



Mindfulness: Relations with Prejudice, Social Dominance Orientation, and Right-Wing Authoritarianism

Adelheid A. M. Nicol¹ · Kalee De France²

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Abstract

Mindfulness is associated with being less judgmental and with a reduction in feelings of anxiety. It is believed to increase non-judgmental cognitive processing and reduce negative associations as a consequence of automatic processing. We hypothesized that mindfulness is negatively correlated with prejudiced attitudes. In a series of five studies, with sample sizes ranging from 93 to 184, participants from Prolific, psychology research sites, or college completed measures online. We examined the relation of three mindfulness measures, the Mindful Attention Awareness Scale, the Cognitive and Affective Mindfulness Scale-Revised, and the Kentucky Inventory of Mindfulness Skills with three markers of prejudice: attitudes to outgroups, an affective thermometer scale, and social worldviews. The attitudinal instrument focused on stigmatized groups, such as newcomers, homeless persons, handicapped individuals, and Blacks. The affective thermometer measured feelings of warmth to individuals classified as dissident, derogated, or dangerous. The two social worldviews assessed were Social Dominance Orientation and Right-Wing Authoritarianism, both associated with prejudice. Few significant associations were found. The only significant associations found were between the Kentucky Inventory of Mindfulness Skills, Right-Wing Authoritarianism, and Social Dominance Orientation. These findings provide little support for the relation between trait mindfulness and attitudinal expressions of prejudice.

Keywords Mindfulness trait · Prejudice · Attitudes to outgroups · Social dominance orientation · Right-wing authoritarianism

Introduction

Extensive research on mindfulness demonstrated its ability to reduce stress (Khoury et al. 2015), anxiety (Soysa and Wilcomb 2015), pain (Lakhan and Schofield 2013), depression (Gu et al. 2015), and improve psychological well-being (e.g., Eberth and Sedlmeier 2012). Given these benefits, researchers broadened the study of the impact of mindfulness programs, as well as the associations between state or trait mindfulness, with other psychological constructs (e.g., Eberth and Sedlmeier 2012), such as job satisfaction (e.g.,

Hülshager et al. 2013), group performance (e.g., Cleirigh and Greaney 2015), personality (e.g., Giluk 2009), aggression (e.g., Heppner et al. 2008), and empathy (e.g., Birnie et al. 2010). One new line of research with important individual, social, and societal benefits is the study of mindfulness and prejudice (Demick 2000).

Kabat-Zinn (2003) wrote that mindfulness requires attending to the present in a non-judgmental fashion. This non-judgmental element is a facet that frequently emerges in various conceptualizations of mindfulness (Chiesa 2013). For instance, Baer et al. (2004) and Feldman et al. (2007) both included being non-judgmental about experience as one of four key elements of mindfulness (the other three components were attention regulation, focus on the present, and being aware of personal actions). Moreover, after conducting a thematic analysis of mindfulness from existing theoretical and empirical articles, Nilsson and Kazemi (2016) posited that mindfulness can be defined as consisting of four core elements: awareness and attention (ability to focus attention and be self-aware), focus on the present (“present-centredness”), being aware of events occurring

✉ Adelheid A. M. Nicol
nicol-a@rmc.ca

¹ Military Psychology and Leadership Department, The Royal Military College of Canada, P. O. Box 17000, Station forces, Kingston, ON K7K 7B4, Canada

² Department of Psychology, Queen’s University, Kingston, ON, Canada

outside the body, and cultivation (developing one's character, insight, and peace). Nilsson and Kazemi also suggested a fifth element, ethical mindedness, which encompasses employing mindfulness for social good and not just personal benefit. Although "non-judgmental" was not an independent element of Nilsson and Kazemi's conceptualization of mindfulness, it arose frequently as part of other components, such as attention and awareness. Finally, Brown et al. (2007) indicated mindfulness has its roots in both attention and awareness. Typically, individuals become aware of stimuli, attend to them, and then react emotionally or cognitively, resulting in judgments, thoughts, and behaviors that are not impartial. Mindfulness encourages individuals to merely acknowledge the presence of stimuli rather than react to them, resulting in a non-judgmental interpretation of the environment and flexibility in thought (Grossman 2015; Hayes et al. 2002).

The non-judgmental component of mindfulness suggests mindful individuals are less likely to judge events, situations, and other people. Therefore, they may be less likely to rely on stereotypes in decision-making or attitude formation (Grossman 2015; Yusainy and Lawrence 2014). This may occur as a result of self-regulation (e.g., Gervais and Hoffman 2013) or anxiety reduction (e.g., Weinstein et al. 2009), which may impact cognitions in two ways. First, mindfulness may encourage a form of self-regulation (Gervais and Hoffman 2013) or de-automatization (Kang et al. 2013) in cognitive processing that allows individuals to avoid responding blindly or automatically, thereby reducing the likelihood that individuals will rely on stereotyped or well-learned responses (Yusainy and Lawrence 2014). Therefore, individuals high in mindfulness may rely less on automatic processing when interpreting their environments. Second, mindfulness may be related with reducing anxiety when encountering or considering novel situations or people and thereby may be responsible for the development of automatic cognitive processing that encourages evaluating environmental stimuli in a non-judgmental manner. For example, Weinstein et al. (2009) suggest that mindfulness promotes more open and willing responses to challenging or threatening environmental stimuli, thereby reducing negative appraisals, lowering perceived stress, and fostering an enhanced capacity to manage situations that may be perceived as challenging, threatening, or harmful. Therefore, when individuals exhibit high levels of trait mindfulness, they may also possess automatic, well-learned cognitions that encourage more positive and approach-driven thoughts, coupled with a heightened perceived ability to cope with environmental cues deemed stress inducing. Lending support to this supposition, Feldman et al. (2007) found their measure of mindfulness was positively correlated with many adaptive regulation facets and negatively correlated with poor emotion regulation techniques and anxiety.

The association between heightened mindfulness and non-judgmental cognitive processing has encouraged the

examination of the association between mindfulness and prejudice. Primarily, studies have focused on examining the influence of mindfulness training programs, or mindfulness priming, in the reduction of either explicit or implicit prejudice. For example, individuals who regularly practiced compassion-based or loving-kindness meditation expressed less racial prejudice, greater empathy, and more positive attitudes towards others than those who did not (Hunsinger et al. 2014). Kang et al. (2015) found a 6-week loving-kindness meditation program reduced implicit biases towards Blacks and homeless individuals but not explicit attitudes towards these two groups. Edwards et al. (2017) found priming of mindfulness reduced the negative effects of perspective-taking on implicit biases towards the elderly. Schimchowitsch and Rohmer (2016) found inexperienced meditators demonstrated greater negative implicit bias towards people with disabilities than experienced meditators, suggesting the automatic categorization of this often-stigmatized group is reduced in individuals who practice meditation. Moreover, Lueke and Gibson (2015) suggested that invoking mindfulness reduces automatic associations. They found that listening to a brief audio on mindfulness resulted in less age and racial bias measured with an implicit associations task (Lueke and Gibson 2015) and decreased discrimination in a trust game (Lueke and Gibson 2016). In a study by Tincher et al. (2016), results showed that participants who had undergone a mindful attention program demonstrated reduced bias in a linguistic description task. Finally, research by Price-Blackshear et al. (2017) found that engaging in mindfulness-type practices, such as meditation, yoga, or loving-kindness, moderated the association between intergroup anxiety and negative attitudes to outgroups such that this association was weaker for those who participated in mindfulness practices.

Although programs designed to invoke mindfulness suggest an immediate temporary reduction in prejudice, particularly at the implicit level, research examining the relation between trait mindfulness and explicit prejudice is sparse and contradictory. For example, Gervais and Hoffman (2013) found that men reporting greater mindfulness on the Philadelphia Mindfulness Scale (Cardaciotto et al. 2008) expressed less benevolent sexism while women reporting greater mindfulness expressed less hostile sexism. However, Niemiec et al. (2010) found that the Mindful Attention Awareness Scale (MAAS; Brown and Ryan 2003) did not correlate with the Big Five's Openness to experience personality dimension or with nationalism or political attitudes, both constructs extensively studied and found to be related with prejudice (e.g., Cohrs et al. 2012; Heaven et al. 2006). Similar results were found when employing another commonly used measure of mindfulness, the Kentucky Inventory of Mindfulness Skills (KIMS), for which only one subscale was associated with Openness (Baer et al. 2004). Furthermore, although empathy is identified as an important precursor to

prejudice (Bäckström and Björklund 2007), studies have shown inconsistent relations between empathy and mindfulness, depending upon the mindfulness measure employed. For instance, Birnie et al. (2010) ascertained that mindfulness, measured using the MAAS, was significantly correlated with perspective taking, but did not correlate with empathic concern for others. Dekeyser et al. (2008) found the KIMS Observe and Describe subscales correlated significantly with perspective taking while Describe, Aware, and Accept were significantly correlated with empathic concern. From the limited research on trait mindfulness and prejudice, it is unclear if a relation actually exists.

Despite the conflicting evidence presented so far, because mindfulness involves de-automatization of processing cognitive information, being non-judgmental, and having better coping skills for anxiety, high levels of trait mindfulness may be associated with reductions in prejudice, such as fewer negative attitudes to outgroups, warmer feelings to outgroup members, as well as more positive social worldviews, such as lower Social Dominance Orientation (SDO) and Right-Wing Authoritarianism (RWA). SDO is a measure of attitudes towards hierarchy, status, and inequality among people; the more a person subscribes to the importance of dominance and disparity among people, the more likely they will express negative attitudes towards others (Ho et al. 2012; Pratto et al. 1994). RWA assesses an individual's attitudes regarding following traditional values, accepting an aggressive stance when sanctioned by political leaders and the law, and submitting to authority (Altemeyer 1988; Duckitt et al. 2010). Therefore, SDO and RWA are linked to prejudice and negative attitudes to outgroups (e.g., Sibley and Duckitt 2008). Moreover, social worldviews help make sense of the world and reduce anxiety brought-on by new situations. Blair et al. (2003) suggested anxiety can emerge from social worldviews that foster fears that outgroups will dominate or that personal values will be attacked. These are highly salient concerns for the individual scoring high on SDO or RWA (e.g., Duckitt et al. 2002). Therefore, determining the trait mindfulness' relation with various types of measures of prejudice, as well as different target groups as each may activate different affective regulatory responses or have different underlying motivational goals (e.g., Duckitt 2006), will provide a broad examination of the association between trait mindfulness and explicit prejudice.

We conducted five studies exploring the relation of mindfulness with attitudes, feelings, or social worldviews associated with prejudice. Three measures of mindfulness were employed as different mindfulness instruments were designed from alternate perspectives, even though they fall under the broad definition of mindfulness. These different perspectives suggest different underlying processes (Baer et al. 2006) and therefore including them would encompass a broader picture of the potential relation between mindfulness and prejudice.

We hypothesized that higher scores on the mindfulness measures should be associated with lower scores on indices of prejudice.

Study 1

Method

Participants

Participants included 182 individuals (55% female, mean age = 35.72 years) recruited from Prolific, a crowdsourcing research website. Participants resided predominantly in Europe (68%) and North America (32%), and the majority of participants self-identified as white (98%).

Procedure

The research was approved by the Research Ethics Board of the Royal Military College of Canada. We recruited participants online by advertising the study on Prolific. Participants were compensated with £1.25 for completing the study. After clicking the study title, participants were directed to Survey Monkey where they provided informed consent, followed by completion of the study measures and demographic information, such as gender, country of residence, and education level.

Measures

Mindfulness was measured using two independent self-report surveys, and the order of their delivery was counterbalanced to prevent biased responses. The MAAS (Brown and Ryan 2003) is a 15-item self-report survey which assesses the extent to which an individual reports being mindful of emotions and day-to-day activities, such as driving, eating, and completing tasks (sample item: "I could be experiencing some emotion and not be conscious of it until some time later."). Participants report how frequently they experience each of the behaviors listed, using a one (*almost always*) to six (*almost never*) scale. Therefore, although the MAAS is written such that all items reflect non-mindfulness, here, high total MAAS scores reflect higher trait mindfulness. The MAAS showed strong inter-item consistency, Cronbach's alpha = 0.87.

We also used the Cognitive and Affective Mindfulness Scale-Revised (CAMS-R; Feldman et al. 2007), which is a 12-item self-report survey assessing how much individuals are present in the moment, as well as how much they are cognizant and non-judgmental of their thoughts and emotions (e.g., "I try to notice my thoughts without judging them."). Participants indicate how much each item relates to them using a one (*rarely/not at all*) to four (*almost always*) scale. High CAMS-R scores reflect higher trait mindfulness. The

CAMS-R demonstrated strong internal consistency, Cronbach's $\alpha = 0.85$.

We measured prejudice by creating four composite scales each based on items used in previous measures of prejudice. Three items assessed attitudes to newcomers (ATN; Zick et al. 2008; e.g., “Those who have always been living here should have more rights than those who came later.”), eight items assessed attitudes towards Blacks (ATB; adapted from Glick and Fiske 2001; McConahay 1986; Pratto et al. 1994; e.g., “Blacks are inherently inferior.”), three items assessed attitudes to the homeless (ATH; Zick et al. 2008; “The homeless in towns are unpleasant.”), and four items assessed attitudes to handicapped individuals (ATHP; wording adapted from Crandall 1994; Zick et al. 2008; e.g., “I really don't like handicapped people much.”). For each group, individuals reported how much they agreed with the statements provided using a one (*strongly disagree*) to seven (*strongly agree*) Likert scale. Higher scores on each scale reflect higher levels of prejudice towards that group. Each scale demonstrated acceptable to strong inter-item consistency, Cronbach's $\alpha = 0.75$ (newcomers), 0.68 (homeless), 0.62 (handicapped people), and 0.93 (Blacks).

Data Analyses

SPSS was used for all data processing and analyses. The data were checked for outliers and normality of distribution. All responses were within 3.5 standard deviations of the sample mean, and no variables exceeded acceptable levels of skew or kurtosis. Results of a sample power assessment showed that a minimum of 84 participants was necessary to significantly identify a medium effect size with four predictors (age, gender, MAAS, CAMS-R). Stepwise regressions were run, each with two steps. First, age and gender were entered in order to control for their effects on the dependent variable, followed by the mindfulness measures in step 2.

Results

Table 1 features correlations, means, standard deviations, and gender differences of all study 1 variables. Significant gender differences were found only for ATB, wherein male participants reported significantly higher levels of prejudice towards Blacks.

To assess the ability of mindfulness to predict prejudice against outgroups, separate stepwise regressions were run on each prejudice variable. For each analysis, age and gender were entered into the model first, followed by the mindfulness measures. The results of these analyses revealed that age was significantly predictive of ATB, ATN, and ATH, wherein older age was associated with higher levels of prejudice (see Table 2). Gender significantly predicted ATB and ATN, wherein being male was associated with higher levels of

prejudice. For mindfulness, CAMS-R was significantly predictive of prejudice for both ATH and ATHP, while MAAS was predictive of only ATHP. Lower CAMS-R scores were associated with higher levels of prejudice for both ATH and ATHP; however, higher MAAS scores were associated with higher levels of prejudice for ATHP. Neither mindfulness measure significantly predicted ATB or ATN.

Discussion

Mindfulness predicted prejudice for two of the four groups of interest in the current study. However, the two mindfulness measures produced conflicting results. While the CAMS-R produced results in the hypothesized direction, the MAAS scores were positively associated with prejudice towards handicapped persons. While the items on the MAAS reflect attention and being present in the moment, they do not capture the non-judgmental aspect of mindfulness, therefore merely attending to oneself and being aware of the present may not be sufficient to reduce prejudice. The CAMS-R has items on self-awareness and being non-judgmental of the self; nevertheless, the CAMS-R did not demonstrate strong, consistent, significant relations with attitudes to all four attitude groups. Significant correlations were found between all four outgroup attitude measures, suggesting that expressing negative or positive attitudes to one outgroup was related to expressing similar attitudes to another outgroup.

Study 2

Method

Participants

Study 2 included 184 participants recruited from Prolific (49% female, mean age = 34.45 years). Participants resided predominantly in Europe (71%) and North America (28%). The majority (98%) of participants self-identified as white.

Procedure

As in study 1, participants were recruited on Prolific, and the same methodology was employed. Research was approved by the Research Ethics Board of the Royal Military College of Canada.

Measures

The KIMS (Baer et al. 2004) is a 39-item self-report scale that assesses four components of mindfulness: being observant of bodily sensations, cognitions, emotions, and external stimuli (Observe; e.g., “I notice changes in my body, such as whether

Table 1 Correlations between all study 1 variables (Mindful Attention Awareness Scale, Cognitive and Affective Mindfulness Scale—Revised, and attitudes to various outgroups), as well as means, standard deviations, and gender differences

	MAAS (1–6)	CMS-R (1–4)	ATN (1–7)	ATH (1–7)	ATHP (1–7)	ATB (1–7)	Age
Mindful Attention Awareness Scale (MAAS)	–						
Cognitive and Affective Mindfulness Scale—Revised (CMS-R)	0.60**	–					
Attitudes to newcomers (ATN)	0.07	0.05	–				
Attitudes to homeless (ATH)	0.04	–0.12	0.41**	–			
Attitudes to handicapped (ATHP)	–0.01	–0.23**	0.27**	0.38**	–		
Attitudes to Blacks (ATB)	0.15*	0.05	0.55**	0.39**	0.36**	–	
Age	0.24**	0.25**	0.30**	0.18*	–0.05	0.25**	–
Mean	3.80	2.62	3.63	3.63	2.43	2.25	35.72
SD	1.77	0.52	1.31	1.31	0.99	1.34	12.25
<i>t</i> (<i>p</i>)	0.33 (0.74)	0.43 (0.66)	1.33 (0.18)	0.99 (0.32)	1.71 (0.09)	2.88 (0.005)	1.27 (.21)

T tests assess differences between men and women

* $p < 0.05$; ** $p < 0.01$

my breathing slows down or speeds up.”); being able to describe, label, and take note of observed phenomena (Describe; e.g., “I am good at finding the words to describe my feelings.”); engaging in activities with undivided attention and awareness (Aware; e.g. reverse coded, “When I do things, my mind wanders off and I’m easily distracted.”); and accepting experiences without any judgment (Accept; e.g., reverse coded: “I criticize myself for having irrational or inappropriate emotions.”). Participants report how true they feel the items are for themselves using a one (*never or rarely true*) to five (*almost always or always true*) scale. Higher KIMS scores reflect higher trait mindfulness. The KIMS total and subscale scores showed strong internal consistencies, Cronbach’s alpha = 0.87 (total), 0.82 (observe), 0.91 (describe), 0.84 (aware), and 0.89 (accept).

Table 2 Study 1 regression predictors and model results using the Mindful Attention Awareness Scale (MAAS) and the Cognitive and Affective Mindfulness Scale—Revised (CAMS-R) scales, as well as gender and age as predictors

Dependent variable	Significant predictors	R^2 change	Final model standardized β s	<i>F</i>
Attitudes to newcomers	Age	0.09	0.32	11.36**
	Gender	0.02	–0.15	
Attitudes to homeless	Age	0.03	0.22	5.67*
	CAMS-R	0.03	–0.18	
Attitudes to handicapped	CAMS-R	0.05	–0.35	7.79**
	MAAS	0.07	0.19	
Attitudes to Blacks	Age	0.06	0.27	12.28**
	Gender	0.06	–0.25	

* $p < 0.01$; ** $p < 0.001$

The same prejudice variables were used as described in study 1. Prejudice variables showed strong internal consistency, Cronbach’s alpha = 0.79 (newcomers), 0.76 (homeless), and 0.92 (Blacks). Cronbach’s alpha for the attitudes to handicapped individuals measure was unacceptably low (0.52), even after the weakest item was removed. Therefore, this scale was not included in any of the analyses.

Data Analyses

SPSS was used for all data processing and analyses. The data were checked for outliers and normality of distribution. All the participants’ responses were within 3.7 standard deviations of the sample mean, with no variables exceeding acceptable levels of skewness or kurtosis. Results of a sample power assessment showed that a minimum of 97 participants was necessary to significantly identify a medium effect size with six predictors (age, gender, and KIMS subscales). Stepwise regressions were run, each with two steps. First, age and gender were entered in order to control for their effects on the dependent variable, followed by KIMS total, or KIMS subscales, in step 2.

Results

Table 3 features descriptive statistics and gender differences of all study 2 variables. Significant gender differences were found for all variables except for KIMS Aware. Overall, women scored significantly higher than men on mindfulness. However, for all prejudice variables, men scored significantly higher than women.

Table 3 Correlations between all study 2 variables (the Kentucky Inventory of Mindfulness Skills and attitudes to various outgroups), as well as means, standard deviations, and gender differences

	KIMS total	KIMS observe	KIMS describe	KIMS aware	KIMS accept	ATN	ATH	ATB	Age
KIMS observe	0.57**	–							
KIMS describe	0.72**	0.44**	–						
KIMS aware	0.56**	0.02	0.09	–					
KIMS accept	0.49**	–0.23**	0.14	0.30**	–				
Attitudes to newcomers (ATN)	–0.16*	–0.08	–0.06	–0.14	–0.11	–			
Attitudes to homeless (ATH)	–0.18*	–0.18*	–0.13	–0.01	–0.08	0.42**	–		
Attitudes to Blacks (ATB)	–0.12	0.03	–0.07	–0.08	–0.18*	0.69**	0.41**	–	
Age	.28**	0.06	0.17*	0.26**	0.18*	–0.01	0.04	0.02	–
Mean	3.15	3.33	3.38	2.94	2.93	3.00	3.39	2.22	34.45
SD	0.46	0.71	0.93	0.69	0.86	1.44	1.42	1.24	12.08
<i>t</i> (<i>p</i>)	–3.35 (<0.001)	–2.11 (0.04)	–2.59 (0.01)	0.58 (0.56)	–3.38 (<0.001)	2.48 (0.01)	3.38 (<0.001)	2.82 (0.005)	–3.45 (<0.001)

T tests assess differences between men and women

KIMS Kentucky Inventory of Mindfulness Skills

p* < 0.05; *p* < 0.01

To assess the ability of mindfulness to predict prejudice against outgroups, separate stepwise regressions were run on each prejudice variable. For each analysis, age and gender were entered into the model first, followed by the KIMS total or the KIMS subscales. Separate analyses were run using KIMS total and the KIMS subscales as predictors to avoid violating multicollinearity. The results of these analyses revealed that age was not significantly predictive of any measures of prejudice (see Table 4). However, gender was significantly predictive of every prejudice variable, in which being male was associated with higher levels of prejudice. KIMS observe was significantly predictive of attitudes to the homeless where higher scores were associated with lower prejudice scores. The KIMS total scale score, as well as the describe,

aware, and accept subscales were not significantly predictive of any prejudice variables.

Discussion

In conclusion, mindfulness, as measured by KIMS, did not predict prejudice. The few, low significant correlations, as well as only the KIMS observe subscale emerging as a predictor for attitudes to only one outgroup suggests very low predictive ability of the KIMS. Again, all three prejudiced variables were significantly correlated.

Study 3

Method

Participants

Participants were recruited from Hanover College Psychological Research on the Net. Of the 155 participants registered to complete the study, 59 participants were excluded for quitting the study immediately after indicating consent to proceed with the study. Furthermore, three participants were excluded for scoring more than four standard deviations above the sample mean on any study variable, resulting in a sample of 93 participants (76% female, mean age = 26.71 years). The majority of participants

Table 4 Study 2 regression predictors and model results using the Kentucky Inventory of Mindfulness Skills (KIMS) total score or subscales, as well as gender and age as predictors

Dependent variable	Significant predictors	<i>R</i> ² change	Final model standardized βs	<i>F</i>
Attitudes to newcomers	Gender	0.05	–0.22	8.64*
Attitudes to homeless	Gender	0.08	–0.26	9.59**
	KIMS observe	0.02	–0.16	
Attitudes to Blacks	Gender	0.05	–0.23	9.71*

p* < 0.01; *p* < 0.001

reported living in North America (90%) and reported being white (73%).

Procedure

The research was approved by the Royal Military College of Canada. After clicking the study title, participants were directed to Survey Monkey where they provided informed consent, then completed the study measures and demographic information, such as gender, country of residence, and education level. Participants were not offered compensation for completing the study.

Measures

The Kentucky Inventory of Mindfulness Skills (KIMS; Baer et al. 2004) was used in Study 3 (see study 2 for a full description). The KIMS and its subscales showed strong internal consistency, Cronbach's $\alpha = 0.87$ (Total), 0.82 (Observe), 0.85 (Describe), 0.79 (Aware), and 0.91 (Accept).

The affective thermometer, as adapted from Asbrock et al. (2010), assesses warm and cold feelings towards several outgroup members classified as dangerous (those who are dangerous to others, such as drug users and violent criminals), dissident (individuals who are potential threats to society, such as protestors and feminists), or derogated (individuals who are derogated by some in society, such as those who are obese or mentally disabled). Participants were asked to rate how warm their feelings are towards each group member on a one (*very cold*) to seven (*very warm*) scale. Higher scores on each scale reflect lower levels of prejudice towards that group. Each subsection showed strong internal consistency, Cronbach's $\alpha = 0.87$ (dangerous), 0.72 (dissident), and 0.81 (derogated).

Data Analyses

SPSS was used for all data processing and analyses. The data were checked for outliers and normality of distribution. All responses were within 3.5 standard deviations of the sample mean, and no variables exceeded acceptable levels of skew or kurtosis. Results of a sample power assessment showed that a minimum of 97 participants was necessary to significantly identify a medium effect size with six predictors (age, gender, and KIMS subscales). Stepwise regressions were run, each with two steps. First, age and gender were entered in order to control for their effects on the dependent variable, followed by KIMS total, or KIMS subscales, in step 2.

Results

Table 5 features correlations, means, standard deviations, and gender differences for all study 3 variables. No significant gender differences were found for any study variables.

To assess the ability of mindfulness to predict prejudice against dangerous, dissident, and derogated groups, separate stepwise regressions were run on each prejudice variable. For each analysis, age and gender were entered into the model first, followed by the KIMS total or the KIMS subscales. Separate analyses were run using KIMS total and the KIMS subscales as predictors to avoid violating multicollinearity. Age and gender did not significantly predict prejudice towards the dangerous, dissident, or derogated groups (see Table 6). KIMS total score did not significantly predict prejudice towards either group, nor did KIMS observe, aware, and accept. KIMS describe did significantly predict prejudice towards the derogated group, such that higher scores on KIMS describe were associated with warmer feelings towards the derogated group.

Discussion

Mindfulness, as measured by the KIMS, is generally not predictive of prejudice towards dissident, derogated, or dangerous outgroup members. Similar to Asbrock et al. (2010), feelings towards derogated and dangerous outgroup members were not significantly correlated, but feelings towards dissident outgroup members were significantly correlated with feelings towards derogated and dangerous outgroup members. This suggests the patterns of correlations found between these three variables were comparable with other samples.

Study 4

Method

Participants

Of the 243 participants registered to complete the study, 97 participants were excluded for quitting the study immediately after indicating consent to proceed with the study, resulting in a sample of 146 participants (55% female, mean age = 25.08 years). The majority of participants reported residing in North America (77%) and self-identified as white (62%).

Procedure

The research was approved by the Research Ethics Board of the Royal Military College of Canada. Participants were recruited from one online research website, Hanover College Psychological Research on the net and from an e-mail request mailed to students at the Royal Military College of Canada. After clicking the study title, participants were directed to Survey Monkey where they provided informed consent, followed by the study measures and demographic questions, such as gender, country of residence, and education level.

Table 5 Correlations between all study 3 variables (the Kentucky Inventory of Mindfulness Skills and attitudes to various outgroups), as well as means, standard deviations, and gender differences

	KIMS total	KIMS observe	KIMS describe	KIMS aware	KIMS accept	Dangerous	Derogated	Dissident	Age
KIMS total	–								
KIMS observe	0.56**	–							
KIMS describe	0.68**	0.31**	–						
KIMS aware	0.67**	0.16	0.30**	–					
KIMS accept	0.60**	–0.08	0.18	0.30**	–				
Dangerous outgroup	0.07	–0.01	0.04	–0.04	0.15	–			
Derogated outgroup	0.14	0.11	0.15	0.03	0.07	–0.15	–		
Dissident outgroup	0.19	0.02	0.26*	0.13	0.10	0.22*	0.50**	–	
Age	0.35**	–0.03	0.35	0.28	0.31**	0.12	–0.08	0.09	–
Mean	3.20	3.57	3.31	2.86	2.96	2.03	4.07	3.81	26.86
SD	0.46	0.64	0.80	0.64	0.94	0.96	0.86	0.87	13.59
<i>t</i> (<i>p</i>)	0.38 (0.70)	0.37 (.71)	0.07 (0.94)	0.04 (0.96)	0.38 (0.70)	1.32 (0.19)	0.24 (0.81)	0.76 (0.45)	1.08 (0.29)

T tests assess differences between men and women

KIMS Kentucky Inventory of Mindfulness Skills

p* < 0.05; *p* < 0.01

Measures

Mindfulness was measured using two independent self-report surveys, the Mindful Attention Awareness Scale (MAAS; Brown and Ryan 2003) and the Cognitive and Affective Mindfulness Scale-Revised (CAMS-R; Feldman et al. 2007) (see study 1 for more information on each scale). The order of delivery for the two mindfulness measures was counterbalanced to prevent biased responses. Both mindfulness measures showed strong inter-item consistency, Cronbach’s alpha = 0.86 (MAAS) and 0.79 (CAMS-R).

The revised Social Dominance Orientation Scale (SDO; Ho et al. 2012) consists of two subscales: egalitarianism and dominance. Scoring high on SDO-egalitarianism (SDO-E) suggests a preference for unequal relations between various

groups in society (i.e., men and women, minorities, and majority group members; sample item: “We should not push for group equality”). Individuals scoring high on SDO-dominance (SDO-D) express a preference that some groups (e.g., men, certain ethnicities) dominate over others (sample item: “It’s probably a good thing that certain groups are at the top and other groups are at the bottom.”). Each facet consists of eight items, and participants are asked to report how much they agree to the statements using a one (*strongly disagree*) to seven (*strongly agree*) Likert scale. A high SDO-D score reflects a strong preference for group dominance, and a high SDO-E score reflects a strong preference for inequality. The SDO total score and each subscale showed strong inter-item consistency, Cronbach’s alpha = 0.92 (total), 0.88 (SDO-E), and 0.83 (SDO-D).

The Right-Wing Authoritarianism scale (RWA; Duckitt et al. 2010) measures the degree to which participants agree with an authoritarian ideology and is comprised of three facets: conservatism (RWA-C; e.g., “What our country needs most is discipline, with everyone following our leaders in unity.”), traditionalism (RWA-T; e.g., “The ‘old-fashioned ways’ and ‘old-fashioned values’ still show the best way to live.”), and authoritarianism (RWA-A; e.g., “The way things are going in this country, it’s going to take a lot of ‘strong medicine’ to straighten out the troublemakers, criminals, and perverts.”). Each facet consists of 6 items, and participants are asked to report how much they agree with each statement using a one (*strongly disagree*) to seven (*strongly agree*) Likert scale. Higher conservatism scores reflect a preference for obeying authority, higher traditionalism scores reflect a

Table 6 Study 3 regression predictors and model results using the Kentucky Inventory of Mindfulness Skills (KIMS) total score or scales, as well as gender and age as predictors

Dependent variable	Significant predictors	R ² change	Final model standardized βs	F
Dangerous	–	–	–	–
Derogated	KIMS describe	0.07	0.27	6.68*
Dissident	–	–	–	–

No predictors were significant for dangerous or dissident outgroup dependent variables

**p* < 0.01

preference for traditional values, and higher authoritarianism scores reflect a tough stance on criminals and a preference for strict implementation of laws. The RWA total score and its subscales showed strong internal consistency, Cronbach's $\alpha = 0.89$ (total), 0.77 (RWA-C), 0.80 (RWA-T), and 0.92 (RWA-A).

Although our hypotheses focus on the total SDO and RWA scores, we wished to conduct some exploratory analyses and examine the correlates of mindfulness measures with the SDO and RWA subscales to determine if correlations hold across the different subscales, as some research has suggested that the subscales operate differentially (e.g., Nicol and De France 2016).

Data Analyses

SPSS was used for all data processing and analyses. The data were checked for outliers and normality of distribution. All responses were within 3.5 standard deviations of the sample mean, and no variables exceeded acceptable levels of skew or kurtosis. Results of a sample power assessment showed that a minimum of 84 participants was necessary to significantly identify a medium effect size with four predictors (age, gender, MAAS, and CAMS-R). Stepwise regressions were run, each with two steps. First, age and gender were entered in order to control for their effects on the dependent variable, followed by the two mindfulness measures in step 2.

Results

Table 7 features correlations, means, standard deviations, and gender differences for all study 4 variables. Significant gender differences were found for all SDO variables, as well as for age; males reported higher SDO scores, whereas women were significantly older than males.

To assess the ability of mindfulness to predict SDO and RWA, as well as their subscales, separate stepwise regressions were run on each. For each analysis, age and gender were entered into the model first, followed by the two mindfulness measures. Results indicated that gender and age significantly predicted SDO, SDO-D, and SDO-E, while only age predicted RWA. In each case, younger age and being male were associated with higher scores. Neither mindfulness variables significantly predicted any of the SDO or RWA variables. Table 8 presents regression results.

Discussion

The results of this study suggest that trait mindfulness, as assessed by the MAAS and the CAMS-R, is not strongly associated with social dominance orientation or right-wing authoritarianism. Gender emerged as a significant predictor of SDO and its facets. This finding is consistent with the

literature, as men tend to score higher on SDO than women (e.g., Ho et al. 2015).

Study 5

Method

Participants

Participants were recruited from two online research websites, Social Psychology Network and Hanover College Psychological Research on the Net. One hundred seventy-two participants registered to complete the study; however, 50 participants were excluded for quitting the study immediately after indicating consent to proceed with the study, resulting in a sample of 122 participants (73.8% female, mean age = 28.51 years). The majority of participants reported residing in North America (84%) and self-identified as white (65%).

Procedure

The study was listed on two online research websites, Social Psychology Network and Hanover College Psychological Research on the Net. Individuals interested in participating in the study were instructed to click on the study title and were then directed to Survey Monkey where they provided informed consent, followed by completion of the study measures and demographic information, such as gender, country of residence, and education level. The research was approved by the Institutional Research Ethics Board of the first author.

Measures

Mindfulness was measured using The Kentucky Inventory of Mindfulness Skills (KIMS; Baer et al. 2004). (See study 2 for a full description.) The KIMS and its subscales showed strong internal consistency, Cronbach's $\alpha = 0.89$ (total), 0.89 (observe), 0.79 (describe), 0.86 (aware), and 0.91 (accept).

Social dominance orientation was measured using the revised Social Dominance Orientation Scale (SDO; Ho et al. 2012) (see study 4 for more information regarding the SDO measure). SDO and its subscales showed strong inter-item consistency, Cronbach's $\alpha = 0.92$ (SDO total), 0.83 (SDO-D), and 0.89 (SDO-E).

Right-wing authoritarianism was measured using the Right-Wing Authoritarianism scale (RWA; Duckitt et al. 2010) (see study 4 for more information regarding the RWA measure). RWA and its subscales showed strong inter-item consistency, Cronbach's $\alpha = 0.91$ (RWA total), 0.84 (RWA-conservatism (RWA-C)), 0.85 (RWA-traditionalism (RWA-T)), and 0.71 (RWA-Authoritarianism; RWA-A).

Table 7 Correlations between all study 4 variables (Mindful Attention Awareness Scale (MAAS), Cognitive and Affective Mindfulness Scale—Revised (CAMS-R), Social Dominance Orientation (SDO), and Right-Wing Authoritarianism (RWA) variables), as well as means, standard deviations, and gender differences

	MAAS	CAMS-R	SDO total	SDO-D	SDO-E	RWA total	RWA-C	RWA-T	RWA-A	Age
MAAS	–									
CAMS-R	–0.49**	–								
SDO total	0.08	–0.09	–							
SDO-D	0.10	–0.07	0.94**	–						
SDO-E	0.06	–0.10	0.95**	0.78**	–					
RWA total	0.01	–0.11	0.47**	0.45**	0.43**	–				
RWA-C	–0.01	–0.08	0.45**	0.45**	0.39**	0.87**	–			
RWA-T	0.04	–0.15	0.37**	0.33**	0.37**	0.84**	0.57**	–		
RWA-A	–0.01	–0.05	0.36**	0.36**	0.32**	0.81**	0.63**	0.48**	–	
Age	–0.18	0.21	–0.22	–0.28	–0.15	–0.17	–0.15	–0.13	–0.16	–
Mean	3.23	2.67	3.00	3.13	2.87	3.49	3.54	3.13	3.79	25.08
SD	0.76	0.46	1.18	1.22	1.27	0.96	1.12	1.28	1.02	10.64
<i>t</i> (<i>p</i>)	–0.58 (0.56)	–0.43 (0.67)	4.40 (<0.001)	3.99 (<0.001)	4.32 (<0.001)	0.85 (0.40)	0.99 (0.32)	1.19 (0.24)	0.17 (0.87)	–2.01 (0.05)

T tests assess differences between men and women

SDO-D Social Dominance Orientation Dominance subscale, *SDO-E* Social Dominance Orientation Egalitarianism subscale, *RWA-C* Right-Wing Authoritarianism Conservatism subscale, *RWA-T* Right-Wing Authoritarianism Traditionalism subscale, *RWA-A* Right-Wing Authoritarianism Authoritarianism subscale

p* < 0.05; *p* < 0.01

Data Analyses

SPSS was used for all data processing and analyses. The data were checked for outliers and normality of distribution. All responses were within 3.5 standard deviations of the sample mean, and no variables exceeded acceptable levels of skew or kurtosis. Results of a sample power assessment showed that a minimum of 97 participants was necessary to significantly identify a medium effect size with six predictors (age, gender, and KIMS subscales). Stepwise regressions were run, each with two steps. First, age and gender were entered in order to control for their effects on the dependent variable, followed by KIMS total, or KIMS subscales, in step 2.

Results

Table 9 features correlations, means, standard deviations, and gender differences for all study 5 variables. No significant gender differences were found for any study variables.

To assess the ability of mindfulness to predict SDO and RWA, as well as their subscales, separate stepwise regressions were run on each. For each analysis, age and gender were entered into the model first, followed by the KIMS total or the KIMS subscales. Separate analyses were run using KIMS total and the KIMS subscales as predictors to avoid violating multicollinearity. Results (see Table 10) indicated that the KIMS subscales differentially predicted the various SDO

and RWA facets. KIMS total predicted RWA, RWA-T, and RWA-A, KIMS observe predicted SDO, SDO-D, and RWA, KIMS describe predicted SDO-E and RWA-T, and KIMS accept predicted RWA and RWA-A. KIMS aware did not significantly predict any SDO or RWA variables.

Discussion

In conclusion, the differing components of the KIMS provided differential predictive ability of SDO and RWA, along with their subscales. Both SDO and RWA measures focus on groups rather than specific outgroup members; therefore, perhaps the KIMS and/or its subscales are related to generalized views of dominance and equality, traditionalism, and authoritarian aggression, but not to attitudes or feelings regarding specific outgroup members. Nevertheless, correlations were low to moderate and the amount of variance explained was low, suggesting it is not a strong predictor. Gender differences for SDO were not found in the current study, nor was gender a significant predictor of SDO. This is possibly due to the low number of male participants.

General Discussion

The findings across the five studies using three measures of mindfulness, the MAAS, the CAMS-R, and the KIMS, and nine different indicators of prejudice suggest little, if any,

Table 8 Study 4 regression predictors and model results using the Mindful Attention Awareness Scale (MAAS) and the Cognitive and Affective Mindfulness Scale—Revised (CAMS-R) scales, as well as gender and age as predictors

Dependent variable	Significant predictors	R ² change	Final model standardized βs	F
SDO	Gender	0.14	−0.34	13.75**
	Age	0.03	−0.17	
SDO-D	Gender	0.12	−0.31	14.15**
	Age	0.05	−0.23	
SDO-E	Gender	0.12	−0.35	19.72**
RWA	Age	0.03	−0.17	4.37*
RWA-C	—	—	—	—
RWA-T	—	—	—	—
RWA-A	—	—	—	—

SDO Social Dominance Orientation total score, *SDO-D* Social Dominance Orientation Dominance subscale, *SDO-E* Social Dominance Orientation Egalitarianism subscale, *RWA* Right-Wing Authoritarianism total score, *RWA-C* Right-Wing Authoritarianism Conservatism subscale, *RWA-T* Right-Wing Authoritarianism Traditionalism subscale, *RWA-A* Right-Wing Authoritarianism Authoritarianism subscale

* $p < 0.05$; ** $p < 0.001$

relation between trait mindfulness and prejudice. Although some significant relations were found between KIMS, SDO, and RWA, the overall findings across the five studies suggest a lack of relation between trait mindfulness and prejudice. This would seem to mirror previous findings suggesting a weak relation of trait mindfulness with empathy (Birnie et al. 2010) and the Big Five personality dimension of Openness (Baer et al. 2004; Niemiec et al. 2010), as both empathy and openness have been found to be significant predictors of prejudice (e.g., Bäckström and Björklund 2007; Heaven et al. 2006).

The lack of association between KIMS and attitudes to certain outgroups as well as the affective thermometer ratings coupled with a significant relation between KIMS and SDO and RWA requires further explanation. We had hypothesized that higher KIMS scores would be related to more positive attitudes to and warmer feelings to outgroups and that those scoring high on KIMS and its subscales would have lower scores on SDO and RWA, as both of these social worldview measures have been shown to predict negative attitudes to a variety of outgroups (Sibley and Duckitt 2008). Instead, while we found KIMS did not predict attitudes or warm feelings to outgroups, we also found that KIMS did significantly predict SDO and RWA. We believe this may be explained through their common relation with other constructs. For instance, empathy has been found to be negatively related with SDO (McFarland 2010; Nicol and Rounding 2013) as well as with the KIMS and its subscales (Dekeyser et al. 2008). Therefore, perhaps the relation between the KIMS, SDO, and RWA can

be explained by their shared variance with another construct common to both, but that shared variance may not overlap with prejudice. Alternatively, perhaps our findings were spurious, as the correlations were low and the KIMS and its subscales accounted for very little unique variance in the prediction of SDO, RWA, and their subscales.

The lack of association between trait mindfulness and prejudice may be explained by Borders et al. (2010), who remind us that mindfulness may influence a person's relationship with his/her thoughts but that it does not, necessarily, change the content of those thoughts. Mindfulness, as defined by many (e.g., Baer et al. 2004; Feldman et al. 2007; Nilsson and Kazemi 2016) and as operationalized in the measures included in this study, focuses on awareness of self and acceptance of the self (i.e., being non-judgmental of the self). This is irrespective of whether one has positive or negative thoughts about the self or others. Yusainy and Lawrence (2014) wrote that mindfulness brings an individual's attention back to the present and encourages non-judgmental attitudes. This suggests two components of mindfulness, a non-judgmental component and an attentional focus on the present, but these also indirectly imply non-action towards the thoughts an individual is experiencing. Definitions of mindfulness, according to Nilsson and Kazemi (2016) do not contain an ethical component which consists of the application of mindfulness to social good. Certainly, the trait measures of mindfulness employed here do not contain this ethical component.

Why would trait mindfulness not predict prejudiced attitudes to specific outgroup members; yet, mindfulness-based programs have demonstrated some success in lowering prejudiced attitudes (e.g., Lueke and Gibson 2015; Tincher et al. 2016)? The three measures of trait mindfulness included here, the MAAS, the CAMS-R, and the KIMS, focus primarily on the self, the ability of the person to be aware of their own feelings and actions, as well as being non-judgmental of themselves. Having an open and non-judgmental regard for the self does not necessarily imply having an open and non-judgmental regard towards others. However, certain meditation practices expand this acceptance to others. For instance, the practice of loving-kindness meditation includes practicing feeling love and compassion for oneself and then for others (Fredrickson et al. 2008), which has been associated with a reduction in explicit and implicit prejudiced attitudes (e.g., Hunsinger et al. 2014; Kang et al. 2014, 2015). Certainly, this type of meditation, which is intended to activate positive thoughts towards others, may facilitate automatic positive categorization. This may explain why implicit attitudes became favorable after 6 weeks of exposure to loving-kindness meditation practice (Kang et al. 2014). However, in that same study explicit attitudes remained unchanged after this short period of time. Longer practice may be required to create changes in the complex socio-cognitive processes involved in the expression of explicit attitudes, as seen in the

Table 9 Correlations between all study 5 variables (the Kentucky Inventory of Mindfulness Skills (KIMS), Social Dominance Orientation (SDO), and Right-Wing Authoritarianism (RWA) variables), as well as means, standard deviations, and gender differences

	KIMS total	KIMS observe	KIMS describe	KIMS aware	KIMS accept	SDO total	SDO-D	SDO-E	RWA total	RWA-C	RWA-T	RWA-A	Age
KIMS total	—												
KIMS observe	0.58**	—											
KIMS describe	0.79**	0.43**	—										
KIMS aware	0.59**	-0.01	0.30**	—									
KIMS accept	.65**	0.00	0.32**	0.35**	—								
SDO total	-0.14	-0.21*	-0.19*	-0.06	-0.01	—							
SDO-D	-0.17	-0.23*	-0.17	0.07	0.92**	0.73**	—						
SDO-E	-0.10	-0.17	-0.20*	0.09	0.53**	0.94**	0.44**	—					
RWA total	-0.26**	-0.16	-0.23*	0.01	-0.26**	0.55**	0.40**	0.89**	—				
RWA-C	-0.15	-0.07	-0.16	0.04	-0.18	0.45**	0.41**	0.87**	0.66**	—			
RWA-T	-0.25**	-0.22*	-0.24**	0.07	-0.22*	0.50**	0.52**	0.81**	0.64**	0.52**	—		
RWA-A	-0.28**	-0.11	-0.20*	-0.11	-0.29**	0.43**	0.30**	0.81**	0.64**	0.13	-0.01	-0.06	
Age	0.30**	-0.05	0.24**	-0.11	0.35**	0.03	-0.08	0.13	0.39	3.39	3.17	28.51	
Mean	3.24	3.54	3.49	2.98	2.90	2.72	2.72	2.50	3.41	3.67	3.39	1.40	12.7
SD	0.51	0.68	0.95	0.65	0.91	1.15	1.15	1.27	1.05	1.06	1.18	0.71	0.68
t (p)	-0.43 (0.67)	-0.29 (0.77)	-0.22 (0.82)	0.08 (0.94)	-0.61 (0.54)	1.37 (0.17)	1.14 (0.26)	1.38 (0.17)	0.24 (0.81)	-0.97 (0.33)	0.64 (0.52)	0.71 (0.48)	0.68 (0.50)

T tests assess differences between men and women

SDO-D Social Dominance Orientation Dominance subscale, SDO-E Social Dominance Orientation Egalitarianism subscale, RWA Right-Wing Authoritarianism total score, RWA-C Right-Wing Authoritarianism Conservatism subscale, RWA-T Right-Wing Authoritarianism Traditionalism subscale, RWA-A Right-Wing Authoritarianism Authoritarianism subscale

*p < 0.05; **p < 0.01

Table 10 Study 5 regression predictors and model results using the Kentucky Inventory of Mindfulness Skills (KIMS) total score or subscales, as well as gender and age as predictors

Dependent variable	Significant predictors	R ² change	Final model standardized βs	F
SDO	KIMS observe	0.04	-0.21	5.31*
SDO-D	KIMS observe	0.06	-0.23	6.77*
SDO-E	KIMS describe	0.04	-0.19	4.39*
RWA	KIMS total	0.08	-0.28	9.70*
	KIMS accept	0.07	-0.26	6.55*
	KIMS observe	0.03	-0.18	
RWA-C	—	—	—	—
RWA-T	KIMS total	0.07	-0.26	8.52*
	KIMS describe	0.06	-0.25	7.63*
RWA-A	KIMS total	0.09	-0.29	10.82**
	KIMS accept	0.08	-0.29	10.64**

T tests assess differences between men and women

KIMS Kentucky Inventory of Mindfulness Skills, SDO Social Dominance Orientation total score, SDO-D Social Dominance Orientation Dominance subscale, SDO-E Social Dominance Orientation Egalitarianism subscale, RWA Right-Wing Authoritarianism total score, RWA-C Right-Wing Authoritarianism Conservatism subscale, RWA-T Right-Wing Authoritarianism Traditionalism subscale, RWA-A Right-Wing Authoritarianism Authoritarianism subscale

*p < 0.05; **p < 0.001

Hunsinger et al. (2014) study; individuals who practiced for 6 months or longer demonstrated more favorable explicit attitudes. Therefore, trait meditation self-measures and certain meditation practices may be tapping different psychological processes or constructs.

Finally, although prejudice is partly based on perceived threat to the in-group or to the status quo by members of the outgroup, the mindfulness’ relation with anxiety (e.g., mindfulness-based programs found reductions in feelings of anxiety; Khoury et al. 2015) may not be sufficient to reduce negative attitudes to outgroups. The literature on prejudice has focused on intergroup anxiety, a specific type of anxiety related to prejudice (e.g., Pettigrew and Tropp 2006). Therefore, the mindfulness’ relation with anxiety, and its generalized form, may not be sufficient or specific enough to reduce negative attitudes towards outgroup members.

Limitations and Future Research

Certainly, there are limitations to the research conducted here. Although participants were obtained from a variety of different locations and reflect different age groups, they all accessed the study materials via the Internet, thus limiting the generalizability of the results because of common method variance. However, we do not expect common method variance to be a problem given the low correlations. Regardless, assessing trait

mindfulness and/or prejudice using instruments other than self-reports may garner different results; for instance, employing ecological momentary assessment procedures for mindfulness or peer/close friend ratings of prejudice may provide different results. Other measures of mindfulness, such as the Freiburg Mindfulness Inventory (Walach et al. 2006), were not included, and though we expect findings to be comparable given the similar item structure and focus on the self, we did not test that here. Research including other trait mindfulness measures with different item content would confirm the findings beyond the instruments included in our studies.

The definitions of mindfulness by Baer et al. (2004), Feldman et al. (2007), and Nilsson and Kazemi (2016) presented in the introduction do not appear to limit the concept of mindfulness to the self, whether it is regulation of attention, awareness of experiences, being non-judgmental about experiences; yet, many operationalizations of mindfulness seem to limit the focus of experiences to the self. We suggest future operationalizations of mindfulness include assessment of the extent to which an individual is non-judgmental about others.

In conclusion, there was little to no relation between mindfulness, as measured with the MAAS, CAMS-R, and KIMs, and attitudes to outgroup members, feelings regarding outgroup members, SDO, or RWA. This does not negate research which has shown mindfulness or meditation programs that have been successful in reducing prejudice, but we suggest the mindfulness state created in those studies, with the intent to reduce prejudice, do not assess similar cognitive and affective processes important in prejudice reduction as do trait mindfulness measures. More research exploring the nature of trait mindfulness, and whether its construct should broaden beyond acceptance and awareness of the self, need to be considered.

Author Contributions AAMN: designed and executed the study, wrote the Introduction and General Discussion, and edited the Method, Results, and Discussion for each study. KDF: put the studies on Survey Monkey; analyzed the data; wrote the Method, Results, and Discussion for each study; and collaborated in editing the final manuscript.

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Compliance with Ethical Standards

Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the Royal Military College's Research Ethics Board and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent Informed consent was obtained from all individual participants included in the study.

Conflict of Interest Dr. Nicol has received research grants from the Department of National Defence Canadian Defence Academy Research Program (2015–2017). Kallee De France declares that she has no conflict of interest.

The views, opinions, and/or findings contained in this article are solely those of the authors and should not be construed as official Department of National Defence policy, position, or decision.

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