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Experiences of racism, racial/ethnic attitudes, motivated fairness and mental health outcomes among primary and secondary school students

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ABSTRACT

While studies investigating the health effects of racial discrimination for children and youth have examined a range of effect modifiers, to date relationships between experiences of racial discrimination, student attitudes and health outcomes remain unexplored. This study uniquely demonstrates moderating effects of vicarious racism and motivated fairness on the association between direct experiences of racism and mental health outcomes, specifically depression and loneliness, among school

students. Across seven schools, 263 primary and secondary school students, ranging from eight to 17 years old ($M = 11.2$, $SD = 2.2$) reported attitudes about other racial/ethnic groups and experiences of racism. Students from minority ethnic groups (determined by country of birth) reported higher levels of loneliness and more racism experiences relative to the majority group students. Students from the majority racial/ethnic group reported higher loneliness and depression if they had more friends from different racial/ethnic groups, whereas number of friends from different groups had no effect on minority students' loneliness or depression. Direct experiences of racism were robustly related to higher loneliness and depression in multivariate regression models. However, the association with depression was reduced to marginal significance when students reported low motivated fairness. Elaborating on the negative health effects of racism in school students provides an impetus for future research and the development of appropriate interventions.

Keywords: Racism; Racial/Ethnic Attitudes; Motivated Fairness; Mental health; Children; School

Introduction

Racism and racial discrimination are increasingly recognised as determinants of poor health outcomes among adults (D. R. Williams & Mohammed, 2009), although knowledge of the prevalence and health impacts of racial discrimination among children and adolescents is far less developed (N. Priest et al., 2013). Furthermore, research on racial discrimination among children and adolescents has predominantly focused on direct experiences of discrimination (where children and adolescents themselves are the targets of discrimination), but there is growing empirical evidence that vicarious racial discrimination defined as hearing about or seeing another person's experience of racism (Harrell, 2000; Mansouri & Jenkins, 2010) as well as carers or close family members experiencing discrimination that may or may not be witnessed by children and adolescents (see Kelly, Becares, & Nazroo, 2012; N Priest, Paradies, Stevens, & Bailie, 2012) also leads to negative health outcomes for children and adolescents. However, to date few studies have investigated the health impacts of vicarious racial discrimination for children and adolescents, and the co-occurrence and interrelationships between direct and vicarious racial discrimination are yet to be examined empirically.

Research on moderators and mediators of relationships between racial discrimination and health outcomes is also currently under-developed among children and adolescents, as well as among adults. This present study aims to extend previous research investigating associations between racism experiences and depression and loneliness in school students by considering multiple potential pathways including (a) differential and interactive effects of racism experienced both directly and vicariously, (b) the impact of racism on different forms of mental health (i.e., depression and loneliness), and (c) potential moderating effects of social attitudes (including motivations to be fair and attitudes about other racial/ethnic groups).

CHILDREN'S EXPERIENCES OF RACIAL DISCRIMINATION

In a context of increasing globalisation and population movements between and within countries, as well as evidence of growing racism and racial discrimination throughout the world, greater attention to understanding the impacts of such experiences on children and adolescents in key settings of their lives is required. Children and adolescents spend much of their time interacting with peers at school (Guerra, Williams, & Sadek, 2011), with school also the most common setting in which they experience racism and racial discrimination (Mansouri & Jenkins, 2010).

However, research on peer relations, including friendship, victimization and bullying, has to date had minimal focus on race and ethnicity (Graham, Munniksma, & Juvonen, 2013). Given the importance of schools in the lives of children and adolescents as settings for peer relations, including racism as expressed through racial discrimination, racial bullying and racial victimisation, as well as key sites of academic learning and socialisation, (Mansouri & Jenkins, 2010), more work is needed to understand school students' experiences of racism and the ways in which such experiences impact their outcomes. This is particularly required across countries, population groups and among younger age groups, with research to date in the field predominantly conducted with adolescents, those with African American backgrounds, and in North America (Priest et al 2013).

In Australia, the school student population has a high level of racial-ethnic diversity. One third are either immigrants themselves or born in Australia to at least one immigrant parent (Katz & Redmond, 2010), and a further 4.9% are Indigenous (Australian Institute of Health and Welfare, 2012). Over 200 languages and dialects, and over 230 countries of origin are represented, with 17.5% of permanent additions to the Australian population aged 0-17 years from Southeast Asia, 17.4% from Southern Asia, 12.0% from Southern and East Africa, 12.0% from Northeast Asia and 5.2% from the Middle East between 2006-2010 (Department of Immigration and Border Protection, 2010). Racism and racial discrimination are critical, yet under-researched concerns for many Australian school students, with a 2009 survey of 698 secondary students across four states found 70% of those from non-Anglo backgrounds reported experiences of racism during their lifetime, with 67% of these experiences occurring in school (Mansouri & Jenkins, 2010). Yet despite the diverse racial/ethnic population profile and disturbing rates of racism experiences, research on the prevalence and impacts of racism experiences for school students in Australia is lacking relative to that in North America.

One further concern is that many of the most commonly used measures of victimization and bullying do not ask youth to attribute their experience to an identity or specific personal characteristic, such as their race or ethnicity (Garnett, Masyn, Austin, Williams, & Viswanath, 2013). When race and ethnicity are considered in school based victimization and bullying studies, this largely centres on differential prevalence across racial/ethnic groups, rather than examining racial bullying and racial victimization specifically (Hoglund & Hosan, 2013; Larochette, Murphy, &

Craig, 2010). While studies of discrimination among youth have predominantly examined racial discrimination, a range of measures are utilised that often do not ask for attribution of experience (Hoglund & Hosan, 2013) and/or about the setting in which discrimination has occurred (N. Priest et al., 2013).

CONSEQUENCES OF RACIAL DISCRIMINATION

Children and adolescents are considered particularly vulnerable to the harmful effects of racism and racial discrimination, with consequences both in childhood and throughout the life-course (N. Priest et al., 2013; Sanders-Phillips, 2009). Racism is a complex phenomena operating across multiple levels and expressed in a range of ways; racism can be expressed through beliefs (e.g. negative and inaccurate stereotypes), emotions (e.g. fear/hatred) or behaviours/practices (e.g. unfair treatment, discrimination), ranging from open threats and insults (including physical violence) to phenomena deeply embedded in social systems and structures (Berman & Paradies, 2010). Exposure in childhood to either direct (Coker et al., 2009; Nyborg & Curry, 2003) and/or vicarious racial discrimination (Kelly et al., 2012; N Priest et al., 2012) has been associated with a diverse range of negative health outcomes in children and adolescents. A recent systematic review of racism and child and youth health quantitative studies showed that across all domains of health and health behaviour outcomes, the impact of racism on negative mental health has been most frequently examined (N. Priest et al., 2013). Depression was the most common of these negative mental health outcomes to be investigated, and 79% of associations between experiences of racial discrimination and increased depression for children and youth examined by the review were significant (N. Priest et al., 2013). Several of these studies examined loneliness as a dimension of depression (Cogburn, Chavous, & Griffin, 2011; Phinney, Madden, & Santos, 1998) while others specifically examined loneliness as a separate outcome to depression (Juang & Alvarez, 2010; Neto & Barros, 2000). Thus, while both depression and loneliness have been associated with experiences of racial discrimination among young populations, more work is needed to understand the specific effects of racial discrimination on these two closely related mental health outcomes, particularly among pre-adolescents, outside North America, and from racial-ethnic backgrounds other than African American (N. Priest et al., 2013).

Depression and loneliness are interrelated constructs that are conceptualised and measured in various ways among children and adolescents, as well as among

adults, and frequently considered indicators of mental health and psychosocial functioning (Lee & Turney, 2012; Qualter, Brown, Munn, & Rotenberg, 2010). Feeling lonely is included as a dimension in widely used depression scales for children (Derogatis & Savitz, 2000; Faulstich, Carey, Ruggiero, Enyart, & Gresham, 1986) while others conceptualise loneliness as a separate, though highly interrelated, construct (Vanhalst et al., 2012). Reciprocal associations between loneliness and depression have also been demonstrated among adolescents, as well as potential for these constructs to reinforce one another over time (Vanhalst et al., 2012). In this study we examine the effects of racism on depression and loneliness as two separate constructs among school students.

SOCIAL CONTEXT AND INDIVIDUAL DIFFERENCES AS MODERATORS OF RACISM

While racism is conceptually a complex phenomenon operating in multiple ways, research to date has predominantly focused on how direct experiences of racism are directly related to child and adolescent outcomes (N. Priest et al., 2013). However, the importance of examining multiple pathways between experiences of racism and outcomes such as depression and loneliness, including the influence of vicarious experiences in particular, have been recognised (Harrell, 2000; Quintana & McKown, 2007). For example, vicarious (as well as direct) experiences of racial discrimination have been associated with higher anger expression and depression among African American adolescents (see Stevenson & Arrington, 2009) while caregiver experiences of racism (i.e., vicarious racism) have been associated with adolescent depression (Ford, Hurd, Jagers, & Sellers, 2013). In contrast however, vicarious racism experiences online were unrelated to psychological adjustment among adolescents (Tynes, Giang, Williams, & Thompson, 2008).

Although adverse effects of racial discrimination on negative mental health outcomes such as depression and loneliness in young populations are increasingly acknowledged (N. Priest et al., 2013), there has been scant research examining potential moderators of racism experiences on school children's depression and loneliness (but see Deng, Kim, Vaughan, & Li, 2010; Hunter, Durkin, Heim, Howe, & Bergin, 2010). For example, vicarious racial discrimination, may act as a moderator that intensifies the effects of direct experiences of racial discrimination on negative outcomes such as depression and loneliness by implying a context of pervasive racism (Stroebe, Dovidio, Barreto, Ellmers, & John, 2011). Stroebe et al. (2011) noted that a

context of pervasive discrimination may have a stronger impact on health outcomes because it threatens a basic need to perceive the world as just and fair (Lerner & Miller, 1978; see also Schaafsma, 2013).

We also propose a second moderator of the effect of discrimination on mental health outcomes, in this study loneliness and depression. In addition to perceptions of the racism context, individual differences in racial/ethnic attitudes (how positive students feel about other racial/ethnic groups) may also moderate racism as students who are more positive about other groups may be more resilient, dismissing experiences of racism as non-normative incidents in a context in which they otherwise have positive experiences with people from other racial/ethnic groups. Models of attitude formation processes emphasise that beliefs about the social world are a product of both the social environment and individual differences like personality (Duckitt, 2001; Mischel & Shoda, 1995). Thus, the extent to which children and adolescents feel motivated to respond without prejudice may influence the effect of racism on their depression and loneliness outcomes as a context effect, and their racial/ethnic attitudes may operate on the effect of racism as an individual difference effect.

We argue that racial/ethnic attitudes should moderate the effect of direct and/or vicarious experiences of racial discrimination because racism perpetrated by those from other racial/ethnic groups may lead to targets or witnesses developing negative attitudes towards them. In other words, those with more negative racial/ethnic attitudes may experience the negative effects of racial discrimination on depression and loneliness more intensely than those with neutral or positive racial/ethnic attitudes, with such experiences reinforcing and accumulating stress responses and negative cognitions already heightened through negative racial/ethnic attitudes.

HYPOTHESES

The present study aims to examine associations between experiences of both direct and vicarious racial discrimination, motivated fairness, racial/ethnic attitudes, and mental health outcomes among Australian school students. To our knowledge this is the first study to do so internationally. The study aims to extend previous research investigating associations between racism experiences and depression and loneliness in school students by considering multiple potential pathways including (a) differential and interactive effects of racism experienced both directly and vicariously,

(b) the impact of racism on different forms of mental health (i.e., depression and loneliness), and (c) potential moderating effects of social attitudes (including motivations to be fair and racial/ethnic attitudes about other groups).

Expanding on our predictions regarding aim (c), we propose that higher levels of motivated fairness should increase the likelihood that racism will negatively impact health. We predict an interaction effect in which direct racism should be more strongly associated with higher loneliness and depression in students with higher motivated fairness. According to Stroebe et al. (2011, p. 485), “the same personal experience of discrimination can have very different implications for well-being, depending on individuals’ construal of the likelihood that this situation will reoccur again in the future.” In the present study, this likelihood should be determined by motivated beliefs about social fairness. We predict a second interaction effect in which more negative racial/ethnic attitudes should amplify the effect of racism on loneliness and depression as students with negative attitudes are more likely to have developed such attitudes in the face of discrimination from these other racial/ethnic groups. We also model vicarious racism as a moderator of direct racism reasoning that, along with motivated fairness, the former should also be a proximal indicator of the prevalence of racism in the students’ social contexts.

METHODS

Participants

This study was conducted as one component of a wider community baseline assessment for the evaluation of the Localities Embracing and Accepting Diversity (LEAD) program. LEAD is a community-based intervention to address race-based discrimination and promote cultural diversity conducted in two local government areas (LGAs) in Victoria, Australia. The wider LEAD intervention and evaluation design are described in detail elsewhere (Author, Author, & Author, 2013). Both LGAs participating in LEAD have high levels of cultural and linguistic diversity and low to medium-average socio-economic status. LGA A is a large regional town with a population of approximately 60,000 people situated about 200km from Melbourne while LGA B is an outer suburban area of Melbourne (population approximately 155,000). The participating LGAs were self-selected, but are comparable with other Victorian communities in levels of racism or discriminatory behaviour.

Three primary and two secondary schools from LGA A and two primary schools from LGA B participated in this study. Data were collected via students' self-report surveys in participating schools with parent consent. Primary students were guided through the survey as a group with one of the authors, while secondary students completed it independently with an author available for questions. Ethics approval was received from Melbourne University Human Ethics Sub-Committee and the Department of Education and Early Childhood Development.

The sample consisted of 263 (82.4% primary and 17.6% secondary) school students, 120 (45.6%) male and 143 (54.4%) female with a mean age 11.2 years ($SD = 2.2$; range, 8-17 years). Ninety-nine students (37.8%) were born in English speaking countries and also had parents born in English speaking countries. This was the reference category for subsequent analyses. The other birth country categories included 77 students (29.3%) who were born in English speaking countries and had non-English born parents, 66 (25.1%) who were born in non-English countries themselves, and 21 (8.0%) who did not know where one or both of their parents were born. For ease of understanding, we subsequently refer to these as (a) reference group, (b) minority English, (c) minority non-English, and (d) unknown parental country of birth. Country of birth was chosen as a proximal indicator of majority versus minority ethnic group status for ease of response given the young sample, and for ease of categorization.

Measures

Explanatory variables: Experiences of racial discrimination

Racial discrimination was assessed via seven items examining direct experiences (*Has this happened to YOU at school?: Other students said you don't belong in Australia; Other students didn't want to play with you because of your culture; A teacher thought you couldn't do something because of your culture; You were left out by a student because of your culture; you were left out by a teacher because of your culture; you were teased or called names by other students because of your culture; you were spat on, pushed or hit by other students because of your culture*), and three items examining vicarious experiences toward other students (*Has this happened to OTHER students at your school?: Students are left out because of their cultural group; Students are called names or teased because of their cultural group; Students are spat on, pushed or hit because of their cultural group*). These items were developed by the authors after recent systematic reviews indicated a lack

of consensus regarding the best way to measure experiences of racism among both adults (Bastos, Celeste, Faerstein, & Barros, 2010; Shariff-Marco et al., 2011) and children (N. Priest et al., 2013).

Existing measures of perceived racial discrimination were unsuitable for this study as they were designed for adults or adolescents only, lacked sufficient psychometric validity, were designed for specific racial/ethnic groups, or were too lengthy (i.e. >20 items) as the funding and wider context of the evaluation study limited the overall survey length to <40 items across all domains to be measured. While we recognise 'culture' is not synonymous with race or ethnicity, in some parts of the world, including Australia, culture is commonly used as a proxy for, and conflated with, race and/or ethnicity and/or religion (Moran, 2011). Thus in keeping with common vernacular of Australian school students, teachers and communities, 'culture' was used as a proxy for race/ethnicity within survey items. A specific focus on school as a context for experiences of racism was taken in this study due to school being the most common setting in which children and young people report such experiences occur (Mansouri & Jenkins, 2010). Moreover, anti-racism best practice advocates a settings-based approach (Paradies et al., 2009), and this study was ultimately conducted to inform a larger intervention implementation and evaluation as mentioned above.

Racial/ethnic attitudes and motivated fairness

Motivated fairness was assessed using three items examining sources of motivated fairness (e.g., *It is important to me that I'm nice to people from different cultures; Other students expect me to be nice to people from different cultures; Adults expect me to be nice to people from different cultures*) adapted from motivation to respond without prejudice scales (Plant & Devine, 1998). Racial/ethnic attitudes were assessed using four items (*People from other cultural groups are good/nice/smart/honest*; 'kind' replaced 'nice' and 'intelligent' replaced 'smart' in the secondary school version) adapted from the Multi-response Racial Attitude measure (Aboud & Doyle, 1996) and Preschool Racism Attitude Measure II (J. E. Williams, Best, & Boswell, 1975).

To investigate dimensionality of these items, exploratory factor analysis was performed in Mplus v.7 using a maximum likelihood approach with orthogonal (direct oblimin) rotation to allow the factors to correlate with one another. Because all study variables were dichotomous, analysis was performed using a tetrachoric

correlation matrix and a four-factor solution was derived. Four items loaded strongly and solely on a ‘motivated fairness’ factor and four items loaded on an ‘racial/ethnic attitudes’ factor. Response categories for these items were *most times*, *sometimes*, and *rarely*. Responses to each item were dichotomised where a score of 1 represented *most times* and 0 represented *sometimes* or *rarely*. The overall number of responses for each measure were coded as a composite binary: responding *most times* on any item versus *sometimes* or *rarely* on every item for motivated fairness, and responding *most times* on every item versus *sometimes* or *rarely* on any item for racial/ethnic attitudes. This distinction was necessary to maintain balanced sample sizes in each composite response category. Dichotomising was warranted as a very large proportion of students’ responses fell at the extreme end of the scales (for example around 70% experienced no direct racism). MacCallum, Zhang, Preacher and Rucker (2002) contend that, although dichotomising continuous variables is generally not warranted, such circumstances may constitute an exception.

Six items assessing racism loaded on a factor labelled direct racism and a further three items loaded on a factor labelled vicarious racism. Response categories here were coded as 1 representing *every day*, *every week*, or *every month* and 0 representing *never*. The overall number of responses was coded as a composite binary (responding *every month/week/day* on any item compared with responding *never* on every item). Item content and factor loadings for each scale are presented in the Appendix.

Outcomes: Student emotional health

Drawing from the KIDSCREEN-10 scale (Ravens-Sieberer et al., 2010) data were collected on two mental health outcomes by asking students to report on single items assessing loneliness (*In the past week I have felt lonely most times, sometimes, not much*) and depression (*In the past week I have felt sad most times, sometimes, not much*), each coded as a binary variable for analysis (*most times/sometimes* versus *not much*). Despite a high level of association between the two health items (OR 10.19; 95% CI 6.92, 15.02), they demonstrated reasonably low internal consistency as a two-item scale ($\alpha=0.66$) and had differential relationships with a number of other variables at a bivariate level (see Table 1 and 2). As such, these variables were examined independently in subsequent analyses to explore possible unique effects on each.

Demographics

Students reported age, gender, school year level, number of friends and best friends from other cultures (*How many of your [BEST] friends are from other cultures? None, a few, some, lots*) and country of birth for self, mother and father. Four birth-country categories were created by categorising open-ended responses as (0) students who were born, and whose parents were born, in an English speaking country; (1) students who were born in an English speaking country and whose parents were born in non-English speaking country; (2) students who were born in a non-English speaking country whose parents were also born in a non-English speaking country; and (3) students who did not know where one or both of their parents were born.

Statistical analysis

Data were analysed using Stata 12. All analyses were adjusted for clustering of students by school using the Huber-White sandwich variance estimator. The prevalence, frequency and forms of direct experiences of racism across demographic categories including age, gender and racial/ethnic background, as well as bivariate associations with vicarious racism, motivated fairness, racial/ethnic attitudes, loneliness and depression were examined using chi-square tests and simple logistic regression.

Next, all variables were simultaneously entered in blocks using logistic regression to model self-experienced direct racism as the exposure predicting loneliness and depression as outcomes in two separate models, adjusting for demographics (in step two) and attitudes and experiences (in step three). Wald tests indicated that each model explained significantly more variance than the baseline model. Variance inflation factors of less than three for variables across all models indicated multi-collinearity was not present. Interaction (i.e., effect modification) between racism and other independent variables (demographic variables, vicarious racism, racial/ethnic attitudes and motivated fairness) in the final model was also explored (with removal set at $p > 0.10$).

RESULTS

Sample proportions

As reported in Table 1, at least one form of racism was experienced directly by 32.2% of the sample, and 22.1% experienced at least one form of direct racism every day. A much higher proportion of students reported vicarious racism as 71.7% of students reported at least one form of racism experienced by other students, and

26.3% reported all three forms of vicarious racism. Nearly half of the sample (47.3%) reported experiencing at least one form of vicarious racism every day. For direct racism in particular, most reported experiences were perpetrated by students rather than teachers, and the most common experience reported was students being told they didn't belong in Australia (19.5% at least monthly). For vicarious racism, students most commonly reported others being called names or teased because of their cultural group (65.7% monthly or more), compared with other students being left out or being physically targeted.

Bivariate associations by emotional health

As reported in Table 1, 29.6% of students in the baseline sample reported experiencing loneliness most times or sometimes and 37.0% reported experiencing depression. At the bivariate level reporting both loneliness (OR 3.38; 95% CI 1.66-6.88, $p < 0.01$) and depression (OR 2.82; 95% CI 1.12-7.11, $p < 0.05$) was associated with a greater likelihood of experiencing direct racism. Reporting loneliness resulted in students being more likely to also report depression (OR 10.19; 95% CI 6.92-15.02, $p < 0.01$). Of the other attitude and experience variables reported in Table 2, reporting depression was associated with a lower likelihood of having positive racial/ethnic attitudes (OR 0.60; 95% CI 0.40-0.91, $p < 0.05$).

In terms of demographic differences, students from all three minority birth-country categories reported higher levels of loneliness relative to the majority ethnic group students. Minority English students (OR 1.94; 95% CI 1.01-3.73, $p < 0.05$) and minority non-English students (OR 1.77; 95% CI 1.14-2.75, $p < 0.01$) were significantly more likely to report loneliness. However, the difference for students with unknown parental country of birth was marginal (OR 1.08; 95% CI 0.17-6.98, $p < 0.10$). The only other significant demographic difference at a bivariate level was that female students were marginally more likely to report more depression than males (OR 1.96; 95% CI 0.90-4.27, $p < 0.10$).

Bivariate associations by racism, fairness and racial/ethnic attitudes

As shown in Table 2, females were more likely to report motivated fairness than males (OR 2.43; 95% CI 1.34 to 4.39, $p < 0.01$), and younger students was marginally more likely to have positive racial/ethnic attitudes (OR 0.88; 95% CI 0.77-1.02, $p < 0.10$). And Table 1 shows that a greater proportion of students from all three minority birth-country categories reported direct racism relative to the reference group ($p < 0.05$). More minority non-English students also experienced vicarious

racism (OR 1.98; 95% CI 1.17-3.38, $p < 0.05$; see Table 1) and students with unknown parental country of birth were less motivated to be fair (OR 0.43; 95% CI 0.23-0.80, $p < 0.01$; see Table 2). Those reporting direct racism were much more likely to also experience vicarious racism (OR 9.95; 95% CI 2.23-44.31, $p < 0.01$; Table 1), while reporting direct (OR 0.41; 95% CI 0.25, 0.68, $p < 0.01$) and vicarious (OR 0.64; 95% CI 0.42-0.98, $p < 0.05$) racism was associated with a lower likelihood of reporting motivated fairness as shown in Table 2. Positive racial/ethnic attitudes were also associated with less odds of experiencing direct racism (OR 0.71; 95% CI 0.50-0.99; see Table 1). Finally, motivated fairness was associated with greater odds of positive racial/ethnic attitudes (OR 1.66; 95% CI 1.19-2.31; see Table 2).

Baseline hierarchical models

Multivariate models (see Tables 3 and 4) indicated a robust association between direct racism and higher levels of loneliness (adjusted OR 4.13; 95% CI 1.62-10.53, $p < 0.01$; see Table 3) and depression (adjusted OR 3.60; 95% CI 1.26-10.27, $p < 0.05$; see Table 4) after adjusting for main effects of demographics and other explanatory variables. Contrary to expectations, having more friends from other cultures was associated with higher levels of loneliness (OR 2.25; 95% CI 1.37-3.69, $p < 0.01$; see Table 3) and depression (OR 1.76; 95% CI 1.40-2.22, $p < 0.01$; see Table 4). Stratified analyses indicated that this was only the case for students from the majority birth country group (i.e., both parents and student born in English speaking countries). In both models, there were also significantly *lower* levels of loneliness and depression for some minority birth-country categories after adjusting for the effects of direct racism. Generally racial/ethnic attitudes and vicarious experiences of racism were not significantly associated with loneliness and depression once the contribution of direct racism was taken into account. However, as shown in Table 3, students who were motivated to be fair were less likely to report loneliness (OR 0.09; 95% CI 0.01-0.97, $p < 0.05$).

Direct racism interaction effects

There was one significant interaction with direct racism predicting health outcomes. Direct racism interacted with motivated fairness in the sense that those who reported direct racism *and* motivated fairness were more likely to experience depression (OR 2.34; 95% CI 1.05-5.23, $p < 0.05$), while taking into account the main effect of each of these variables. Direct racism was highly associated with depression in those reporting higher levels of motivated fairness (OR 9.05; 95% CI 1.67-49.06,

$p=0.01$), while only moderately associated for those reporting low levels of fairness (OR 2.77; 95% CI 1.04-7.40, $p<0.05$). The main effect of direct racism on depression was reduced to marginal significance ($p<0.10$) when this interaction term was included in the model.

Although we had predicted that vicarious racism might also interact with direct racism, we were unable to model this interaction term as too few participants (five students, or 6.8% of the sample) experienced direct racism and no vicarious racism. All possible two-way interactions were examined individually in the full models predicting both loneliness and depression and there were no further significant effects.

DISCUSSION

The current study extended prior racial discrimination research by addressing several gaps in the existing literature. We focused on the experiences of Australian school students from both majority and minority racial/ethnic backgrounds, within a context of increasing levels of racial/ethnic diversity as well as heightened intercultural tensions and racism across the Australian population (Markus, 2013). While the vulnerability of school students to racial discrimination's harmful effects on health, including mental health outcomes such as depression and loneliness, is increasingly recognised, the prevalence and impacts of racial discrimination on children and youth remains understudied, particularly among pre-adolescent populations and in contexts outside North America.

Extending previous research, this study (a) examined both direct and vicarious experiences of racial discrimination reported by students, where very few studies previously have examined the health impacts of vicarious racial discrimination among student populations, nor the co-occurrence and interrelationships between direct and vicarious racial discrimination. Furthermore, to better understand whether school students' motivated fairness and attitudes towards other racial/ethnic groups influence the effect of racism on their depression and loneliness outcomes, this study (b) tested moderation effects and found motivated fairness significantly modified the association between direct racism and depression.

PREVALENCE FINDINGS

Student experiences of racism were substantial, with nearly half of students born in non-English speaking countries experiencing at least one form of direct

racism once a month or more, and nearly a quarter of all students experiencing at least one form of direct racism every day. Vicarious experiences of racism were proportionately higher still, with two thirds of students reporting that other students were called names or teased due to their cultural background at least once a month. Both direct racism and loneliness were more likely to be experienced by students from non-English backgrounds and direct experiences of racial discrimination were consistently related to higher levels of loneliness and depression after adjusting for demographic differences as well as racial/ethnic attitudes and motivated fairness. This finding is consistent with the existing evidence that racial discrimination is a key health risk in school environments (N. Priest et al., 2013) and the few studies that have specifically examined racism as a determinant of loneliness (Juang & Alvarez, 2010; Neto & Barros, 2000).

For students who were themselves born in English speaking countries along with their parents, having more friends from other cultures was associated with higher levels of loneliness and depression. We speculate that these majority group students with more friends from other cultures may be more likely to witness these friends experiencing racism or be more sensitised to negative emotional consequences from these experiences, manifesting as increased depression and loneliness. Another possibility is that higher loneliness and depression may be linked to these majority group students experiencing a degree of ostracism from their majority group peers. In other words, they may experience exclusion due to having friends from other cultures, or they may make friends with students from other cultures after being excluded by those from their own culture. Further investigation across multiple time points and using more in-depth measures of peer relations and friendship networks is required to investigate this finding in more detail.

More positively, 44.3% of students reported high levels of motivated fairness towards those from other cultural groups and 69.3% reported positive racial/ethnic attitudes, with both these variables associated with reduced reporting of racism. However, it is still concerning that over half of school students report low levels of motivation to be fair to those from other cultural groups. Students who were motivated to be fair were also less likely to report loneliness, after adjusting for direct and vicarious experiences of racism. Although this finding requires further exploration across a wider sample and using more detailed measures, it suggests that anti-racism and prejudice reduction interventions within schools may serve to benefit

the mental health outcomes of those from both majority and minority racial/ethnic backgrounds.

INTERACTION FINDINGS

Although motivated fairness was associated with both reduced experiences of direct racism and loneliness at a bivariate level, those with high levels of motivated fairness who also report direct experiences of racism are at greater risk of experiencing depression, supporting our second prediction. This novel finding requires exploration in future research but is consistent with effects found in at least one previous study in which people viewing the world as unfair/unjust who experienced discrimination (and perceive it as common rather than rare) were more likely to be depressed (Stroebe et al., 2011). It may be that high levels of motivated fairness among individuals in our study reflect unfair/unjust worldviews and a belief that racism is commonplace.

The motivation to respond without prejudice (Plant & Devine, 1998) has typically been applied as a self-regulatory process determining prejudice reduction in perpetrators (e.g. Devine, Plant, Amodio, Harmon-Jones, & Vance, 2002). However, such motivations may also function in both perpetrators and recipients of prejudice alike as a form of just-world belief. School students may apply directives from others – parents, teachers and peers – as well as themselves, to be fair to other groups as guiding social principles, and when these principles are violated through experiences of racism, wellbeing may be adversely (and disproportionately) affected.

The interaction between discrimination and motivated fairness may also be explained by cognitive dissonance theory (Festinger, 1957), which seeks to describe a universal motivation for justification and rationalisation. The theory posits that attempts at dissonance reduction are driven by an ego-justifying desire to preserve a positive image of the self following behaviour that contradicts such an image (Aronson, 1992; Greenwald & Ronis, 1978; Steele & Liu, 1983). Jost and his colleagues (J. T. Jost & Banaji, 1994; J.T. Jost, Banaji, & Nosek, 2004) extended this reasoning in their system justification theory (SJT), suggesting that people experience ideological dissonance and are thus motivated to defend the system – rather than the self – even if this comes at the expense of a positive self image (e.g., J.T. Jost, Pelham, Sheldon, & Ni Sullivan, 2003).

SJT suggests that individuals are motivated to perceive the social system as fair and just, and perceptions of systemic fairness serve a palliative function, reducing

anxiety and dissonance for individuals within that system (J.T. Jost & Hunyady, 2002). Consistent with this reasoning, those who endorse just-world beliefs, such as meritocracy, appear to be more adversely affected by discrimination experiences (e.g., Foster, Sloto, & Ruby, 2006; Major, Kaiser, O'Brien, & McCoy, 2007). Similarly, within clinical psychology, approaches such as cognitive behavioural therapy recognise that an individual holding strong core beliefs regarding fairness, such as “I/others should be treated fairly” will be likely to experience more psychological distress when this does not occur than an individual who does not hold this belief (Edelman, 2013). Extending this reasoning, it is plausible that students in our sample who endorsed just-world beliefs in the form of motivated fairness were more adversely affected by experiences of discrimination because this contravened their expectations of fairness. Exploring how to promote motivated fairness among students within interventions, without leading to increased loneliness or depression, is also an important priority for anti-racism intervention work with school students.

Contrary to our expectations, racial/ethnic attitudes did not act as a moderator of associations between experiences of racism and either depression or loneliness. Rather, we found that there was a direct association between racial/ethnic attitudes and direct racism experiences, with higher levels of reported experiences of direct racism associated with less positive racial/ethnic attitudes. Relationships between racial discrimination experiences (whether direct or vicarious) and racial/ethnic attitudes have rarely been studied empirically among adults or children (Habtegiorgis, Paradies, & Dunn, Under Review). More work is required both theoretically and empirically to examine relationships between these constructs which are possibly reciprocal and mutually reinforcing.

LIMITATIONS

Previous research suggests that vicarious racism may also interact with direct racism to predict negative mental health, however were unable to test this prediction as there were too few students that experienced direct racism but not vicarious racism. Several existing studies do suggest that “being aware of racial harassment aimed at others may be nearly as toxic as being the direct target of racial harassment” (Chrobot-Mason, Ragins, & Linnehan, 2013 p. 485) and that vicarious racism at work “was associated with deleterious wellbeing consequences that were comparable to those suffered by direct targets” (Douglas Low, Radhakrishnan, Schneider, & Rounds, 2007 p. 2290). Several studies have also identified that vicarious experiences

of racism, specifically carer experiences of racism, have deleterious effects on child health outcomes (Kelly et al., 2012; N Priest et al., 2012).

The use of binary coded response scales limited variance in responses, resulting in the overlap between those experiencing vicarious and direct forms of discrimination, therefore, testing interactions between direct and vicarious experiences of racism with health effects using the use of continuous variables and multi-item scales is an important first step to overcome limitations of using binary responses in analysis. However, single-item indicators of health or events are not atypical in community-based studies with adults and children, given the need to limit participation demands for participants as well as schools. Single item measures of self-rated health are commonly used and have been shown to predict objective health outcomes (DeSalvo, Bloser, Reynolds, He, & Muntner, 2006). Given the constraints of the intervention evaluation from which the data for the present study was drawn which required the use of short-form measures, there is a need to replicate our findings using more robust psychometrically validated instruments across a larger sample. Nonetheless, the findings of this study in terms of the effects of racial discrimination on student reported loneliness and depression are consistent with studies using multi-item measures of these constructs.

There were a number of more minor methodological limitations including the inability to generalize to other student populations within (and beyond) Australia as the study population is not a representative sample of Australian school students. More detailed and nuanced measurement of racial/ethnic background is recommended in future studies. For example, other variables such as language spoken at home, English proficiency, nativity/immigrant status, self-identified racial/ethnic background, and religious background, in addition to country of birth should be considered. The study is also limited by a relatively small sample size that may reduce power in subgroup analyses and the cross-sectional design also limits definitive conclusions about causal directions. Although longitudinal studies suggest that racism precedes poor health (Paradies, 2006; Pascoe & Smart Richman, 2009; D. R. Williams & Mohammed, 2009), the converse cannot be ruled out in this study. It is also plausible that loneliness and depression precede low levels of motivated fairness, or that these function in a reciprocal process. Future research should employ longitudinal designs to examine trajectories of experiences of racism and racial/ethnic

attitudes in relation to outcomes such as loneliness and depression, as well as to explore moderating, and mediating factors of these relationships over time.

CONCLUSION AND IMPLICATIONS

The findings of our study support a need for effective school-based interventions aimed at improving emotional wellbeing through reducing race-based discrimination and promoting positive attitudes towards diversity. Emerging literature suggest that positive benefits can be achieved through well-designed programs (Aboud et al., 2012; Cristol & Gimbert, 2008; Johnson & Aboud, 2013). Interventions to promote a culture of fairness in school may in particular have a positive impact on experiences of loneliness for all students. Our findings also suggest, however, that just-world type beliefs like motivated fairness might *facilitate* the adverse effects of direct racism experiences on health so caution when designing such interventions is advised.

The present study demonstrates the importance of considering more complex pathways through which racism impacts health, namely both the context in which racism is experienced and individual beliefs about whether students should be fair to people from other groups. As we have argued, both of these moderating factors may relate to just-world perceptions. This study is the first of its kind internationally to show that motivated fairness beliefs moderate the association between direct experiences of racism and emotional health outcomes among school students, and the first in Australia to show associations between direct experiences of racism and adverse emotional health outcomes among school students. We thus provide a basis for more work exploring these findings across larger samples using more robust measures and longitudinal designs.

It is widely acknowledged that childhood and adolescence are foundational for mental health outcomes throughout life (Maggi, Irwin, Siddiqi, & Hertzman, 2010). Interventions within these periods are widely recommended as an important means of reducing inequalities in mental health outcomes across the lifespan. Thus, further research is needed both to improve our understanding of racism as a determinant of mental health for children and youth and to inform action to prevent racism and ameliorate its detrimental effects (Paradies et al., 2009).

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Table 1 Sample characteristics of students (n = 263) by self-reported direct racism and vicarious racism

	% (n)	Direct racism		Vicarious racism	
		% reporting (n)	Unadjusted OR (95% CI)	% reporting (n)	Unadjusted OR (95% CI)
Gender					
Male	45.63 (120)	35.29 (42)	1.00	67.50 (81)	1.00
Female	54.37 (143)	29.79 (42)	0.78 (0.29, 2.12)	75.00 (105)	1.44 (0.89, 2.34)
Age	-	-	1.01 (0.71, 1.43)	-	1.08 (0.92, 1.27)
Birth-country					
Student and parents born in English speaking countries	37.64 (99)	19.19 (19)	1.00	64.29 (63)	1.00
Student born in English speaking countries, parents born non-English speaking countries	29.28 (77)	34.21 (26)	2.19* (1.06, 4.52)	74.03 (57)	1.58 (0.87, 2.89)
Child and parent born non-English speaking countries	25.10 (66)	45.31 (29)	3.49* (1.12, 10.89)	78.12 (50)	1.98* (1.17, 3.38)
One or both parents country of birth unknown	7.98 (21)	42.86 (9)	3.16* (1.16, 8.62)	76.19 (16)	1.78 (0.70, 4.53)
How many friends from other cultures					

None / A few	62.45 (163)	32.52 (53)	1.00	71.60 (116)	1.00
Some / Lots	37.55 (98)	31.96 (31)	0.97 (0.42, 2.27)	71.43 (70)	0.99 (0.47, 2.08)
Loneliness					
Rarely	70.43 (181)	23.76 (43)	1.00	69.61 (126)	1.00
Sometimes/Most times	29.57 (76)	51.32 (39)	3.38** (1.66, 6.88)	78.67 (59)	1.61 (0.82, 3.16)
Depression					
Rarely	63.04 (162)	23.46 (38)	1.00	70.37 (114)	1.00
Sometimes/Most times	36.96 (95)	46.32 (44)	2.82* (1.12, 7.11)	75.53 (71)	1.30 (0.67, 2.51)
Vicarious racism					
Never	28.35 (74)	6.85 (5)	1.00	-	-
Every day/week/month	71.65 (187)	42.25 (79)	9.95** (2.23, 44.31)	-	-
Direct racism					
Never	67.82 (177)	-	-	61.36 (108)	1.00
Every day/week/month	32.18 (84)	-	-	94.05 (79)	9.95** (2.23, 44.31)
Motivated fairness					
Rarely/sometimes	55.73 (146)	40.41 (59)	1.00	75.86 (110)	1.00
Most times	44.27 (116)	21.93 (25)	0.41** (0.25, 0.68)	66.96 (77)	0.64* (0.42, 0.98)
Positive racial/ethnic attitudes					
Rarely/sometimes	30.68 (81)	37.50 (30)	1.00	76.25 (61)	1.00

Most times	69.32 (183)	29.83 (54)	0.71* (0.50, 0.99)	69.61 (126)	0.71 (0.40, 1.27)
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‡ $p < .10$, * $p < .05$, ** $p < .01$

Table 2 Sample characteristics of students (n = 263) by motivated fairness and racial/ethnic attitudes

	Motivated fairness		Racial/ethnic attitudes	
	% reporting (n)	Unadjusted OR (95% CI)	% reporting (n)	Unadjusted OR (95% CI)
Gender				
Male	32.50 (39)	1.00	69.17 (83)	1.00
Female	53.90 (76)	2.43 ^{**} (1.34, 4.39)	69.23 (99)	1.00 (0.55, 1.83)
Age	-	0.97 (0.86, 1.10)	-	0.88 [‡] (0.77, 1.02)
Birth-country				
Student and parents born in English speaking countries	48.48 (48)	1.00	66.67 (66)	1.00
Student born in English speaking countries, parents born non-English speaking countries	45.45 (35)	0.89 (0.37, 2.10)	70.13 (54)	1.17 (0.60, 2.29)

Child and parent born non-English speaking countries	40.62 (26)	0.73 (0.36, 1.45)	69.70 (46)	1.15 (0.50, 2.65)
One or both parents country of birth unknown	28.57 (6)	0.43** (0.23, 0.80)	76.19 (16)	1.60 (0.75, 3.40)
How many friends from other cultures				
None / A few	42.68 (70)	1.00	65.85 (108)	1.00
Some / Lots	47.42 (46)	1.21 (0.88, 1.67)	75.51 (74)	1.60 (0.58, 4.41)
Loneliness				
Rarely	47.51 (86)	1.00	69.61 (126)	1.00
Sometimes/Most times	25.06 (27)	0.60 (0.28, 1.25)	68.83 (53)	0.96 (0.62, 1.51)
Depression				
Rarely	45.06 (73)	1.00	73.46 (119)	1.00
Sometimes/Most times	41.67 (40)	0.87 (0.60, 1.27)	62.50 (60)	0.60* (0.40, 0.91)
Vicarious racism				
Never	52.05 (38)	1.00	74.32 (55)	1.00
Every day/week/month	41.18 (77)	0.64* (0.42, 0.98)	67.38 (126)	0.71 (0.40, 1.27)
Direct racism				
Never	50.57 (89)	1.00	71.75 (127)	1.00
Every day/week/month	29,76 (25)	0.41** (0.25, 0.68)	64.29 (54)	0.71* (0.50, 0.99)
Motivated fairness				
Rarely/sometimes	-	-	64.38 (94)	1.00

Most times	-	-	75.00 (87)	1.66** (1.19, 2.31)
Positive racial/ethnic attitudes				
Rarely/sometimes	35.80 (29)	1.00	-	-
Most times	48.07 (87)	1.66** (1.19, 2.31)	-	-

‡ $p < .10$, * $p < .05$, ** $p < .01$

Table 3 Multivariate associations between direct racism and loneliness

	OR (95% CI)	Adjusted OR (95% CI)	Adjusted OR (95% CI)
Direct racism			
Never	1.0	1.0	1.0
Every day/week/month	3.38** (1.66, 6.88)	3.94** (1.73, 9.01)	4.13** (1.62, 10.53)
Age		0.88‡ (0.77, 1.02)	0.85* (0.72, 1.00)
Gender			
Male		1.0	1.0
Female		1.46 (0.86, 2.48)	1.55‡ (0.93, 2.56)
Racial/Ethnic background			
Students and parents born English speaking countries		1.0	1.0
Student born English, parents born non-English speaking countries		1.06 (0.59, 1.91)	1.04 (0.59, 1.85)
Student and parent born non-English speaking countries		0.69** (0.56, 0.85)	0.68** (0.59, 0.78)
One or both parents country of birth unknown		0.38 (0.06, 2.45)	0.32 (0.04, 2.28)
Friends from other cultures			
None/a few		1.0	1.0
Some/lots		2.09** (1.33, 3.29)	2.25** (1.37, 3.69)
Positive intercultural attitudes			
Rarely/sometimes			1.0
Most times			0.94 (0.55, 1.60)
Vicarious racism			
Never			1.0

Every day/week/month	1.07 (0.52, 2.21)
Motivated fairness	
Rarely/sometimes	1.0
Most times	0.09* (0.01, 0.97)

‡ $p < .10$, * $p < .05$, ** $p < .01$

Base category: *not much* loneliness

Table 4 Multivariate associations between direct racism and depression

	OR (95% CI)	Adjusted OR (95% CI)	Adjusted OR (95% CI)
Direct racism			
Never	1.0	1.0	1.0
Every day/week/month	2.82* (1.12, 7.11)	3.18* (1.30, 7.77)	3.60* (1.26, 10.27)
Stratified by motivated fairness = rarely/sometimes			2.77* (1.04, 7.40)
Stratified by motivated fairness = most times			9.05** (1.67, 49.06)
Age		1.10 (0.98, 1.24)	1.08 (0.95, 1.23)
Gender			
Male		1.0	1.0
Female		2.41** (1.27, 4.58)	2.66** (1.39, 5.11)
Racial/Ethnic background			
Students and parents born English speaking countries		1.0	1.0
Student born English, parents born non-English speaking countries		0.67** (0.56, 0.81)	0.66** (0.53, 0.83)
Student and parent born non-English speaking countries		0.82 (0.41, 1.65)	0.81 (0.40, 1.64)
One or both parents country of birth unknown		0.46‡ (0.20, 1.10)	0.43‡ (0.17, 1.05)
Friends from other cultures			
None/a few		1.0	1.0
Some/lots		1.68** (1.32, 2.15)	1.76** (1.40, 2.22)
Positive racial/ethnic attitudes			
Rarely/sometimes			1.0
Most times			0.67 (0.39, 1.14)
Vicarious racism			

Never	1.0
Every day/week/month	0.70 (0.27, 1.83)
Motivated fairness	
Rarely/sometimes	1.0
Most times	0.19 (0.03, 1.42)

‡ $p < .10$, * $p < .05$, ** $p < .01$

Base category: *not much* depression

Appendix

Item content and factor loadings (from the polychoric correlation matrix) for student attitudes and experiences using maximum likelihood factor analysis with oblique (geomin) rotation. Adjusted for clustering effects of school.

	Factor 1	Factor 2	Factor 3	Factor 4
<i>Items assessing motivated fairness</i>				
It is important to me that I'm nice to people from different cultural groups	0.61	0.16	0.02	0.05
Other students expect me to be nice to people from different cultures	0.66	0.07	-0.02	-0.18
Adults expect me to be nice to people from different cultures	0.86	-0.13	-0.03	0.01
Teachers want us to be friends with students from other cultural groups	0.62	0.05	0.11	0.00
<i>Items assessing positive racial/ethnic attitudes</i>				
People from other cultural groups are good	0.24	0.74	-0.13	0.10
People from other cultural groups are nice/kind*	0.02	0.76	-0.02	-0.21
People from other cultural groups are smart	0.00	0.00	0.00	0.11

Items assessing direct racism experiences

Other students said that you don't belong in Australia	0.11	0.00	0.78	0.09
Other students didn't want to play/hang out with you because of your culture*	0.24	-0.16	0.91	-0.04
A teacher thought you couldn't do something because of your culture	-0.07	-0.09	0.76	-0.06
You were left out by a student because of your culture	-0.06	0.06	0.80	0.15
You were left out by a teacher because of your culture	-0.01	0.11	0.84	0.08
You were spat on, pushed or hit by other students because of your culture	-0.06	0.03	0.68	0.16

Items assessing vicarious racism experiences

Students are left out because of their cultural group	0.04	-0.13	0.01	0.60
Students are called names or teased because of their cultural group	0.09	0.03	0.08	0.64
Students are spat on, pushed or hit because of their cultural group	-0.09	0.00	0.04	0.75

* Indicates that items were worded differently for primary/secondary students