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The Impact of Self-Compassion Writing on Chronic Disease Self-Efficacy

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Abstract

Inflammatory bowel disease (IBD), comprising Crohn's disease and ulcerative colitis, is a chronic and unpredictable condition associated with substantial psychological burden. Self-efficacy—the belief in one's ability to manage health-related challenges—is a key predictor of effective chronic disease management, and prior research suggests that self-compassion may provide emotional and cognitive resources that support self-efficacy. The present study examined whether a brief self-compassion writing intervention could increase self-efficacy for managing IBD. Adults with IBD ($N = 83$) completed a negative IBD-related recall task before being randomly assigned to either the self-compassion writing condition or the control condition. Participants then completed measures of self-compassion and self-efficacy for managing chronic disease. Contrary to our hypotheses, the self-compassion writing task did not significantly increase self-efficacy or self-compassion relative to the control condition, suggesting that the manipulation was insufficient to shift these constructs. However, in line with hypotheses, correlational analyses revealed a moderate positive association between self-compassion and self-efficacy, indicating that individuals who reported greater self-compassion also reported greater confidence in managing their condition. In other words, although a brief, single-session self-compassion writing may not be sufficient to enhance IBD-specific self-efficacy, self-compassion and self-efficacy are meaningfully related in this clinical population. These findings are consistent with theories of chronic disease management and warrant further research into psychological self-management techniques for those with IBD.

Introduction

Inflammatory bowel disease (IBD), a collective term for two diseases: Crohn's disease and ulcerative colitis, is a chronic inflammatory condition of the gastrointestinal tract marked by recurrent bowel ulcers (Fiocchi, 1998; Liu & Xu, 2022; Pithadia & Jain, 2011). IBD affects millions worldwide and, without a cure, it has a significant impact on quality of life and healthcare resources (Ng et al., 2017). Although medical treatment for IBD has advanced considerably in recent years, current therapies rely heavily on pharmaceuticals, which often only work for a short time, or not at all (Imbrizi et al., 2023). Consequently, individuals with IBD suffer through unpredictable cycles of remission and relapse, contributing to high mental illness rates among this population (Bartocci et al., 2023). Interestingly, there is a large body of evidence suggesting a bidirectional relationship between mental health and IBD (Bisgaard et al., 2022; Gao et al., 2018; Gracie et al., 2018). For example, it is thought that IBD symptoms can contribute to anxiety and depression, and anxiety and depression can contribute to IBD symptoms (Bisgaard et al., 2022; Gracie et al., 2018). Therefore, an intervention to improve mental health may be particularly useful for IBD patients (Sheehan et al., 2023). The goal of this research was to test such an intervention designed to help increase self-efficacy.

Self-efficacy is the belief in one's ability to perform the behaviours necessary to manage challenges and achieve desired outcomes (Bandura, 1997; Sheehan et al., 2024). Psychological studies have shown that higher self-efficacy predicts better outcomes in managing chronic disease than lower self-efficacy (Lorig et al., 2001; Cramm et al., 2013). One way to improve self-efficacy is through increased self-compassion; studies have shown that self-compassion provides the emotional and cognitive resources that help maintain and strengthen self-efficacy (Neff, 2003; Bandura, 1997; Liao et al., 2021; Sirois et al., 2015). Self-compassion involves

treating oneself with kindness and understanding in times of struggle, recognising that suffering is part of the shared human experience, and holding painful emotions in balanced awareness rather than being overwhelmed by them (Neff, 2003; Leary et al., 2007). However, despite the established roles of self-efficacy and self-compassion in managing chronic conditions, little is known about how these constructs interact in the context of IBD—a condition uniquely marked by unpredictability, stigma, and psychosocial burden (Lenti et al., 2020). In this study, we wanted to know if a short self-compassion writing task would increase an individual's self-efficacy regarding their IBD.

The aetiology of IBD is thought to include an interplay of genetic, environmental, and immunological factors (Fiocchi, 1998; Pithadia & Jain, 2011), though the direct cause of the disease remains unknown. The disease manifests with symptoms such as abdominal pain, diarrhea, bleeding, fatigue, anemia, and weight loss (Pithadia & Jain, 2011; Fiocchi, 1998), and is largely unpredictable regarding consistency, duration, and severity (Geboes, 2001; Lenti et al., 2020). The presence of IBD symptoms is referred to as a flare, which represents a period of increased disease activity marked by worsening gastrointestinal symptoms and elevated inflammatory biomarkers (Walsham & Sherwood, 2016). Flares are common throughout the disease course and vary in both severity and duration, ranging from brief, mild episodes to acute severe ulcerative colitis that requires medication, hospitalisation, or surgery (Pabla & Schwartz, 2020; Solberg et al., 2009; Fumery et al., 2018). Because flares occur unpredictably, this uncertainty itself can contribute to significant psychological distress, with anxiety and depression rates rising markedly during active disease (Barberio et al., 2021). Due to the unpredictable and debilitating nature of IBD, patients need to have strong self-management strategies to achieve and maintain a good quality of life when flares arise (Kennedy et al., 2004; Sheehan et al., 2023).

Self-efficacy is a key psychological construct for effective self-management of unpredictable chronic illnesses like IBD (Bandura, 1997; Sheehan et al., 2024). It refers to an individual's belief in their capacity to successfully perform the behaviours necessary to achieve specific goals or manage challenges (Bandura, 1997). For example, IBD patients with high self-efficacy are likely to feel confident in their ability to implement their doctor's recommendations and institute potentially onerous lifestyle changes necessary for effective disease management (Bandura, 1997; Graff et al., 2009). Conversely, IBD patients with low self-efficacy may experience reduced confidence in their ability to enact these changes (Bandura, 1997). These differing mindsets may contribute to a self-fulfilling prophecy (e.g., Madon et al., 2011), whereby individuals with high self-efficacy are more likely to engage in adaptive health behaviours, leading to improved health outcomes, while those with lower self-efficacy may not perform the necessary health behaviours to improve their well-being, and consequently experience poorer health outcomes (Chan, 2021; Sheehan et al., 2023).

The ability of self-efficacy to shape behaviour is influenced by four key components: personal accomplishments (mastery experiences), social persuasion, vicarious learning, and physiological and emotional states (Bandura, 1986; Bandura, 1997; Liao et al., 2021). Personal accomplishments, such as successfully managing symptoms or adhering to treatment, directly strengthen an individual's sense of capability. Social persuasion, in the form of encouragement and positive feedback from healthcare providers, family, or peers, can further enhance belief in one's capacity to cope. Vicarious learning also plays a role, as observing others with IBD successfully managing their condition provides valuable models for success. Finally, physiological and emotional states—such as how one interprets stress or fatigue—can influence self-beliefs, with a balanced, manageable view of these experiences, fostering stronger

confidence in one's ability to adapt (Bandura, 1986; Bandura, 1997). Taken together, these components highlight self-efficacy as a key psychological construct that influences decision-making, persistence, recovery from setbacks, and stress management in chronic disease (Bonsaksen et al., 2012; Cramm et al., 2013).

This theory is borne out in the literature; psychological studies have found that high self-efficacy can predict better outcomes when dealing with chronic disease in general (Lorig et al., 2001; Cramm et al., 2013). Individuals with higher self-efficacy are more likely to adhere to medication regimens, make and maintain dietary modifications, exercise regularly, monitor symptoms, and manage pain effectively (Cramm et al., 2013; Lorig et al., 2001; Sheehan et al., 2023). Beyond physical health behaviours, greater self-efficacy has also been linked to reduced symptom distress, improved daily functioning, lower levels of anxiety and depression, and greater resilience when facing stressors (Bandura, 1997; Pajares, 1997; Cramm et al., 2013; Sheehan et al., 2023; Sheehan et al., 2024). Self-efficacy is an especially important predictor of patients' initiation and continuation of the lifestyle changes necessary for long-term disease management (Bonsaksen et al., 2012).

Although high self-efficacy is vital for managing chronic disease in general, it may be especially important for IBD given the brain-gut axis. The brain-gut axis refers to the complex communication system linking the central nervous system and the gastrointestinal tract (Bartocci et al., 2023). Inflammation in IBD can alter gut microbiota composition and increase intestinal permeability, leading to the release of proinflammatory cytokines—which contribute to widespread inflammation and microbial metabolites—that disrupt normal brain signalling, all of which negatively influence brain function and emotional regulation (Emge et al., 2016; Gao et al., 2018). In the other direction, psychological stress can disrupt the balance of the gut

microbiota and increase intestinal inflammation, thereby worsening IBD symptoms (Gao et al., 2018). Due to this, there appears to be a bidirectional relationship between IBD and mood disorders, with prevalence rates of anxiety and depression higher among IBD patients than in the general population (Bartocci et al., 2023; Bisgaard et al., 2022; Gracie et al., 2018; Graff et al., 2009). A recent longitudinal study observed patients with active IBD develop new anxiety despite no prior mental health difficulties and, conversely, individuals with pre-existing mental health difficulties develop objective markers of IBD disease activity (Gracie et al., 2018). Furthermore, a meta-analysis showed both that patients with active IBD were associated with the development of symptoms of depression and anxiety, and that IBD patients with symptoms of depression were at increased risk of flare (Bisgaard et al., 2022). Hence, comorbid anxiety or depression, if unrecognised or untreated, may play a part in the development of IBD symptoms, while ongoing IBD activity may have implications for psychological health (Gracie et al., 2018). These lines of evidence support the bidirectional relationship between IBD and mood disorders, which suggests that an improvement in mental well-being could directly impact physical IBD symptoms (Gracie et al., 2018). Therefore, enhancing self-efficacy may impact physical IBD symptoms through the brain-gut axis.

Given the importance of self-efficacy in chronic disease management, researchers have sought ways to strengthen it. One popular avenue is the Chronic Disease Self-Management Program (CDSMP), which is a 6- to 7-week small-group intervention that aims to increase self-efficacy through social persuasion, problem-solving techniques, self-management behaviour modelling, skill mastery, and symptom reinterpretation (Muscat et al., 2020; Lorig et al., 2001). Findings suggest that the CDSMP can foster self-efficacy in patients, though it is relatively resource-heavy, requiring training for leaders and 6 to 7 weeks of classes. Given that self-

efficacy can be fostered in patients and that interventions that strengthen self-efficacy can empower patients to take greater control of their health (Lorig et al., 2001; Cramm et al., 2013), enhancing self-efficacy seems a promising avenue for improving health outcomes in IBD. We aimed to identify an alternative that required fewer resources but still produces practical improvements in self-efficacy.

An easier route to enhancing self-efficacy could be through enhancing a related psychological concept: self-compassion. The concept of self-compassion is rooted in Buddhist philosophy, where it is understood as compassion directed inward toward the self (Neff, 2004). Neff's (2003) dimensional model proposes that self-compassion exists on a spectrum from high to low, comprising three dimensions: self-kindness versus critical self-judgement, common humanity versus isolation, and mindfulness versus over-identification (Neff, 2016; Neff & Dahm, 2013). Self-kindness refers to the ability to respond to one's suffering with warmth and understanding rather than criticism. Common humanity recognises that suffering, failure, and imperfection are part of the broader human condition rather than isolating experiences. Mindfulness involves maintaining balanced awareness of painful emotions without becoming consumed by them (Neff, 2003). This approach suggests that enhancing these three dimensions of self-compassion can soften the negative emotions associated with suffering and transform them into a more positive and supportive state of mind, thereby establishing a foundation for self-efficacy (Neff, 2003).

One psychological explanation for why self-compassion may improve self-efficacy is provided by Fredrickson's broaden-and-build theory (2001). This theory posits that positive emotions broaden individuals' momentary thought-action repertoires, thereby expanding their perceptions of available behaviours and thoughts in response to challenges, thereby building

enduring personal resources over time (Fredrickson, 2001). In the context of chronic illness, a self-compassionate mindset can foster positive affect, which may expand patients' perceptions of their coping options and strengthen their psychological resources, including self-efficacy.

Supporting this theory, research indicates that positive affect not only improves mood but also facilitates adaptive coping and symptom management in populations with chronic diseases (Pressman et al., 2019). This finding supports the broaden-and-build theory by demonstrating that a positive attitude can influence positive behaviour, in turn benefiting health outcomes. This also makes sense on a biological level, as individuals reporting higher positive affect have been associated with lower cortisol output and positive associations with inflammatory markers (Steptoe et al., 2009). Taken together, positive affect can benefit health outcomes through facilitating adaptive management strategies and reducing stress in the body: key aspects of self-efficacy.

The link between self-compassion and self-efficacy has been observed in a variety of contexts. A recent meta-analysis found a positive association between self-compassion and self-efficacy ($r = .35$) across 60 studies (Iskender, 2009; Liao et al., 2021). However, studies that have examined this have primarily focused on trait self-compassion rather than on the experimental cultivation of self-compassion, which does not suggest a pathway for individuals lacking inherent self-compassion.

How then does one improve self-compassion? One successful method for cultivating a self-compassionate mindset has been demonstrated experimentally using a three-part writing task with university students (Leary et al., 2007). First, all participants recalled a negative event from high school or college that made them feel bad about themselves—something that involved failure, humiliation, or rejection. Participants in the self-compassion condition followed three

prompts designed to help them think about the negative event in a compassionate manner. The first prompt focused on the common humanity aspect of self-compassion by asking participants to identify ways others may have experienced similar events. The second prompt focused on self-kindness and asked participants to write a paragraph offering themselves understanding, kindness, and concern, in the same manner they might respond to a friend who had gone through the same experience. Finally, to encourage a mindful perspective, the third prompt instructed participants to describe their feelings about the event in an objective and emotionally neutral manner (Leary et al., 2007). Participants in the control condition were not exposed to the prompts. To measure self-compassion, all participants in this study had completed the Self-Compassion Scale (Neff, 2003) several weeks before the experiment. After completing the experiment, participants rated how they felt. Participants who completed the letter-writing task condition reported significantly lower negative affect than participants in the control condition, and thought that they were significantly more similar to other people than participants in the control condition. These findings suggest that a single session self-compassion writing task can foster a self-compassionate mindset.

The goal of the current study was to experimentally test the effectiveness of this letter-writing task in the context of IBD and to see whether improvements in self-compassion led to improvements in self-efficacy for managing IBD. Although self-efficacy can be increased through longitudinal self-compassion training (e.g., Neff & Germer, 2013), we wondered if a single-session self-compassionate writing task could also increase self-efficacy towards IBD. Answering this may provide low-cost, accessible psychological tools that enable individuals with IBD to manage their health and improve overall well-being more confidently, lessening the burden on healthcare systems and increasing the likelihood of societal contribution from IBD

patients. In the present study, we investigate this question using a brief self-compassion writing task and a validated self-efficacy scale. We will also explore how the items of self-compassion relate to those of self-efficacy. We hypothesise that self-compassion will increase self-efficacy for patients with IBD. We also hypothesise that self-compassion items will correlate positively with self-efficacy items (Liao et al., 2021).

Method

Design

We randomly assigned participants to one of two experimental conditions after the negative experience letter-writing task. The first condition was a self-compassion writing prompt where participants followed three prompts to frame their answer to the letter-writing task in a self-compassionate way, and then completed the surveys. The second condition was a control group in which participants completed the surveys directly after the letter-writing task.

Participants

We conducted a power analysis and found we need a sample size of approximately 64 participants to detect an effect equal to Cohen's d of 0.75 ($r = .35$; Liao et al., 2021), with an alpha of .05 and a power of 0.9. We aimed for 100 participants to increase precision.

We recruited 63 participants from the Cloud Connect subject pool; participants were paid standard Cloud Connect rates for their participation (2.50 USD). We then recruited an additional 108 participants from Facebook support groups and an online support platform named "Stuff that works." These participants were not paid for their participation.

Participants gave informed consent in accordance with the University of Waikato ALPSS Human Research Ethics Committee's approved procedures (see Appendix A and G). As preregistered (see Appendix H), we excluded a total of 88 participants who: a) did not complete

the entire survey ($n = 79$); b) answered no to one of the attention requirement questions ($n = 4$); c) provided a non-sensical description of the tasks they completed ($n = 2$); or d) selected a diagnosis different from Crohn's or ulcerative Colitis ($n = 3$). We retained 83 participants for analysis.

Of these participants, 66.3% identified as female, 28.9% as male, and 4.8% as gender diverse. Participants' ages ranged from 18–25 (6%), 25–35 (34.9%), 35–45 (19.3%), 45–55 (18.1%), 55–65 (13.3%), and over 65 years (8.4%). With regard to ethnicity, 73.5% identified as European, 2.4% as Asian, 1.2% as African, 2.4% as Hispanic, 10.8% as Other, and 9.6% as more than one ethnicity. For diagnosis type, 63.9% of participants identified as having Crohn's disease, and 36.1% with ulcerative colitis.

Stimuli

The letter task was adapted from Leary et al (2007). All participants responded to the prompt: "Think about a negative event related to your IBD that made you feel badly about yourself. It might be related to your diagnosis, symptoms, or treatment. Describe the event and how you felt and behaved at the time (You must spend 1 minute on this page, but you will be given 10 minutes to complete the letter. Please write at least 150 words)" (see Appendix B).

The self-compassion prompts were also adapted from Leary et al (2007), who developed them based on the components of self-compassion proposed by Neff (2003). Participants in this condition responded to these three prompts: 1. "With the event in mind, list ways in which other people also experience similar events." 2. "With the event in mind, write a paragraph expressing understanding, kindness, and concern to yourself in the same way that you might express concern to a friend who had undergone the experience." 3. "With the event in mind, describe your feelings about the event in an objective and unemotional fashion" (see Appendix C).

We measured self-efficacy using the Self-Efficacy Scale for Managing Chronic Disease (SESMCD), which consists of six items (e.g., “How confident are you at present to do the different tasks and activities needed to manage your health condition so as to reduce your need to see a doctor?” see all items in Appendix F) rated on a 10-point scale, with 1 indicating *not at all confident* and 10 indicating *totally confident* (Ritter & Lorig, 2014; see Appendix D). The overall scale score is computed as the mean of the six items; however, if more than two responses are missing, the score is treated as missing (Lorig et al., 2001; Ritter & Lorig, 2014). The SESMCD has demonstrated strong internal consistency reliability across samples, with Cronbach’s alpha values ranging from 0.88 to 0.91 (Ritter & Lorig, 2014).

We measured self-compassion using the Self-Compassion Scale–Short Form (SCS–SF; Raes et al., 2011), which consists of 12 items (e.g., “How often do you give yourself the caring and tenderness you need when going through a very hard time”) derived from the original 26-item Self-Compassion Scale (Neff, 2003; see Appendix E). Items are rated on a 5-point Likert scale, with 1 indicating *almost never* and 5 indicating *almost always*. The overall scale score is computed as the mean of the 12 items; however, reverse coding was required for Items 1, 4, 8, 9, 11, and 12. Higher scores in the SCS-SF reflect greater self-compassion (Raes et al., 2011). The SCS-SF has demonstrated strong internal consistency reliability across samples ($\alpha \geq 0.86$; Raes et al., 2011).

Procedure

First, participants were shown a brief preamble explaining that they would be asked to recall a negative event related to their IBD and write a brief paragraph about it. All participants wrote this paragraph. Then, we randomly assigned participants to either the control condition or the self-compassionate writing condition. Participants in the self-compassionate writing

condition read the three self-compassion prompts and wrote short paragraphs in response. Participants in the control condition did not see these prompts and progressed immediately to the survey measurements. All participants then completed the SESMCD and the SCS-SF in that order. Finally, participants filled in basic demographic information, answered questions about their compliance with our instructions, and were debriefed. Participants who completed the survey through Cloud Connect followed payment instructions and were paid by Cloud Connect.

Results

We now turn to our primary research question: to what extent did the self-compassion writing task influence participants' self-efficacy for managing chronic disease? To answer this, we compared SESMCD scores between the control and experimental groups using a *t*-test. Participants in the control group ($M = 5.58$, $SD = 2.21$) and the experimental group ($M = 5.68$, $SD = 2.12$) reported similar levels of self-efficacy. The difference was not statistically significant, $t(84) = -0.22$, $p = .412$, Cohen's $d = 0.05$, 95% CI $[-0.38, 0.47]$.

In other words, our manipulation of self-compassion—the letter writing task—failed to increase self-efficacy. Given this, we wondered if the letter-writing task was sufficient to increase participants' self-compassion. As a manipulation check, we compared SCS-SF scores between the control ($M = 2.92$, $SD = 0.73$) and experimental group ($M = 3.01$, $SD = 0.81$). These groups did not significantly differ in self-compassion scores, $t(84) = -0.57$, $p = .29$, Cohen's $d = 0.12$, 95% CI $[-0.30, 0.55]$. This suggests that, within this sample, the brief writing task did not significantly affect self-compassion. In other words, the manipulation was not strong enough.

We also ran a correlation to examine our secondary research question: to what extent is the SCS-SF associated with the SESMCD? Pearson's correlation revealed a moderate, positive association between self-compassion and self-efficacy, $r(86) = .61$, $p < .001$, indicating that

higher self-compassion was associated with higher self-efficacy. In contrast to our experiment findings, these results indicate a relationship between self-compassion and self-efficacy for managing chronic disease.

As a follow-up, we wondered whether disease activity (active vs. inactive flare) affects self-efficacy. Psychological research indicates that it may; compared to patients with active disease, patients in remission are more likely to demonstrate higher interest in treatment participation, more confidence to overcome symptom-related barriers, and report greater perceived control of their health (Sessford et al., 2015). This makes sense on the face: a person's belief in their ability to meet a challenge is likely lower when confronted with the challenge's difficulties. Therefore, we hypothesised that participants in remission may report higher self-efficacy. This result would have implications for treatment and show the importance of increasing self-efficacy during a flare. To address this possibility, as an exploratory analysis, we conducted an independent samples *t*-test to assess whether active flare at the time of the survey influenced self-efficacy ratings on the SESMCD. Participants who were not in an active flare ($M = 6.24$, $SD = 1.92$) reported significantly higher self-efficacy than those in an active flare ($M = 3.86$, $SD = 1.71$), $t(82) = -4.91$, $p < .001$, Cohen's $d = -1.26$, 95% CI $[-1.79, -0.72]$. Therefore, our results suggest that disease activity does impact self-efficacy. Specifically, when the disease is inactive, patients report more confidence in their ability to manage their disease compared to when their disease is active.

Discussion

The primary aim of this study was to determine whether a brief self-compassion writing task could enhance self-efficacy for managing chronic disease in individuals with IBD. All participants first recalled a negative IBD-related experience, after which only the experimental

group completed a self-compassion task. Contrary to our hypothesis, the brief self-compassion intervention did not significantly increase self-efficacy. The manipulation check indicated that the task did not significantly increase self-compassion, suggesting that the lack of an effect on self-efficacy is more likely due to the manipulation's weakness than to an absence of an association between self-compassion and self-efficacy. Results from our secondary aim, to examine whether self-compassion correlated with self-efficacy in this IBD sample, supported our hypothesis by indicating that self-compassion and self-efficacy were moderately and positively associated: participants who reported higher self-compassion also tended to feel more confident in their ability to manage their disease. These results further support the explanation that the lack of an effect on self-efficacy is more likely due to the manipulation's weakness than to an absence of association between self-compassion and self-efficacy. This pattern is consistent with previous research showing that self-compassion is positively linked to self-efficacy across a range of populations and domains (Iskender, 2009; Liao et al., 2021; Neff, 2003) and extends these findings to people living with IBD. Importantly, it also demonstrates that, before any attempt to manipulate these constructs, they are meaningfully related in this clinical context—a valuable precondition for future work aimed at testing causal effects.

Why did the intervention fail to change self-efficacy? A primary explanation for the lack of between-group differences is that the intervention may have been too brief to meaningfully shift self-beliefs in this population. Bandura (1997) emphasises that self-efficacy develops gradually through repeated mastery experiences, social persuasion, and the reinterpretation of physiological states rather than through single, isolated encounters. Our single-session writing task may not have provided sufficient exposure or emotional depth to shift participants' self-compassion or their perceptions of efficacy, particularly in the context of a longstanding,

complex illness such as IBD. Furthermore, a meta-analysis of general therapeutic writing found that the more days over which an experiment takes place, the stronger the therapeutic effects (Smyth, 1996)—suggesting that implementing the self-compassion prompts repeatedly over multiple days or weeks may have cultivated stronger self-compassion effects than a single-session intervention. Self-compassion interventions that have successfully improved chronic illness outcomes are typically multi-session, combining psychoeducation, guided meditation, and repeated opportunities to practice self-compassion in daily life (Neff & Germer, 2013). Our design lacked these components and did not include follow-up assessments to capture delayed effects. From a practical standpoint, this is an important finding for our aim of developing a low-intensity, self-administered intervention: it suggests that a single, unguided writing session is unlikely to be sufficient to impact IBD-specific self-efficacy, and future studies should consider multi-session designs to allow for the cultivation of self-compassion over time.

A second possibility is that recalling and writing about a negative event produced short-term distress that interfered with participants' ability to engage with the self-compassion task, thereby reducing the manipulation's effectiveness in the treatment condition. Studies have found that writing about upsetting experiences can temporarily increase negative affect immediately after the task, even when longer-term improvements in mood and well-being are observed (Pennebaker, 1997). Such short-term distress may have made it more difficult for participants to access self-kindness, common humanity, or mindfulness during the brief writing exercise used in the present study (Neff, 2003). Furthermore, because participants selected their own negative events, the emotional intensity, recency, and degree of resolution of these experiences likely varied. Supporting this possibility, prior research has shown that the way individuals write about traumatic experiences—including the emotional tone and coherence of their narratives—is

associated with differential outcomes, with less resolved or more disorganised narratives linked to poorer immediate responses (Pennebaker, 1997). Participants writing about more unresolved events may therefore have experienced heightened distress, limiting their capacity to benefit from a brief self-compassion prompt. Future studies could address this limitation by coding written narratives for emotional tone, severity, or coherence, or by standardising the type of event that participants are asked to recall. Alternatively, a multi-session design may allow the initial distress elicited by recalling negative experiences to subside before self-compassion is assessed, potentially enhancing the manipulation's effectiveness.

Notably, Leary et al. (2007, Study 5)—from whom we adapted our three self-compassion prompts—did find significant effects of a similarly brief writing induction: undergraduate participants who reflected on a negative personal event using self-compassionate prompts reported lower negative affect and greater perceived similarity to others (i.e., common humanity) than those in control conditions. Our findings suggest that what was sufficient to affect transient emotional reactions and appraisals of common humanity in a non-clinical student sample was not sufficient to alter more stable beliefs about the capacity to manage a complex, chronic illness. This difference is likely because Leary et al. targeted short-term emotional outcomes (state negative affect, perceived commonality). In contrast, our outcome was domain-specific self-compassion and self-efficacy regarding IBD management, which may be shaped by years of disease experience, medical encounters, and treatment success or failure, which may have rendered their self-efficacy beliefs more resistant to short-term change (Sirois et al., 2015). It is likely easier to briefly shift how people feel about a single unpleasant event than to change their global sense of capability to manage a longstanding health condition. Leary et al.'s participants also completed the tasks in a controlled laboratory environment under researcher oversight,

which may have promoted engagement and depth of processing, compared to our study, in which participants completed the writing online and unsupervised, possibly with more distractions and variable motivation (Heerwegh & Loosveldt, 2008). Evidence suggests that unsupervised online administration is more likely to elicit satisficing behaviours, including higher rates of “don’t know” responses, non-differentiation on rating scales, and item nonresponse, than in-person administration (Heerwegh & Loosveldt, 2008). Taken together, these differences suggest that although Leary et al.’s brief induction is sufficient to influence state affect and perceptions of common humanity, a more intensive or repeated intervention may be required to produce measurable change in IBD-related self-compassion and self-efficacy.

Despite the manipulation failure in this study, the correlational association between self-compassion and self-efficacy was significant. This finding aligns with theoretical accounts proposing that self-compassion can provide the emotional and cognitive resources required to maintain or strengthen self-efficacy (Liao et al., 2021; Neff, 2003; Sirois et al., 2015).

Fredrickson’s broaden-and-build theory (2001) offers one explanation: self-compassion tends to generate mild positive emotions—warmth, relief from self-criticism, a sense of connection—which broaden individuals’ thought–action repertoires and, over time, help build enduring resources such as resilience and efficacy beliefs. In the context of IBD, responding to symptoms, setbacks, and treatment challenges with self-kindness and a sense of common humanity may allow patients to appraise difficulties as surmountable, consider a wider range of coping options, and persevere with self-management behaviours, thereby reinforcing their sense of capability.

Conceptually, it makes sense why self-compassion and self-efficacy may influence each other bidirectionally in that they both have similar foundations. For example, the common humanity component of self-compassion may protect the personal accomplishments facet of self-

efficacy by framing failures as a normal part of human experience rather than as personal defects, thereby reducing the demoralising impact of setbacks. Mindfulness may prevent individuals from over-identifying with lapses in self-management or disease flare-ups, helping them to view such events as transient and manageable. Together, these self-compassion processes may channel feelings of failure into motivation to learn and adapt rather than into self-pity or avoidance (Liao et al., 2021). Our finding of a moderate positive correlation between self-compassion and self-efficacy in an IBD sample, therefore, provides empirical support for these theoretical linkages and highlights self-compassion and self-efficacy as promising mechanisms for future interventions aimed at improving disease management.

Could other factors be influencing self-efficacy concurrently? Our exploratory analysis showed that participants in remission reported significantly higher self-efficacy than those experiencing an active flare. This finding is consistent with prior research indicating that patients in remission tend to report greater perceived control over their health, higher motivation to participate in treatment, and more confidence in their ability to overcome symptom-related barriers than patients with active disease (Sessford et al., 2015). From the perspective of Bandura's Social Cognitive Theory (1986, 1997), periods of remission provide fertile ground for mastery experiences: patients can see that their efforts (e.g., medication adherence, dietary changes, stress management) are associated with symptom stability or improvement, and their physiological states feel more predictable and manageable. Such experiences naturally strengthen efficacy beliefs. By contrast, active flares may serve as disconfirming experiences, signaling a loss of control and undermining confidence in one's ability to influence disease course.

These dynamics suggest a potentially bidirectional relationship between disease activity and self-efficacy. High self-efficacy may promote better self-management and stress regulation, in turn reducing the likelihood or severity of flares, whereas recurrent or severe flares may erode self-efficacy. Qualitative work on chronic illness self-management supports this view: over time, patients accumulate experiential knowledge about their disease and learn “what works” and “what does not,” which, in turn, enhances their confidence in managing symptoms (Willis, 2016). Our findings align with those of Willis (2016) and therefore support the notion that interventions to strengthen self-efficacy may be particularly effective when delivered during remission, both to consolidate mastery experiences and to buffer patients against the psychological impact of future flares.

Beyond the ineffective manipulation, there was one crucial limitation to this research that should be considered: the recruitment strategy may have introduced sampling bias. Due to not being able to obtain enough participants from Cloud Connect, we posted our survey on various IBD support platforms. Approximately half of our participants were recruited from online IBD support groups and platforms, and the remainder from Cloud Connect. Using support platforms to recruit participants introduced the potential for bias, as it has been found that individuals who engage in illness-specific support communities may be more proactive, health-literate, or motivated to manage their condition: key components of self-efficacy and self-compassion (Dinh & Bonner, 2023; Zhou et al., 2022). Further, self-compassion inductions may be less effective among individuals who already report high levels of self-compassion (Leary et al., 2007). For example, Leary et al. (2007) found that a self-compassion induction increased perceptions of similarity to others only among participants low in baseline self-compassion, with no effect for those high at baseline. In the present study, baseline self-compassion was not measured or

standardised, meaning that pre-existing differences—potentially shaped by support group exposure—may have reduced the effectiveness of the manipulation in this population. To monitor for this possibility, exploratory comparisons between participants recruited via support groups and via Cloud Connect suggested broadly similar patterns of self-efficacy and no clear evidence that the recruitment source altered the intervention’s effect (see Appendix F). Though, to avoid this possibility of bias altogether, future research should aim to recruit from a consistent source. Alternatively, studies with multiple time points could measure baseline self-compassion before the manipulation and statistically control for or stratify by baseline levels.

Despite this limitation, the present study makes several contributions. Theoretically, it extends the self-compassion literature into the context of IBD, a chronic illness marked by unpredictability, stigma, and substantial psychosocial burden. Demonstrating a robust correlation between self-compassion and self-efficacy in this population strengthens the case for viewing self-compassion as a psychological resource that may interact with the brain–gut axis and broader stress-inflammation pathways to influence disease outcomes. It also complements emerging work emphasising the importance of psychological well-being and adaptive coping in IBD management (Bartocci et al., 2023; Bisgaard et al., 2022; Gracie et al., 2018). Practically, our findings suggest that although single-session self-compassion writing may not be sufficient to enhance IBD-specific self-efficacy, more intensive or multi-session interventions that systematically cultivate self-compassion remain promising. Self-compassion is an especially attractive target because it can, in principle, influence all four sources of self-efficacy: it may promote mastery by encouraging persistence after setbacks, enhance social persuasion and vicarious learning by increasing willingness to seek and accept support, and reshape the interpretation of physiological and emotional states by fostering a kinder, more balanced attitude

toward bodily symptoms and distress. If future studies can demonstrate that strengthening self-compassion leads to sustained improvements in self-efficacy, mental health, and disease management, self-compassion training could offer a low-cost, accessible adjunct to standard medical care for people with IBD.

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Appendix A: Study Information

Who is conducting this research?

This research is being conducted by a team of researchers led by Dr. Andrew J. Evelo (andrew.evelo@waikato.ac.nz) in the School of Psychology at the University of Waikato. The divisional Human Research Ethics Committee has approved this research. Any questions about the ethical conduct of this research can be sent directly to the committee secretary (alpss-ethics@waikato.ac.nz).

What is the purpose of this research?

The purpose of this study is to examine factors related to living with inflammatory bowel disease (IBD), with the potential to inform psychological interventions. If you have not been diagnosed with either Ulcerative Colitis or Crohn's disease, please do not volunteer to participate.

What is involved if you agree to participate?

- The study will last approximately 20 minutes.
- You will answer a series of short surveys on your experience with your IBD.
- We do not anticipate any risks arising from your participation in this study.
- You are free to withdraw from the study before your session ends, without giving a reason.

Privacy and Confidentiality

- Confidentiality. We will not collect direct identifying information, such as your name or email, to protect your privacy. However, we may ask for certain demographic information (e.g., age or gender).

- **Storage.** We will keep proof of your consent and data for at least five years after this research is published, and we may keep them indefinitely. All of this information will be stored on a secure online server.
- **Analysis.** Your responses will be collected and combined with those of other participants. We will then analyse the data and examine the overall patterns of responses.
- **Publication.** The anonymised data and group analyses may be published in various formats, including journal articles, scholarly presentations, theses, dissertations, and press releases. We may also share the data with related projects or other scholarly professionals.

Voluntary Participation and Withdraw

Participation in this research is entirely voluntary. You are free to withdraw from the study before your participation is complete, without giving a reason. At the end of the study, we will provide you with an additional opportunity to withdraw your consent and all the information you have provided. However, due to the anonymous nature of the responses, withdrawing or deleting your information will not be possible after this point.

Study Information

During this study, you will be asked to think back to a negative event related to your IBD, and write a brief paragraph about that experience. You will then fill out some survey questions and be debriefed.

Informed Consent

Consent to Participate

I have read and understood the information about this research project. I have had an opportunity to ask questions and have them answered satisfactorily. I understand the purpose of this research,

what will happen if I participate, and what will happen to the information I provide. I understand the measures in place to protect my privacy and confidentiality. I understand that I can withdraw my consent before my participation ends, and I do not have to give a reason. I agree to participate in this research, and I understand that checking (ticking) the box below indicates my consent.

Yes, I agree to participate in this research.

No, I do not agree to participate in this research.

Appendix B: Writing Task

Instructions: Think about a negative event related to your IBD that made you feel badly about yourself. It might be related to your diagnosis, symptoms or treatment. Describe the event and how you felt and behaved at the time (You must spend 1 minute on this page, but you will be given 10 minutes to complete the letter. Please write at least 150 words).

Appendix C: Self-compassion Writing Prompts

1. With the event in mind, list ways in which other people also experience similar events.
2. With the event in mind, write a paragraph expressing understanding, kindness, and concern to yourself in the same way that you might express concern to a friend who had undergone the experience.
3. With the event in mind, describe your feelings about the event in an objective and unemotional fashion.

Appendix D: Self-Efficacy Scale for Managing Chronic Disease (SESMCD)

Instructions: We would like to know how confident you are in doing certain activities. For each of the following questions, please choose the number that corresponds to your confidence that you can do the tasks regularly at the present, where 1 = Not at all confident, and 10 = Totally confident.

1. Keep the fatigue caused by your disease from interfering with the things you want to do.
2. Keep the physical discomfort or pain of your disease from interfering with the things you want to do.
3. Keep the emotional distress caused by your disease from interfering with the things you want to do.
4. Keep any other symptoms or health problems you have from interfering with the things you want to do.
5. Do the different tasks and activities needed to manage your health condition so as to reduce your need to see a doctor.
6. Do things other than just taking medication to reduce how much your illness affects your everyday life.

Appendix E: Self-Compassion Scale- Short Form (SCS-SF)

Instructions: Please read each statement carefully before answering. Indicate how often you behave in the stated manner, where 1 = Almost Never, and 5 = Almost Always.

1. When I fail at something important to me I become consumed by feelings of inadequacy.
2. I try to be understanding and patient towards those aspects of my personality I don't like.
3. When something painful happens I try to take a balanced view of the situation.
4. When I'm feeling down, I tend to feel like most other people are probably happier than I am.
5. I try to see my failings as part of the human condition.
6. When I'm going through a very hard time, I give myself the caring and tenderness I need.
7. When something upsets me I try to keep my emotions in balance.
8. When I fail at something that's important to me, I tend to feel alone in my failure.
9. When I'm feeling down I tend to obsess and fixate on everything that's wrong.
10. When I feel inadequate in some way, I try to remind myself that feelings of inadequacy are shared by most people.
11. I'm disapproving and judgmental about my own flaws and inadequacies.
12. I'm intolerant and impatient towards those aspects of my personality I don't like.

Appendix F: Exploratory Comparisons of Participant Groups

Participants recruited through cloud connect ($M = 5.33$, $SD = 2.18$) and IBD support platforms ($M = 6.17$, $SD = 1.99$) reported similar levels of self-efficacy. The difference was not statistically significant, $t(87) = -1.76$, $p = .041$, Cohen's $d = 0.40$, 95% CI $[-0.05, 0.85]$.

Appendix G: Ethics

*Te Wānanga o Ngā Kete | Division of Arts,
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Dr Andrew Evelo

School of Psychological and Social Sciences
Psychology Programme

28 July 2025

Dear Maia

Re: FS2025-41: The Role of Self-Efficacy in the Relationship Between Self-Compassion and Coping Strategies in Individuals with Irritable Bowel Disease

Thank you for submitting an amendment to your approved application to the ALPSS Human Research Ethics Committee. Specifically, you requested extending recruitment pathways to Facebook, Reddit, Instagram and the online platform 'Stuff That Works'. We have reviewed the amendment, and the Committee is now pleased to offer formal approval for your research activities.

We encourage you to contact the committee should issues arise during your data collection, or should you wish to add further research activities or make changes to your project as it unfolds. We wish you all the best with your research. Thank-you for engaging with the process of Ethical Review.

Kind regards

Dr Amy Bird, Convenor
Division of Arts, Law, Psychology & Social Sciences Human Research Ethics

Appendix H: Pre-registration



The Impact of Self-Compassion Writing on Chronic Disease Self-Efficacy (#238709)

Author(s)

Maia Greenway (The University of Waikato) - mg364@students.waikato.ac.nz
Andrew Evelo (University of Waikato) - andrew.evelo@waikato.ac.nz

Pre-registered on:

2025/07/17 00:37 (PT)

1) Have any data been collected for this study already?

No, no data have been collected for this study yet.

2) What's the main question being asked or hypothesis being tested in this study?

"To what extent does self-compassionate reflection increase self-efficacy for chronic disease management in individuals with IBD." We expect self-compassion to increase with self-efficacy.

3) Describe the key dependent variable(s) specifying how they will be measured.

The key dependent variable is ratings of self-efficacy. Participants will be presented with the Self-efficacy Scale for Managing Chronic Disease (SESMCD), which asks participants to read six statements and choose the number that corresponds to their confidence that they can do the tasks regularly at the present time, where 1 = Not at all confident, and 10 = Totally confident (Lorig et al., 2001).

4) How many and which conditions will participants be assigned to?

Within subjects design, with 2 conditions. Both conditions will recall a negative event related to their IBD. The control condition will then make ratings on two validated scales: The Self-Compassion Scale - Short Form (SCS-SF; Raes et al., 2011) and the Self-Efficacy Scale for Managing Chronic Disease (SESMCD; Lorig et al., 2001). The experiment condition will follow three self-compassionate prompts (Adapted from Leary et al., 2007; Neff, 2003), before making ratings on the two validated scales listed above.

5) Specify exactly which analyses you will conduct to examine the main question/hypothesis.

Independent Samples t-test to determine whether the self-compassion writing task increases self-efficacy compared to the control condition. IV: Self-compassion DV: Self-efficacy (sum score for this scale).

If the assumptions regarding normality for the t-test aren't met, we will conduct a Wilcoxon signed -rank test.

We will also do some exploratory analyses on the scales, retesting their reliability and scale structure. We will conduct Pearson's correlations for this.

6) Describe exactly how outliers will be defined and handled, and your precise rule(s) for excluding observations.

Participants who don't complete the entire survey will be excluded.
Participants who provide a non-sensical description of the tasks they completed will be excluded.

7) How many observations will be collected or what will determine sample size? No need to justify decision, but be precise about exactly how the number will be determined.

100.

8) Anything else you would like to pre-register? (e.g., secondary analyses, variables collected for exploratory purposes, unusual analyses planned?)

We will also be collecting basic demographic information, and subjects will answer questions about whether they complied with our instructions, and describe the task they completed.