Abstract

Non-suicidal self-injury (NSSI) is a significant mental health concern on university campuses. It has been proposed that dispositional mindfulness, which may be fostered through mindfulness practice, may have important benefits for university students with a history of NSSI through its positive impact on coping self-efficacy. However, students' receptivity to mindfulness practice may be an important precursor to their ability to incur the benefits of dispositional mindfulness. This study sought to explore the interrelations between NSSI history, mindfulness receptivity, dispositional mindfulness, and coping self-efficacy among a sample of 246 university students (M_{age} = 21.53 years). Mindfulness receptivity was found to be positively predictive of coping self-efficacy; dispositional mindfulness fully mediated this relationship for participants with a history of NSSI, but did not mediate this relationship for those without such a history. Findings provide preliminary evidence for the importance of mindfulness receptivity in fostering dispositional mindfulness and coping self-efficacy in university students.

Keywords: mindfulness receptivity, nonsuicidal self-injury, university students, dispositional mindfulness, coping self-efficacy

Mindfulness Receptivity, Dispositional Mindfulness, and Coping Self-Efficacy in University Students With and Without a History of Self-Injury

Non-suicidal self-injury (NSSI), defined as the self-inflicted and deliberate destruction of bodily tissue in the absence of lethal intent (American Psychiatric Association, 2013), is a significant mental health concern on university campuses (Wester et al., 2018). Although the onset of NSSI typically takes place during adolescence, NSSI is particularly prevalent among university students as well, with up to 23% reporting NSSI engagement during their university years and 6-8% reporting engagement within the past 12 months (Muehlenkamp et al., 2018; Swannell et al., 2014; Wester et al., 2018; Whitlock et al., 2011). Among university students, engaging in NSSI is associated with comorbid mental health difficulties, more frequent reports of engaging in other unhealthy coping behaviours, and a sevenfold increase in the likelihood of attempting suicide (Guan et al., 2012; Kiekens et al., 2018; Ribeiro et al., 2016; Serras et al., 2010).

The use of mindfulness, defined as the purposeful awareness and nonjudgmental acceptance of present moment experiences (Kabat-Zinn, 2003), has been a core component of many interventions for NSSI (e.g., Krantz et al., 2018; Linehan et al., 2006; Rees et al., 2015). Furthermore, dispositional mindfulness, which refers to an individual's general tendency to experience mindfulness day-to-day (Brown & Ryan, 2003), may be fostered over time through repeated increases in state mindfulness as brought about by mindfulness practice (Kabat-Zinn, 2003; Kiken et al., 2015; Treadway & Lazar, 2010). Dispositional mindfulness has demonstrated protective benefits for NSSI in university students through its positive impact on coping self-efficacy (Heath, Joly, & Carsley, 2016), which may be defined as one's perceived self-efficacy for coping with challenges (Chesney et al., 2006). However, a student's willingness to engage in

mindfulness practice, and thus incur the benefits of dispositional mindfulness, may ultimately be determined by their openness or receptivity to the practice of mindfulness. The present study thus sought to explore the relations between NSSI, mindfulness receptivity, dispositional mindfulness, and coping self-efficacy in a sample of university students.

Indeed, there is a growing body of research on the benefits of dispositional mindfulness and mindfulness practice in higher education (see reviews by Dawson et al., 2020; Halladay et al., 2019). In one study with undergraduate students, dispositional mindfulness was found to be negatively associated with negative thought frequency, and positively associated with the ability to let go of unpleasant and distressing thoughts (Frewen et al., 2008). These findings may be particularly relevant to university students who self-injure, given that distressing thoughts and emotions are often precursors to NSSI engagement (Taylor et al., 2018). In addition, efforts have been made to encourage mindfulness practice among university students with the implementation of mindfulness-based interventions on campuses. This approach has demonstrated effectiveness at increasing students' dispositional mindfulness over time, as well as decreasing their stress and anxiety (Bamber & Schneider, 2016; Halladay et al., 2019).

In addition to being a proposed protective factor for NSSI engagement (e.g., Heath, Joly, & Carsley, 2016; Per et al., 2021), dispositional mindfulness is also associated with coping self-efficacy in university students (Bennett, 2017; Heath, Joly, & Carsley, 2016; Luberto et al., 2014). According to self-efficacy theory, coping self-efficacy is an important prerequisite to coping behaviour change (Bandura, 1997) and fostering coping self-efficacy may therefore be particularly pertinent for decreasing engagement in NSSI among university students. This possibility is tentatively supported by research by Bennett (2017), which found low coping self-efficacy to be a significant predictor of NSSI among university students. Similarly, Heath, Joly,

and Carsley (2016) found that coping self-efficacy fully mediated the relationship between dispositional mindfulness and NSSI engagement among a sample of university students.

Thus, cross-sectional research has found dispositional mindfulness to be a significant predictor of coping self-efficacy and has demonstrated that dispositional mindfulness may be fostered through repeated mindfulness practice (Kiken et al., 2015). However, very little research has specifically examined individuals' receptivity to mindfulness, which may be an important precursor to engaging in mindfulness practice. For the present study, we conceptualize mindfulness receptivity as an open and receptive attitude towards a) engaging in mindfulness practice, and b) experiencing the potential benefits that mindfulness practice may bring about. Although mindfulness receptivity as a construct has seldom been explored, previous studies have highlighted facilitators and barriers to mindfulness practice adherence, and themes that are closely related to mindfulness receptivity have emerged from this research (Bamber & Schneider, 2020; Banerjee et al., 2017). For instance, through semi-structured interviews following a mindfulness intervention, Banerjee et al. (2017) found that participants' attitudes towards engagement in mindfulness practice, as well as the perceived consequences of the intervention on participants' mental health and well-being, were closely linked to intervention adherence. As such, we propose that mindfulness receptivity may be an important precursor to developing dispositional mindfulness, due to the potential impact of mindfulness receptivity on mindfulness practice uptake and adherence. If this is found to be the case, then it is also plausible that mindfulness receptivity may be a predictor of university students' coping self-efficacy, particularly through its impact on dispositional mindfulness.

To our knowledge, only one study (i.e., Barrasso-Catanzaro, 2015) has specifically explored university students' receptivity to mindfulness practice in relation to their levels of

dispositional mindfulness. Results from this 2015 study revealed that dispositional mindful awareness, the 'present-moment awareness' subscale of a measure of dispositional mindfulness (Cardaciotto et al., 2008), was positively associated with mindfulness receptivity. In addition, psychological distress was positively associated with receptivity, although this relationship was moderated by dispositional mindful awareness, whereby students experiencing high levels of psychological distress along with higher levels of awareness endorsed a greater degree of mindfulness practice receptivity. These findings were expected in light of research that has suggested those suffering from pain or psychological distress may be more attracted to the practice of mindfulness (Kabat-Zinn, 2005; Pistorello et al., 2013) and provided preliminary evidence that, whether independently or as a moderator, dispositional mindful awareness may be positively related to mindfulness receptivity.

In summary, the prevalence of NSSI on university campuses has been of growing interest (Wester et al., 2018). Targeting the improvement of dispositional mindfulness through mindfulness practice may have important benefits for university students with a history of NSSI, through the positive effect of dispositional mindfulness on coping self-efficacy (Bennett, 2017; Heath, Joly, & Carsley, 2016; Luberto et al., 2014; Midkiff et al., 2018). However, students with a history of self-injury consistently report low levels of dispositional mindfulness (e.g., Heath, Carsley, et al., 2016; Per et al., 2021). It is possible that these relatively low levels of dispositional mindfulness are the result of a lower receptivity to mindfulness practice, such that students who stand to benefit from mindfulness practice the most- that is, those with a history of NSSI who report low dispositional mindfulness to begin with- may also be those who are least inclined to engage in it. An investigation of mindfulness receptivity among university students with versus without a history of self-injury, and whether mindfulness receptivity may function

differently among students with a history of NSSI in terms of impacting their coping self-efficacy through their levels of dispositional mindfulness, is therefore warranted.

The first objective of this study was to examine the associations between mindfulness receptivity, dispositional mindfulness, and coping self-efficacy among university students with and without a history of NSSI. It was hypothesized that mindfulness receptivity, dispositional mindfulness, and coping self-efficacy would all be significantly positively correlated with one another for students with a history of NSSI (H1a) as well as those without such a history (H1b). The second objective was to explore group differences in mindfulness receptivity, dispositional mindfulness, and coping self-efficacy between participants with a history of self-injury and participants without such a history. Based on previous literature (e.g., DeLong, 2017; Shaw & Edelmann, 2019), it was hypothesized that participants with a history of NSSI would report significantly lower mindfulness receptivity (H2a), lower dispositional mindfulness (H2b), and lower coping self-efficacy (H2c) than participants without a history of NSSI. Lastly, the third objective was to assess the potential indirect effect of mindfulness receptivity on coping self-efficacy through dispositional mindfulness, among participants with a history of NSSI, as well as among participants without such a history. It was hypothesized that dispositional mindfulness would mediate the relationship between mindfulness receptivity and coping self-efficacy for participants with a history of NSSI (H3a) as well as for those without such a history (H3b).

Methods

Procedure

Participants were a sample of university students recruited from a large urban English university in Canada. Recruitment methods included: 1) widespread general recruitment, and 2) recruitment targeting students with “lived experience of NSSI.” Interested students were sent a

personal link to a confidential online survey hosted on Qualtrics. Participants were offered entry into a raffle for a one in seven chance of winning $30 as compensation for their participation. This study was approved by the university's institutional ethics review board.

Participants

A total of 289 responses were collected; however, participants were excluded if they reported ages that were three standard deviations above the mean (i.e., they reported being 30 years of age or older) (n = 15), completed less than 50% of the survey (n = 9), had missing values on any of the measures of interest (n = 18), or if their data contained a multivariate outlier (n = 1). The final sample thus consisted of 246 university students, of which 114 (46.3%) reported a history of NSSI (M_{age} = 21.15 years, SD = 2.24 years) and 132 (53.7%) reported no history of NSSI (M_{age} = 21.86 years, SD = 2.78 years). Of those with a history of NSSI, 78.1% self-identified as female, 8.8% as male, 12.3% as non-binary, and 0.9% as transgender. Of those without a history of NSSI, 85.6% self-identified as female, 12.9% as male, 0.8% as non-binary, and 0.8% as transgender. The elevated proportion of participants with a reported history of NSSI in the present study, relative to NSSI prevalence rates generally found on university campuses (e.g., Cipriano et al., 2017), was likely attributed to the targeted recruitment flyer specifically soliciting participation from students with lived experience of NSSI.

Measures

History of NSSI Engagement. To assess whether participants had a lifetime history of engagement in NSSI, a single-item screening question was included in the online survey immediately following the demographics section which asked: "Have you ever engaged in self-injury without wanting to die (e.g., self-cutting, self-hitting, burning, bruising, scratching, etc.)?" Response options included "Yes" and "No."

Mindfulness Receptivity. A four-item, researcher-developed self-report questionnaire was used to measure participants' receptivity towards mindfulness practice. A CFA was conducted in Mplus version 8 (Muthén & Muthén, 2017) to confirm the proposed single-factor structure of the mindfulness receptivity measure. Results revealed a good fit of the data to the proposed one-factor model of mindfulness receptivity ($\chi^2(8) = 15.12$, $p = .06$; RMSEA = 0.06; CFI = 0.97; TLI = 0.94; SRMR = 0.04). Although the model fit was good, two items revealed low loadings onto the higher-order factor (i.e., < .40; Wang & Wang, 2019; see Supplemental File 1 for all item loadings). Conceptually, these two items also appeared to differ from the others in that they assessed *ability to meditate* rather than *attitude towards meditation*. As such, these two items were omitted from the measure, resulting in a four-item (rather than six-item) unidimensional measure of mindfulness receptivity. Items are rated on a 7-point Likert scale (1 = *strongly agree* to 7 = *strongly disagree*) based on the extent to which respondents agree with the statements. Items include, "I feel open to the idea of meditating," "I would be willing to try practicing mindfulness on a regular basis," and, "I feel receptive to the benefits that meditation may bring about," as well as one reverse-scored item: "I am suspicious regarding the use of mindfulness." A higher sum score indicates greater receptivity towards mindfulness practice; sum scores may range from 4 to 28. This measure had fair internal consistency in this study, with a Cronbach's alpha of .68 (Ponterotto & Ruckdeschel, 2007).

Dispositional Mindfulness. The *Five Facets of Mindfulness Questionnaire – Short Form* (FFMQ-SF; Baer et al., 2006; Bohlmeijer et al., 2011) was used to measure dispositional mindfulness. This 24-item self-report questionnaire is a measure of one's general tendency to be mindful and consists of five subscales, each assessing a specific facet of mindfulness: observing (4 items), describing (5 items), acting with awareness (5 items), non-judgmental acceptance (5

items), and non-reactivity (5 items). Respondents are asked to rate each item on a 5-point Likert scale (1 = *never or very rarely true* to 5 = *very often or always true*) based on the extent to which the statements describe their own opinion of what is generally true for them. Items include, "I'm good at finding words to describe my feelings," and, "I watch my feelings without getting carried away by them." A higher sum score on the FFMQ indicates greater dispositional mindfulness; sum scores may range from 24 to 120. In the present study, the FFMQ had good internal consistency with a Cronbach's alpha of .84 (Ponterotto & Ruckdeschel, 2007).

Coping Self-Efficacy. The *Coping Self-Efficacy Scale* (CSES; Chesney et al., 2006) was used to measure coping self-efficacy (i.e., one's confidence in their ability to engage in effective coping behaviors when faced with challenges). This measure is composed of 26 items that each represent a different coping behavior (e.g., "talk positively to yourself," "get emotional support from friends and family") rated on an 11-point Likert scale (1 = *cannot do at all* to 11 = *certain can do*) based on the extent to which participants feel that they can engage in each behavior when things are not going well for them. The CSES may be interpreted unidimensionally or in terms of its three subscales. For the purposes of this study, the CSES sum score (i.e., unidimensional interpretation) was used based on evidence of overall coping self-efficacy being meaningfully related to university adjustment, emotion regulation difficulties, and dispositional mindfulness among university students with and without a history of NSSI (Heath Joly, & Carsley, 2016; Joly et al., 2022; Midkiff et al., 2018). A higher sum score on the CSES indicates greater coping self-efficacy; sum scores may range from 26 to 286. In the present study, the CSES had excellent internal consistency, with a Cronbach's alpha of .95 (Ponterotto & Ruckdeschel, 2007).

Data Analysis

A confirmatory factor analysis (CFA) was conducted to confirm the proposed single-factor structure of the mindfulness receptivity measure. Several goodness of fit indices were used including the χ^2/df ratio (≤5), the root mean square error of approximation (RMSEA; ≤ .06), comparative fit index (CFI; ≥ .90), Tucker-Lewis Index (TLI; ≥ .90), and standardized root mean squared residual (SRMR; ≤ .08) (Meyers et al., 2017, p. 517; West et al., 2012).

To test the first objective, bivariate correlations were conducted. To test the second objective, three one-way ANOVAs were conducted. Finally, to test the third objective, two mediation analyses were conducted using Hayes and Preacher's (2014) procedure. The decision to conduct separate mediation analyses was taken based on the premise that mindfulness receptivity may function differently in students with and without a history of NSSI in terms of impacting coping self-efficacy through levels of dispositional mindfulness.

Results

Data Cleaning

Data were cleaned using SPSS version 27. Participants who reported being 30 years old or older were omitted from data analysis (n = 15), as were participants who completed less than 50% of the survey (n = 9). The sample was then split by group (NSSI/no-NSSI) and data cleaning was conducted separately within each group. The assumption of normality was met for all variables across both groups. Furthermore, less than 5% of the data were found to be missing within each variable; it was therefore assumed that omitted values were missing completely at random. Nevertheless, participants who had missing values on any of the measures included in the present analyses were omitted from data analysis (n = 18); this approach was taken rather than the imputation of missing values in the interest of being maximally conservative and unbiased (Kang, 2013), and given the adequate sample size for the proposed analyses even after

omissions. Two univariate outliers within the NSSI group were identified and recoded using the Winsorization method. One multivariate outlier was detected within the NSSI group as well, and that participant's data were deleted (n = 1). A final sample of 114 university students with a history of NSSI (M_{age} = 21.15 years, SD = 2.24 years; 78.1% female) and 132 university students with no such history (M_{age} = 21.86 years, SD = 2.78 years; 85.6% female) was analyzed.

Main Analyses

The main analyses were conducted in SPSS version 27. To assess the first objective, which was to examine the associations between mindfulness receptivity, dispositional mindfulness, and coping self-efficacy among university students with and without a history of NSSI, bivariate correlations were conducted (see correlation matrix for participants with and without a history of NSSI in Table 1). As hypothesized, mindfulness receptivity, dispositional mindfulness, and coping self-efficacy were all positively associated with one another among participants with a history of self-injury (H1a), as well as among participants without such a history (H1b), with one exception. Among participants with a history of NSSI, mindfulness receptivity and coping self-efficacy were not significantly associated with one another.

To assess the second objective, which was to investigate group differences in mindfulness receptivity, dispositional mindfulness, and coping self-efficacy between participants with a history of NSSI compared to those without such a history, three one-way ANOVAs were conducted. First, assumptions for one-way ANOVAs were examined; all underlying assumptions were met. Specifically, there was independence of observations between our two participant groups (NSSI/no NSSI), there were no outliers on any outcomes within either group, and the assumptions of normality and homogeneity of variance were met for each outcome within each group. The means and standard deviations for all variables are presented in Table 2 for

participants with and without a history of NSSI. Results revealed no significant group difference in mindfulness receptivity between participants with a history of NSSI and those without such a history, $F(1, 244) = .073$, $p = .788$, $\eta^2 = .000$. However, significant group differences in dispositional mindfulness ($F(1, 244) = 12.762$, $p < .001$, $\eta^2 = .050$) and coping self-efficacy ($F(1, 244) = 34.539$, $p < .001$, $\eta^2 = .124$) emerged, whereby students with a history of NSSI reported lower levels of both, relative to students without such a history.

The third objective was to assess the indirect effect of mindfulness receptivity on coping self-efficacy through dispositional mindfulness, among participants with and without a history of self-injury; as such, two mediation analyses were conducted using the bootstrapping technique through the PROCESS macro for SPSS (Hayes, 2017; Hayes & Preacher, 2014). As displayed in Figure 1, the indirect effect of mindfulness receptivity on coping self-efficacy was significant for those with a history of NSSI (path *ab* = .134, *SE* = 0.060, 95% CI [0.017, 0.254]), indicating that dispositional mindfulness mediated the relationship between mindfulness receptivity and coping self-efficacy among these students. The direct effect of mindfulness receptivity on coping self-efficacy was not significant when accounting for dispositional mindfulness (path *c'* = .020, *SE* = 0.745, 95% CI [-1.286, 1.665]), suggesting the presence of a full mediation. There were significant positive effects of mindfulness receptivity on dispositional mindfulness (path *a* = .219, *SE* = 0.266, 95% CI [0.106, 1.161]) and of dispositional mindfulness on coping self-efficacy (path *b* = .611, *SE* = 0.258, 95% CI [1.542, 2.564]).

A second mediation analysis for participants without a history of NSSI was run subsequently. As displayed in Figure 2, the indirect effect of mindfulness receptivity on coping self-efficacy was not significant (path *ab* = .085, *SE* = 0.044, 95% CI [-0.001, 0.171]), indicating that dispositional mindfulness did not mediate the relationship between mindfulness receptivity

and coping self-efficacy among those without a history of NSSI. However, there was a significant direct effect of mindfulness receptivity on coping self-efficacy (path *c*' = .223, *SE* = 0.707, 95% CI [0.680, 3.476]). There were also significant positive effects of mindfulness receptivity on dispositional mindfulness (path *a* = .192, *SE* = 0.202, 95% CI [0.050, 0.848]) and of dispositional mindfulness on coping self-efficacy (path *b* = .445, *SE* = 0.302, 95% CI [1.173, 2.367]).

Discussion

Associations Between Mindfulness Receptivity, Dispositional Mindfulness, and Coping Self-Efficacy

With regards to the study's first objective, dispositional mindfulness and coping self-efficacy were found to be positively associated with one another, both for individuals with and without a history of NSSI. This finding is in line with our hypotheses (H1a-b) and with previous research that has highlighted the importance of dispositional mindfulness to one's confidence in their ability to cope with life challenges (e.g., Heath, Joly, & Carsley, 2016; Luberto et al., 2014). Interestingly, significant positive associations emerged between mindfulness receptivity and dispositional mindfulness for all participants (H1a-b), but a significant positive association between mindfulness receptivity and coping self-efficacy only emerged for participants without a history of NSSI (H1b); these two variables were not significantly associated with one another among those with a history of self-injury. In general, these findings suggest that mindfulness receptivity may be an important variable to consider in relation to indices of wellness among university students with and without a history of NSSI, although it may not be directly related to coping self-efficacy among those with a history of engaging in self-injury.

Group Differences in Mindfulness Receptivity, Dispositional Mindfulness, and Coping Self-Efficacy

As hypothesized, group differences in dispositional mindfulness and coping self-efficacy emerged, whereby participants with a reported history of NSSI reported lower dispositional mindfulness (H2b) and lower coping self-efficacy (H2c) than participants without a reported history of NSSI. These results substantiate the results of several studies that have found university students with a history of NSSI consistently report lower levels of dispositional mindfulness than those without such a history (e.g., Caltabiano & Martin, 2017; Garisch & Wilson, 2015; Heath, Carsley, et al., 2016; Heath, Joly, & Carsley, 2016; Per et al., 2021). Similarly, the present findings are in line with research that has documented comparably low levels of coping self-efficacy among university students with a history of self-injury relative to those without such a history (Bennett, 2017; Heath, Joly, & Carsley, 2016; Midkiff et al., 2018) as well as with adolescents (Nock & Mendes, 2008). In light of evidence that has shown both dispositional mindfulness and coping self-efficacy are positive predictors of academic, social, emotional, institutional, and global adjustment to university among students with and without a history of NSSI (Joly et al., 2022; Mettler et al., 2017), the present findings provide additional evidence that university students with a history of NSSI may experience unique challenges as a result of their relatively low levels of dispositional mindfulness and coping self-efficacy. Thus, specifically targeting these two outcomes in clinical interventions, as well as in the general provision of mental health resources on university campuses, is recommended.

Surprisingly, counter to our hypothesis (H2a), no significant group difference in mindfulness receptivity emerged between participants with and without a history of NSSI. It was suspected that low receptivity to mindfulness practice may have been responsible for the

comparably low levels of dispositional mindfulness that are generally reported among university students with a history of NSSI relative to students without such a history (e.g., Caltabiano & Martin, 2017; Garisch & Wilson, 2015; Per et al., 2021). Moreover, the previously documented positive relationship between dispositional mindful awareness and mindfulness receptivity in university students provided early support for this contention (Barrasso-Catanzaro, 2015). However, in the present study, moderate levels of mindfulness receptivity were reported both by students with a history of NSSI and those who had never self-injured. The present results therefore refute our initial assumption and suggest that although university students with a history of NSSI report lower levels of dispositional mindfulness, they appear to be no less receptive to mindfulness practice than those without such a history.

This finding may, at least in part, be attributed to the relative prior exposure of students with a history of NSSI versus without a history of NSSI to mindfulness practice. As noted earlier, mindfulness is a core component of many interventions for NSSI (e.g., Krantz et al., 2018; Linehan et al., 2006; Rees et al., 2015). Even in instances where individuals do not seek out treatment for their NSSI, many do seek out online support and resources (Duggan et al., 2012; Lewis & Seko, 2016), and mindfulness is often recommended as a strategy to support NSSI recovery within professional online resources (e.g., Burgess, 2019; Kilburn & Whitlock, 2009; Self-Injury Outreach & Support, n.d.; Self-Injury Support, 2018). Therefore, we suggest that university students with a history of NSSI are more likely to have been exposed to the idea of practicing mindfulness relative to those without a history of NSSI. If this is true, the relatively greater prior exposure of participants with a history of NSSI to mindfulness may be what is driving their moderate levels of receptivity to mindfulness in the present study. On the other hand, among those without a history of NSSI, their receptivity to mindfulness may be the result

of a more generalized openness or receptivity to coping strategies in general. This interpretation of the different explanatory sources for the comparable mindfulness receptivity in the two groups is further supported by the differences in the mediation models as discussed below.

Mediating Role of Dispositional Mindfulness Among Students with a History of NSSI

As hypothesized (H3a), among students with a history of self-injury, the relationship between mindfulness receptivity and coping self-efficacy was fully mediated by dispositional mindfulness, whereby greater mindfulness receptivity predicted greater coping self-efficacy through greater dispositional mindfulness. Indeed, the role of dispositional mindfulness in predicting coping self-efficacy among university students with and without a history of NSSI has been previously documented. For example, Luberto et al. (2014) examined the role of coping self-efficacy in the relationship between four facets of dispositional mindfulness (e.g., observing, describing, acting with awareness, and accepting without judgment) and emotion regulation, a common function of NSSI (Gratz, 2007; Klonsky & Muehlenkamp, 2007; Taylor et al., 2019), in a sample of university students. Results revealed that all facets of mindfulness, except for observing, emerged as positive predictors of coping self-efficacy. Similarly, Fallah (2017) also documented the role of dispositional mindfulness as a positive predictor of coping self-efficacy among a general sample of university students. However, only one study has replicated these findings among students with lived experience of NSSI. Specifically, Heath, Joly, and Carsley (2016) found that dispositional mindfulness was predictive of coping self-efficacy, and that coping self-efficacy fully mediated the relationship between dispositional mindfulness and engagement in NSSI.

The present findings build upon this literature by providing preliminary evidence for a novel avenue by which dispositional mindfulness and coping self-efficacy may be fostered in

university students with a history of NSSI; that is, by fostering their openness to engaging in mindfulness practice. Specifically, research has shown that dispositional mindfulness is malleable through repeated increases in state mindfulness as brought about by mindfulness practice (Kabat-Zinn, 2003; Kiken et al., 2015). Thus, it is reasonable to believe that without a receptive attitude towards mindfulness practice, one might choose not to engage in such practices, thereby thwarting any gains in dispositional mindfulness that may be achieved. In the context of this study, this is particularly relevant to students with a history of NSSI, who are in a unique position to benefit from mindfulness practice and improved dispositional mindfulness.

In the context of mental health service provision in universities, these findings highlight the utility of first exploring and developing students' feelings of openness to practicing mindfulness, *before* providing instruction around the use of mindfulness strategies. At the individual (e.g., clinical) level, we recommend providing psychoeducation around the efficacy of mindfulness practice, offering students more than one approach to mindfulness practice to bolster acceptability and feasibility (i.e., by suggesting both formal and informal practices; e.g., Birtwell et al., 2019; Hanley et al., 2015; Hindman et al., 2015), as well as exploring specific obstacles or beliefs that may be impeding students' receptivity towards mindfulness. Moreover, at the general student population level, mindfulness receptivity may also be targeted as part of widely-disseminated mindfulness-based programming. Mindfulness practice is already a common foundation of university campuses' resilience-building efforts, due to the abundant evidence demonstrating its mental health and well-being benefits among university students (see reviews by Dawson et al., 2020; Halladay et al., 2019). Thus, the approach recommended above for use at the individual level may be adapted and embedded within university-wide mindfulness-based programming (e.g., ensuring sufficient psychoeducation around efficacy is

provided, recommending multiple approaches to practicing mindfulness, and challenging commonly reported obstacles to mindfulness receptivity).

Mediating Role of Dispositional Mindfulness Among Students Without a History of NSSI

Interestingly, counter to our hypothesis (H3b), dispositional mindfulness did not mediate the relationship between mindfulness receptivity and coping self-efficacy among students who had never self-injured. However, significant positive effects emerged between each of the study variables in the model. Thus, it appears that fostering mindfulness receptivity may be similarly beneficial among students without a history of self-injury in terms of its positive relation to their dispositional mindfulness, an outcome which has demonstrated benefits to university adjustment for all students (Joly et al., 2022; Mettler et al., 2019). Further, our findings suggest that mindfulness receptivity is a predictor of coping self-efficacy among these students as well, but that this relationship does not operate through dispositional mindfulness in the same way that it does for students with a history of NSSI. As noted earlier, it is possible that, among students without a history of NSSI, their mindfulness receptivity may simply be indicative of a general self-confidence around exploring and/or employing effective coping strategies when challenges arise, thereby emerging as a direct predictor of coping self-efficacy.

This may not hold true for students with a history of NSSI, who reported significantly lower levels of coping self-efficacy in the present study when compared to students without a history of self-injury. It is likely to be the case that, among students with lived experience of NSSI, their lack of confidence in their ability to employ effective coping strategies led to their engagement in NSSI to begin with. In line with this contention, research conducted by Nock and Mendes (2008) with a sample of adolescents found that those who reported engaging in self-injury also reported lower self-efficacy for carrying out effective coping behaviours. Moreover,

research has found low coping self-efficacy to be a significant predictor of NSSI engagement in university samples (e.g., Bennett, 2017; Heath, Joly, & Carsley, 2016). Similarly, Midkiff et al. (2018) found low coping self-efficacy to be significantly associated with an increased frequency of engagement in NSSI, although these results were correlational and thus preclude causal determinations. Nevertheless, the aforementioned findings suggest that among university students with a history of NSSI, levels of mindfulness receptivity may not be indicative of a more general openness to employ effective coping strategies, as it may be among students without a history of self-injury. Rather, it may be related to their relatively greater degree of prior exposure to mindfulness practice, due to it being a core component of NSSI treatment (e.g., Krantz et al., 2018; Linehan et al., 2006; Rees et al., 2015) and a frequently recommended strategy within online resources for NSSI (e.g., Burgess, 2019; Kilburn & Whitlock, 2009; Self-Injury Outreach & Support, n.d.; Self-Injury Support, 2018).

As such, among students with a history of NSSI, their receptivity towards mindfulness practice may not be directly implicated in their coping self-efficacy insofar as it is implicated in their levels of dispositional mindfulness. This finding suggests that, for university students with lived experience of NSSI, fostering their mindfulness receptivity may be a key avenue by which their levels of dispositional mindfulness and, consequently, coping self-efficacy may be enhanced. This extends literature which has shown that repeated instances of mindfulness practice may increase levels of dispositional mindfulness over time (Brown & Ryan, 2003; Kabat-Zinn, 2003; Kiken et al., 2015) and tentatively suggests that merely fostering a receptive attitude towards mindfulness practice may produce a positive effect on dispositional mindfulness, although a longitudinal exploration of these variables is needed to assess this

possibility. Nevertheless, these preliminary findings highlight the potential importance of further studying mindfulness receptivity, in university students with and without a history of NSSI.

Limitations and Future Directions

Although the present study provides a novel contribution to literature, there are some limitations which must be considered. First, the sample was a predominantly female, university sample, therefore limiting generalizability. Future research is needed to establish the role of mindfulness receptivity in predicting dispositional mindfulness and coping self-efficacy among gender-balanced samples of university students with a history of NSSI. Moreover, the present study took place at a large urban university in Canada; findings may not generalize to all universities. Studies should explore the role of mindfulness receptivity in smaller and/or rural post-secondary institutions, as well as in non-Western contexts, where perceptions of mindfulness practice- and mental health interventions more generally- may differ. In addition, this study employed a cross-sectional design; while this is acceptable for obtaining preliminary evidence of the importance of mindfulness receptivity, it precludes causal determinations regarding the roles of mindfulness receptivity and dispositional mindfulness in predicting coping self-efficacy. Future research may benefit from longitudinal and experimental approaches to determine whether fostering mindfulness receptivity does, in fact, result in greater levels of dispositional mindfulness and coping self-efficacy over time. Nevertheless, the present study is a valuable first step in the investigation of the interrelations between these variables, particularly among university students with a history of NSSI.

Conclusion

Despite these limitations, the present study is the first to underscore the positive role of mindfulness receptivity in predicting important mental health outcomes, particularly among

university students with lived experience of self-injury. While these results are pending replication with longitudinal studies, they nonetheless underscore the potential importance of incorporating psychoeducation surrounding perceptions (and misconceptions) of mindfulness practice to mindfulness-based NSSI prevention and intervention efforts on university campuses, at both the individual- and general student population-level. The present study thus provides a novel contribution to mindfulness and NSSI research by highlighting potential mindfulness-based pathways to promote coping self-efficacy among university students with and without a reported history of NSSI engagement.

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Table 1

Correlations Between Study Variables as a Function of Nonsuicidal Self-Injury (NSSI) History

	1	**2**	**3**
1. Mindfulness receptivity	1		
2. Dispositional mindfulness	**.219*** (.192*)	1	
3. Coping self-efficacy	**.154** (.308**)	**.615**** (.488**)	1

Note. Correlations for participants with a history of NSSI (n = 114) are presented in bold and correlations for participants without a history of NSSI (n = 132) are presented in parentheses.
*$p < .05$.
*$p < .001$.

Table 2

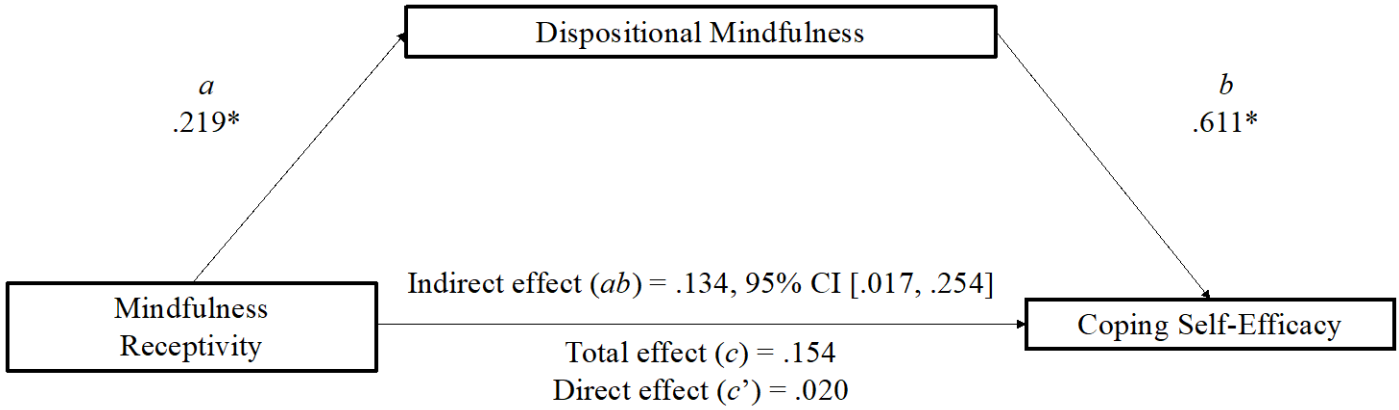
Means and Standard Deviations for all Study Variables

	NSSI (*n* = 114)		No-NSSI (*n* = 132)	
	M	*SD*	*M*	*SD*
Mindfulness receptivity	19.77_a	4.23	19.92_a	4.58
Dispositional mindfulness	70.15_a	12.21	75.37_b	10.72
Coping self-efficacy	147.52_a	41.04	179.02_b	42.66

Note. Within each row, differently lettered subscripts reflect significant mean differences ($p < .001$) as determined by one-way ANOVAs.

Figure 1

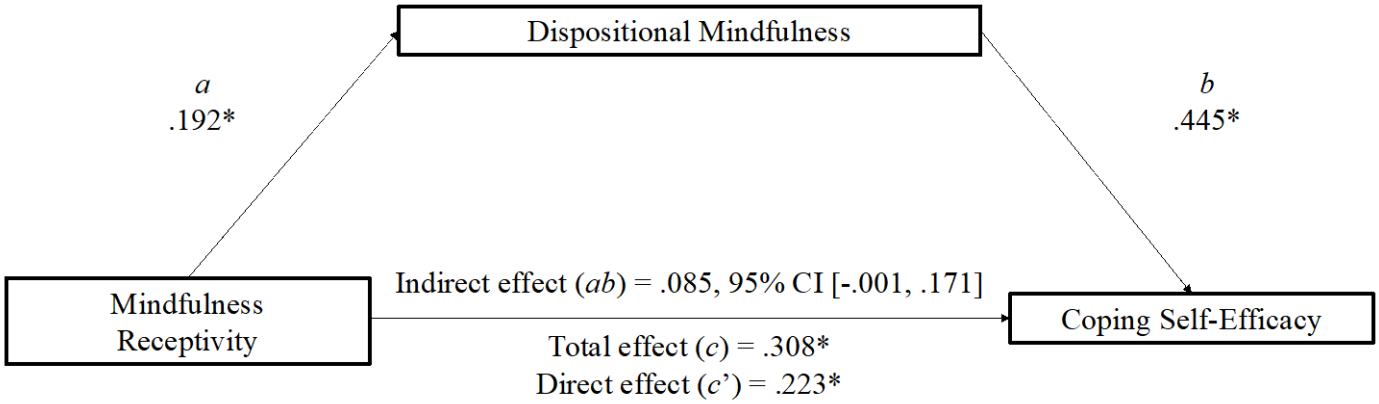
Standardized Regression Coefficients for the Relationship Between Mindfulness Receptivity and Coping Self-Efficacy as Mediated by Dispositional Mindfulness (NSSI Group; n = 114)



*$p < .05$.

Figure 2

Standardized Regression Coefficients for the Relationship Between Mindfulness Receptivity and Coping Self-Efficacy as Mediated by Dispositional Mindfulness (no-NSSI Group; n = 132)



*$p < .05$.

Supplemental File

Supplemental Table 1

Standardized Factor Loadings from a Confirmation Factor Analysis (CFA)

Item	CFA Loadings
I feel open to the idea of meditating.	.647
I would be willing to try practicing mindfulness on a regular basis.	.648
I feel receptive to the benefits that mindfulness may bring about.	.744
When I try to meditate, my own expectations get in the way of my practice. (R)	.109
My mind is too fast moving for me to meditate. (R)	.345
I am suspicious regarding the use of mindfulness. (R)	.433

Supplemental Table 2

Intercorrelation Coefficients Between the Mindfulness Receptivity (MR) Questionnaire Items and Total Score, and the Five Facets of Mindfulness Questionnaire (FFMQ) Total Score

	MR_1	MR_2	MR_3	MR_4	MR_5	MR_6	MR_T	FFMQ_T
MR_1	1							
MR_2	.426**	1						
MR_3	.494**	.475**	1					
MR_4	.053	.054	.049	1				
MR_5	.215*	.173*	.263**	.366**	1			
MR_6	.230**	.325**	.303**	.220*	.249**	1		
MR_T	.603**	.628**	.647**	.509**	.629**	.679**	1	
FFMQ_T	.053	.115	.175*	.169*	.181*	.214*	.254**	1

*$p < .001$, **$p < .01$