendix K

Debrief Form

Dear participant,

Thank you for taking part in this study. Your participation has helped to develop our understanding of characteristics and attributes that influence perceptions of expert witnesses in court settings. We were particularly interested in understanding how expert witness race and professional status impacts on credibility ratings. During the study, you were allocated to one of four random groups where you were presented with different information about the race and professional background of the expert witness. We will use this information to check whether there were differences in the decisions made about the defendants in relation to the information that you were presented with.

We hope you found the study interesting. We are aware that some of the study materials may have contained distressing information. If you are feeling distressed as a result of this study, please do not hesitate to access the resource pack that we have provided you with which contains useful contacts and resources that you can access.

If you would like to receive more information about the study or wish to make a complaint, please do not hesitate to contact a member of the research team:

Primary Researcher	**Research Supervisors**
Anita Abbey Norwich Medical School University of East Anglia Email: A.Abbey@uea.ac.uk	**Dr Peter Beazley** Norwich Medical School University of East Anglia Email. P.Beazley@uea.ac.uk **Dr Ian Edwards** School of Law University of East Anglia Email: I.Edwards@uea.ack.uk

Thank you for your time!

Appendix L

Wellbeing Information sheet

Mental Health Services

Anxiety UK

Charity providing support for individuals experiencing symptoms of anxiety

Telephone: 03444 775 774

Website: www.anxietyuk.org.uk

CALM

CALM is the campaign Against Living Miserably, for men aged 15 to 35

Telephone: 0800 585858

Website: www.thecalmzone.net

Men's Health Forum

24/7 mental health support for men by text, chat and email.

Website: www.menshealthforum.org.uk/beaststress.uk

MIND:

Promotes the views and needs of people with mental health problems

Telephone: 03001233393

Website: www.mind.org.uk

Rethink Mental Illness

Support and advice for people living with mental illness.

Telephone: 0300 5000 927

Website: www.rethink.org

SANE

Emotional support, information and guidance for people affected by mental illness, their families and carers.

Email: www.sane.org.uk/support

NHS Talking Therapies

NHS talking therapies service that provides NICE recommended psychological interventions for adults and older adults with anxiety and/or mood difficulties.

Website: https://www.england.nhs.uk/mental-health/adults/nhs-talking-therapies/

Samaritans

The Samaritans offer emotional support 24 hours a day – in full confidence

Telephone: 116 123 (freephone)

Email: jo@samaritans.org.uk

SHOUT

SHOUT is a crisis helpline that supports individuals who are experiencing a personal crisis and need further support. This service can help with extra issues such as suicidal thoughts, abuse or assault, self-harm, bullying and relationship challenges.

Text: 85258

Mental Health Self-Help Resources

Centre for Clinical Interventions

Website: www.cci.health.wa.gov.au/Resources/Looking-After-Yourself

Get Self Help – GET

Website: www.getselfhelp.co.uk

Sleep Council

Website: https://sleepcouncil.org.uk/

Sleep Foundation

Website: https://www.sleepfoundation.org/

Emotional and Mental Wellbeing Apps

Catch it (free)- Helps users better understand their moods through the use of diaries. The app was designed to illustrate some of the key principles of psychological approaches to mental health and well-being, and specifically Cognitive Behavioural Therapy (CBT).

Chill Panda - A new app that allows individuals to uncover how their bodies respond to different feelings.

Diary Mood Tracker/Daylio (free)- Daylio enables you to keep a private diary without having to type a single line. You can pick your mood and add activities you have been doing during the day. You can also add notes and keep a record of things in a diary. Daylio allows you to keep track of your mood and activities and to create patterns to become more productive.

Gratitude- Gratitude journal that allows individuals to reflect on things that they are grateful for. Also consists of other useful features which enables individuals to: construct self-affirmations, receive daily quotes and build a vision board that consists of images and goals.

Happify- science based activities and games that are useful for managing negative thoughts, stress and life's challenges. Activities are based on positive psychology, mindfulness and cognitive behavioural therapy principles.

Headspace - a science-backed app in mindfulness and meditation, providing unique tools and resources to help reduce stress, build resilience, and aid better sleep.

Mood Tools (free)- Supports individuals with overcoming symptoms of depression by increasing awareness of negative thinking patterns and moods – aiding you on the road to recovery.

Podcasts (free)- 'Mental Health Foundation's 16 free podcasts' provides tips on living a mentally happier life – form New Years' resolutions to Relaxation for Better Sleep to Mindfulness techniques and tips on overcoming fear and anxiety.

Silvercloud (free)- Provides a wide range of supportive and interactive programmes, tools and tactics for mental health and behavioural difficulties.

The programme addresses the following: wellbeing, life balance, time management, communication skills, goal setting, communication, relationship management, anger management, stress management, relaxation and sleep management.

Stay Alive (free)- Suicide prevention resource, packed with useful information to keep you safe. You can use it if you are having thoughts of suicide or if you are concerned about someone else who may be contemplating suicide.

Worry Tree- the App uses cognitive behavioural therapy (CBT) techniques to help you recognise and tackle your worries

Appendix M

Ethics Approval

University of East Anglia

Study title: Exploring the Impact of Expert Witness Profession and Perceived Race on Perceptions of Credibility in Mock Jurors

Application ID: ETH2223-0531

Dear Anita,

Your application was considered on 29th June 2023 by the FMH S-REC (Faculty of Medicine and Health Sciences Research Ethics Subcommittee).

The decision is: **approved**.

You are therefore able to start your project subject to any other necessary approvals being given.

If your study involves NHS staff and facilities, you will require Health Research Authority (HRA) governance approval before you can start this project (even though you did not require NHS-REC ethics approval). Please consult the HRA webpage about the application required, which is submitted through the IRAS system.

This approval will expire on **30th September 2024**.

Please note that your project is granted ethics approval only for the length of time identified above. Any extension to a project must obtain ethics approval by the FMH S-REC (Faculty of Medicine and Health Sciences Research Ethics Subcommittee) before continuing.

It is a requirement of this ethics approval that you should report any adverse events which occur during your project to the FMH S-REC (Faculty of Medicine and Health Sciences Research Ethics Subcommittee) as soon as possible. An adverse event is one which was not anticipated in the research design, and which could potentially cause risk or harm to the participants or the researcher, or which reveals potential risks in the treatment under

evaluation. For research involving animals, it may be the unintended death of an animal after trapping or carrying out a procedure.

Any amendments to your submitted project in terms of design, sample, data collection, focus etc. should be notified to the FMH S-REC (Faculty of Medicine and Health Sciences Research Ethics Subcommittee) in advance to ensure ethical compliance. If the amendments are substantial a new application may be required.

Approval by the FMH S-REC (Faculty of Medicine and Health Sciences Research Ethics Subcommittee) should not be taken as evidence that your study is compliant with the UK General Data Protection Regulation (UK GDPR) and the Data Protection Act 2018. If you need guidance on how to make your study UK GDPR compliant, please contact the UEA Data Protection Officer (dataprotection@uea.ac.uk).

Please can you send your report once your project is completed to the FMH S-REC (fmh.ethics@uea.ac.uk).

I would like to wish you every success with your project.

On behalf of the FMH S-REC (Faculty of Medicine and Health Sciences Research Ethics Subcommittee)

Yours sincerely,

Dr Paul Linsley

Ethics ETH2223-0531