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Medical decision making using knowledge of patient identification as Aboriginal or Torres Strait Islander: what do medical students think?

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Authors

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Introduction

Aboriginal and Torres Strait Islander (Indigenous) people continue to have worse health outcomes than non-Indigenous Australians (Australian Institute of Health and Welfare, 2017a). Indigenous people experience high levels of racism, with few not being the direct target (Ferdinand, Paradies & Kelaher, 2013), and the associated detrimental impact on physical and mental health is well documented (e.g., Ben, Cormack, Harris & Paradies, 2017; Paradies & Cunningham, 2012). Indeed, the white history of Australia is defined by dispossession and genocide (Grace & Platow, 2017), with enduring effects on government policies.

In 2008, the Council of Australian Governments (COAG) committed to rectifying inequalities through the Closing the Gap Initiative (AIHW, 2017a). This initiative has recently been reviewed and updated with greater emphasis on partnerships (Commonwealth of Australia, 2020) to enhance Indigenous involvement in decision-making processes (cf., Peate, Platow & Egging, 2008). The National Aboriginal and Torres Strait Islander Health Plan is an evidence-based policy framework developed in conjunction with Closing the Gap to guide improvements specifically in health (Department of Health, 2018a). In addition to this framework, the ‘Implementation Plan for the National Aboriginal and Torres Strait Islander Health Plan 2013-2023’ was developed to list the specific actions and plans that the government is taking to achieve necessary health targets (Department of Health, 2018b).

Ensuring that all patients are asked the question, “are you [is the person] of Aboriginal and/or Torres Strait Islander origin?” is crucial in collecting data pertaining to Indigenous health (AIHW, 2017b). Not only is doing so an ACT Health policy (ACT Government, 2019) but the Australian national Best Practice Guidelines state that all health practitioners should ask it of every patient (AIHW, 2017b). Indeed, all patients have a right to identify as Indigenous without practitioners making assumptions about their status. Moreover, most Indigenous patients wish to identify, provided the question is asked appropriately (Scotney, Guthrie, Lokuge & Kelly, 2010) and asking the question positively contributes to culturally appropriate healthcare (Scotney et al., 2010).

Asking this question is also of medical benefit to patients. Indigenous patients have access to specific health services, such as annual Medicare Health Assessments (MBS 715), immunisation schemes and opportunities to engage an Aboriginal health worker (AIHW, 2017a). Another health benefit, the PBS Closing the Gap co-payment, provides prescription medications free of charge with a healthcare card (or discounted without) for Indigenous patients who have (or are at risk of) a chronic disease (AIHW, 2017a).

If practitioners are required to ask all patients if they identify as Indigenous, it is important they understand how to incorporate that information into their clinical care. The Royal Australian College of General Practitioners (RACGP) developed 'The Five Steps' resource outlining actions that general practitioners should take to deliver appropriate healthcare for Indigenous patients (RACGP, 2019) including the use of "appropriate clinical guidelines" (p. 5). One of these guidelines outlines specific preventative health measures that should be taken for patients who identify as Indigenous (NACCHO & RACGP, 2018). For example, the guide recommends that Indigenous adults over 18 years of age should be screened annually for type 2 diabetes as part of a MBS 715. In contrast, the RACGP does not recommend screening non-Indigenous Australians until age 40, and then only once every three years (RACGP, 2018). The other guidelines listed by 'The Five Steps' are for the national management of certain diseases (e.g., rheumatic heart disease), and contain specific sections that address how these diseases can be best managed in Indigenous patients (RACGP, 2019). Thus, knowing that someone identifies as Indigenous can benefit health outcomes, as practitioners can be guided by policy-based directions to best prevent and manage illness in Indigenous patients.

In contrast to these detailed guidelines, it is not apparent whether knowing that a patient identifies as Indigenous can be used in clinical *reasoning* to inform medical diagnoses. Fortunately, guidelines outlining diagnostic strategies for Indigenous patients are being developed. 'The Implementation Plan for National Aboriginal and Torres Strait Islander Health Plan 2013-2023', for example, outlines standards for diagnosis, treatment and rehabilitation (Department of Health, 2018a). When implemented, these will sit alongside the existing guidelines recommended by the RACGP.

Development of these guidelines offers clear benefits for patients, but also has the potential to cause harm. Knowing that a patient is Indigenous allows practitioners to acknowledge social determinants of health that may increase risk of illness (e.g., reduced access to education or housing) (Marmot, 2011), as well as recognising that some diseases (e.g., type 2 diabetes, Diabetes Australia, 2019) have a higher incidence among Indigenous patients. However, relying on status to guide a diagnosis may ignore the individual needs of the patient, create group-based stereotypes (Bond, 2005) and contribute to the ongoing discrimination that Indigenous patients face in the healthcare system (AIDA, 2013).

In light of these perspectives, it is worthwhile investigating attitudes of health professionals and those still in professional training with regard to using Indigenous status when making a diagnosis. Attitudes have the potential to predict behaviours (Armitage & Christian, 2003), so understanding attitudes may indicate how well guidelines will be received and implemented in the healthcare industry. Indeed, claims of implicit bias in medical decision making

among clinicians are plentiful (Cormack, Harris, Stanley, Lacey, Jones, & Curtis, 2018; Ewen & Hollinsworth, 2016; Smedley, Stith & Nelson, 2003), although the evidence of actual bias is mixed (Cormack et al., 2013). Moreover, while numerous researchers and practitioners have highlighted the importance of using Indigenous status in medical decision-making (Cormack et al., 2018; Ewen & Hollinsworth, 2016; Harris, Cormack, Stanley, Curtis, Jones, & Lacey, 2018; Smedley et al., 2003), research is yet to be conducted on precisely their attitudes about *how* this should be used. Hence, the potential for biases to have negative consequences for decision-making remains, highlighting the need for research examining these decision-making processes.

Current Research

The aim of the current research was to understand what medical students think about using knowledge of Indigenous status to make medical decisions. Medical students are an important group to study, not only because they will soon be practicing doctors who will need to adopt relevant health guidelines, but also because they are an essential group to target for any educational interventions. We currently asked students to evaluate the actions and decisions of a doctor after reading a supposed clinical encounter with an Aboriginal patient. The doctor made two different decisions based on the knowledge that the patient identified as Aboriginal. First, the doctor considered the relevance of the patient's Aboriginal status in forming a diagnosis of diabetes. Next, the doctor decided to register – or not register – the patient for the Closing the Gap PBS co-payment.

We hypothesised that medical students would evaluate the actions of a doctor who did *not* provide a patient access to the Closing the Gap PBS co-payment more negatively than a doctor who did. In contrast, we were unsure about how students would respond to a doctor's use or non-use of Aboriginal status when forming a diagnosis. Given the lack of guidelines on diagnostic procedures for Indigenous patients that students can refer to, this element of the research remained exploratory.

Method

Participants and design

Ninety-two first-year and 86 second-year medical students at the Australian National University (ANU) who were enrolled in The Doctor of Medicine and Surgery voluntarily participated in the study. There were 94 females, 83 males, and one participant who did not identify as male or female. Ages ranged from 21 to 42 (median age = 24). Two participants identified as Indigenous and 30 students did not have English as their first language.

Participants were randomly assigned to one of the four experimental, between participants conditions outlined in Table 1. Participants' responses were anonymous, and choice of participation had no bearing on their grades. No incentives were offered.

Procedure

Participants completed a pen-and-paper questionnaire distributed at the end of a teaching session. Before starting, all participants were told the study was interested in students' views of a doctor's actions in a medical consultation. Participants were asked to read and sign consent forms.

The first page of the questionnaire simulated a new-patient form concerning a 28-year-old female patient who identified as Aboriginal. The next page contained a mock digital screen capture of the doctor's medical notes supposedly recording the symptoms and signs of the patient, along with a suspected diagnosis of diabetes. The new-patient form and notes were identical for all questionnaires, except for the last paragraph of the doctor's notes which differed under the four experimental conditions (Table 1 presents the exact wording used).

Table 1. The four between participants experimental conditions used in the current research, along with the text used to manipulate the variables.

		Did the doctor consider the Aboriginal identity of the patient when forming a diagnosis?	
		Yes	No
Did the doctor register the patient for Closing the Gap PBS co-payment?	Yes	<i>“Patient identifies as Aboriginal. I have used the information about Aboriginal identification in forming my suspected diagnosis of diabetes. I have decided to register the pt for the Closing the Gap PBS co-payment.”</i>	<i>“Patient identifies as Aboriginal. However, I do not consider information about Aboriginal identification to be relevant in forming my suspected diagnosis of diabetes. I have decided to register the pt for the Closing the Gap PBS co-payment.”</i>
	No	<i>“Patient identifies as Aboriginal. I have used the information about Aboriginal identification in forming my suspected diagnosis of diabetes. I have decided not to register the pt for the Closing the Gap PBS co-payment.”</i>	<i>“Patient identifies as Aboriginal. However, I do not consider information about Aboriginal identification to be relevant in forming my suspected diagnosis of diabetes. I have decided not to register the pt for the Closing the Gap PBS co-payment.”</i>

Diabetes was intentionally chosen as the medical condition for the first independent variable given its high prevalence in Indigenous populations (Diabetes Australia, 2019). Medical students (particularly those in second year) have knowledge of this and the associated health determinants. It was expected that students would view a doctor making a diagnosis with limited clinical information (as in the questionnaire) to be more legitimate if the condition was common in Indigenous groups than if it was not.

Following the presentation of the doctor’s notes, participants evaluated the doctor’s actions on 20 descriptive word items, based on previous similar research (Howard, McArthur, Platow, Grace, Van Rooy, & Augoustinos, 2019; Lee, Platow, Augoustinos, Van Rooy, Spears, & Bar Tal, 2019). These words focused on perceptions of professionalism (professional, thorough, safe, competent, valid, accurate, reasonable, logical, appropriate, good) and prejudice (fair, harmful, wrong, biased, misguided, unjustified, prejudiced, stereotyping, racist, offensive). Participants responded to each item on a 7-point Likert scale (1= “strongly disagree” to 7= “strongly agree”).

To examine the effects of participants' prior beliefs, the following statement was presented: "Knowing whether someone is Aboriginal or Torres Strait Islander should be utilised when forming a medical diagnosis," with a "yes"/"no" response choice.¹

Three manipulation checks were then presented to determine if the independent variables were salient to participants. The first question asked if the patient in the questionnaire identified as Aboriginal or Torres Strait Islander ("Aboriginal or Torres Strait Islander", "neither", "can't remember"). The second asked if the patient's Aboriginal or Torres Strait Islander status was considered when making a suspected diagnosis ("yes", "no", "can't remember"). The final question asked if the doctor gave the patient access to the Closing the Gap PBS co-payment ("yes", "no", "can't remember").

Final questions concerned demographic information (gender, age, year level of medical school, if they identified as Aboriginal or Torres Strait Islander, and if English was their first language), and space was provided for participants to write any comments about the study. After completing the questionnaires, participants were told the information provided was hypothetical (designed by the researchers) and were fully debriefed as to the purpose of the study. All participants' questions were answered, and all were offered a written debriefing sheet with additional information and contacts.

Results

Manipulation checks

Analysis of the first manipulation check revealed 21 participants failed to remember if the doctor had considered the patient's Aboriginal status when making the medical diagnosis. Analysis of the second manipulation check showed that four additional participants failed to remember if the doctor had given the patient access to the Closing the Gap PBS co-payment. The final manipulation check identified five additional participants who did not remember that the patient identified as Aboriginal. Data from all 30 participants failing the manipulation checks were removed from subsequent analyses.

Data screening

The remaining data were screened for missing values. One participant answered less than 5% of the questionnaire so this participant's responses were also excluded. Hence, data from 147 participants remained for inclusion in analyses.

¹ Other questions were also asked in this section and later in the questionnaire that are not directly relevant to the currently-reported research. We intend to report these data separately.

Scale reliability

A reliability analysis was performed on participants' responses to the 20 descriptor items, revealing Cronbach's alpha of 0.967 (negative items were reverse scored). This is considered ideal for research purposes (e.g., Streiner, 2003). Consequently, all items were averaged and used as a composite dependent variable measuring how positively (i.e., good, professional) participants evaluated the doctor's actions.

Analysis of ratings

The new composite dependent variable (i.e., the mean evaluation of the doctor's actions) was analysed using a linear model that included all main and interaction effects of the doctor's diagnosis, the doctor's registration decision, and students' prior beliefs about whether or not asking about Aboriginal or Torres Strait Islander status was relevant to a medical diagnosis. Half the participants held the prior belief that status *should* be considered in diagnosis ($n=74$), whilst the other half thought it should *not* be considered ($n=73$). We also included the main effect of students' academic year.² Results of this analysis revealed a significant main effect for students' academic year, $F(1,138)=5.28$, $p<.05$, $\eta_p^2=.04$. First-year students, on average, evaluated the doctor's actions more favourably ($M=4.59$, $SE=.12$) than did second-year students ($M=4.19$, $SE=.12$).

More directly relevant to the focus of our study, the main effect for registration of PBS co-payment was also significant, $F(1,138)=52.06$, $p<.001$, $\eta_p^2=0.27$. As predicted, participants rated the interaction more negatively when the doctor did *not* register the patient for co-payment ($M=3.78$, $SE=0.12$) compared to when the doctor did ($M=5.00$, $SE=0.12$).

No *a priori* hypothesis was made regarding how students would perceive a doctor using (or not using) a patient's Aboriginal status when making a medical diagnosis. This exploratory element of the research revealed a marginally significant main effect for diagnosis, $F(1,138)=3.88$, $p=.05$, $\eta_p^2=0.03$. Students considered ignoring status to make a diagnosis as *more positive* ($M=4.56$, $SE=0.13$) than using status for a diagnosis ($M=4.22$, $SE=0.11$).

No main effect was found for prior beliefs [$F(1,138)=0.03$, $p=.86$], however, a significant interaction was found between diagnosis and prior beliefs, $F(1,138)=6.40$, $p<.05$, $\eta_p^2=0.04$. Participants rated the encounter more positively when the doctor made a decision that aligned with their prior beliefs. Specifically, when participants believed that doctors *should* consider status for diagnosis, they evaluated the doctor's actions more favourably when the doctor

² Separate analysis indicated that academic year did not enter into any significant interactions.

considered status ($M=4.45$, $SE=0.16$) than when the doctor did not ($M=4.36$, $SE=0.18$). This difference, however, was not statistically significant ($p>0.05$). In contrast, when participants held a prior belief that doctors *should not* consider status for diagnosis, they evaluated the doctor's actions more favourably when the doctor did not consider status for diagnosis ($M=4.75$, $SE=0.18$) compared to when the doctor did ($M=4.00$, $SE=0.17$). This difference *was* statistically significant ($p<.05$).

No other significant effects were found.

Discussion

The present study investigated medical students' judgements of a hypothetical doctor's use or non-use of a patient's Aboriginal and/or Torres Strait Islander status in making medical decisions. Best practice guidelines direct medical practitioners to ask their patients if they identify as Aboriginal or Torres Strait Islander. Moreover, once patients have identified as Aboriginal and/or Torres Strait Islander, medical practitioners should register these patients for the Closing the Gap PBS co-payment (where appropriate) (AIHW, 2017a; RACGP, 2019). As such, it was currently hypothesised that students would understand the importance of this medical decision and hold relatively negative attitudes toward a doctor not providing patient access to the co-payment. Encouragingly, results supported this hypothesis, suggesting that the medical students currently sampled understand at least the principles of the guidelines – if not the guidelines themselves – and are likely to engage in this Closing the Gap health initiative in the future.

Other medical decisions, such as whether to incorporate a patient's Indigenous status into diagnostic decisions are yet to be grounded in policy (Department of Health, 2018b). Hence, we did not hypothesise what students would think about a doctor using (or not using) knowledge of a patient's status when making a diagnosis. The current results indicated that students evaluated a doctor's actions relatively poorly when the doctor *did* consider the patient's Aboriginal status when making a diagnosis. Although the design of the current study does not allow us to determine what the basis of students' judgements were, we can consider at least two non-mutually-exclusive possibilities. First, students may believe that considering status to inform a diagnosis is a form of negative stereotyping (Bond, 2005) and, as such, may see it as leading to prejudiced and discriminatory actions (including clinical decisions). Second, students may simply believe that other information (e.g., the patient's medical history) is more critical to making a diagnosis (Bonham et al., 2009).

Interestingly, our data do speak, in part, to students' perceptions of prejudice as well as professionalism. Recall that our primary measure was an inventory of judgements that effectively ranged from perceptions of professionalism to

perceptions of prejudice (e.g., specifically including items such as prejudice, stereotyping, and racist). Given that the mid-point of our response scale was four (on a seven-point scale), only once did we see students' average ratings fall *below* this mid-point. This was when doctor failed to register the patient for co-payment. It was specifically in this instance that our current medical student participants began perceiving the doctor's actions as (at least somewhat) prejudiced. In no other instance did our participants, *on average*, perceive prejudice, including when the doctor used knowledge that the patient identified as Aboriginal in the ultimate diagnosis. Interestingly, this pattern is not unlike previous research with Australian medical students using a similar inventory in which failure even to ask about Indigenous identification was *not* perceived as being prejudice (Howard et al., 2019).

As the current results suggest, however, what students *think should happen* is associated with their evaluation of the doctor's behaviour. Recognition of this expectation-based process is important because students who hold attitudes that contradict evidence-based guidelines may be less likely to follow these guidelines, negatively influencing the future health of Indigenous patients. Clearly, in light of best-practice guidelines directing medical practitioners to ask patients if they identify as Indigenous across a range of medical settings (AIHW, 2017b; ACT Government, 2019), further research is needed to investigate these, and potentially other, views that medical students may hold. Moreover, clear guidelines need to be set (and clearly articulated to medical students) about appropriate actions to take when knowledge of Indigenous identification is gained. Policy-makers may benefit from collaborating with educational institutions when developing diagnostic guidelines. Again, this is consistent with recommendations (Ewen, 2011; Ewen, Barrett, Paul, Askew, Webb, & Wilkin, 2015) that medical schools incorporate clinical decision-making into Indigenous health curricula, with the further potential to affect students' attitudes and improve the uptake of guidelines.

Interestingly, the current second year students sampled for this research, overall, evaluated the doctor more poorly than did first-year students. It is possible the former were more discerning than the latter, as they have received more Indigenous health education. At the ANU, the Indigenous health learning outcomes are based on the CDAMS Indigenous Health Curriculum Framework (Phillips, 2004). The second-year students who currently participated would have had more education about Indigenous history as well as broader population health indicators associated with Indigenous health. At the same time, however, of the eight separate areas of learning in the Curriculum Framework, the most relevant for the current analysis is "clinical presentations of disease". At the ANU, this learning outcome is addressed most directly in students' fourth year, meaning that the current students had not yet engaged with a formal part of their medical education directly associated with the hypothetical doctor's decision-making. This in itself can inform us: (1) why the students' expectations about

appropriate behaviour were evenly distributed across the sample, and (2) why their judgements of the doctor's actions were so strongly related to these expectations. Thus, our results could help direct fourth-year educators in developing appropriate student-centred approaches to learning, whereby educators begin their educational practice by recognizing students' varied *a priori* attitudes and beliefs.

A concern about the current study pertains to the unfortunate number of participants lost through manipulation-check failures. Participants who failed checks were almost exclusively from conditions in which the doctor did not consider status important for a diagnosis, and from conditions in which the doctor gave the patient access to the PBS co-payment. Note that these were the two conditions in which the doctor was evaluated as better performing. Negativity bias suggests that we evaluate negative information more heavily than positive information (Kanouse, 1984), and this may have been the reason participants were lost. The doctor performing in a way the participants evaluated to be negative may simply have been more salient. Alternatively, participants may have been lost from the 'diagnosis' condition due to poor wording of the manipulation question. In response to the diagnosis check, one student responded, "this question is a little vague" and another commented, "it was *considered* but not *used*". Clearly, these are issues to be addressed in future work.

Nonetheless, the current study offers a useful framework for investigating a range of attitudes on similar topics. For example, the basic method could be used to determine whether students understand that offering the MBS 715 for Aboriginal and Torres Strait Islander patients is necessary, or if they understand appropriate screening protocols for Indigenous patients. This study method could also be used to measure the attitudes of doctors themselves. Although sampling medical students is informative, it is valuable to understand decisions – and reasons for the decisions – by those currently in the healthcare industry. With continual development of policy and guidelines, research targeting doctors and other front-line health professionals may inform how well these policies and guidelines are likely to be applied.

Clearly, there is much work yet to be done to ensure that Aboriginal and Torres Strait Islander people receive the best possible healthcare, delivered in culturally sensitive (and safe) ways. Doctors and medical students need to understand how to appropriately use information relating to a person's Indigenous identification, to feel comfortable in doing so, and to understand why asking the question may be beneficial to someone's health. It also emphasizes the need for appropriate cultural training for medical students (Harris et al, 2018; Jones et al., 2019), particularly focusing on cultural safety (Curtis et al., 2019; Fleming & Grace, 2016) and associated values (Platow, Van

Rooy, Augoustinos, Spears, Bar Tal, & Grace, 2019). We hope the results from the current study can go some way to assisting this much-needed goal.

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