Enhancing Ambiguity Tolerance in Counsellors-in-Training: A Pilot Program
Améliorer la tolérance à l'ambiguïté chez les conseillers en formation : un programme pilote

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ABSTRACT

The inherent ambiguity of therapy is a significant source of stress for novice counsellors-in-training. As such, the development of their ability to tolerate ambiguity is an important task within their clinical development. The authors sought to examine the effects of a novel 6-week mindfulness and compassion program on ambiguity tolerance and well-being measures in counsellors-in-training working with clients for the first time. Twenty-three counsellors-in-training from across Canada completed measures of ambiguity tolerance, mindfulness, self-compassion, psychological distress, and life and work satisfaction at baseline, post-training, and 3-month follow-up. Participants also provided brief written feedback on the program to assess its feasibility and acceptability. Non-parametric analyses revealed significant increases in the epistemic dimension of ambiguity tolerance, overall meditative mindfulness, self-warmth, and life satisfaction at post-training and follow-up. All participants recommended this training to other students and reported increased knowledge of mindfulness, compassion, and ambiguity tolerance. Future studies should assess this program using a controlled design.

RÉSUMÉ

L'ambiguïté inhérente à la thérapie est une source importante de stress pour les conseillers novices en formation. Le développement de leur capacité à tolérer l'ambiguïté est donc une tâche importante dans le cadre de leur développement clinique. Les auteurs ont cherché à examiner les effets d'un nouveau programme de 6 semaines axé sur la pleine conscience et la compassion sur la tolérance à l'ambiguïté et les mesures de bien-être chez les conseillers en formation qui travaillent avec des clients pour la première fois. Vingt-trois conseillers en formation de partout au Canada ont rempli des mesures de tolérance à l'ambiguïté, de pleine conscience, d'autocompassion, de détresse

psychologique, et de satisfaction à l'égard de la vie et du travail au commencement de la formation, après la formation et après un suivi de 3 mois. Les participants ont également fourni de brefs commentaires écrits sur le programme afin d'en évaluer la faisabilité et l'acceptabilité. Des analyses non paramétriques ont révélé d'importantes augmentations de la dimension épistémique, de la tolérance à l'ambiguïté, de la pleine conscience méditative globale, de la chaleur personnelle, et de la satisfaction à l'égard de la vie après la formation et le suivi. Tous les participants ont recommandé cette formation à d'autres étudiants et ont fait état d'une meilleure connaissance de la pleine conscience, de la compassion, et de la tolérance à l'ambiguïté. Les futures études devraient évaluer ce programme à l'aide d'un modèle contrôlé.

Counsellors-in-training (CITs) are critical to the mental health care system. Not only will they fill roles as professionals and leaders in the future, but also, they help manage the growing and urgent demand for accessible therapy by providing services as part of their training. However, the nature of clinical training is immensely challenging, and the literature highlights its impacts on distress (e.g., burnout, compassion fatigue, depression, and stress; Kumary & Baker, 2008; Pakenham & Stafford-Brown, 2012; Richardson et al., 2020) and on the need for CITs to engage in self-care (Maranzan et al., 2018; Posluns & Gall, 2020; Thériault et al., 2015). When researchers have examined what might contribute to distress in CITs, the ambiguity of clinical work emerged as an important factor (Levitt & Jacques, 2005; Pica, 1998; Skovholt & Rønnestad, 2003).

Conceptualizations of ambiguity are not ubiquitous, but a common definition is that it reflects situations that are novel, complex, insoluble, and/or incomplete (Budner, 1962; McLain et al., 2015). They might be unfamiliar, be difficult to characterize, be open to interpretation, contain contradictory cues, and/or require more information for resolution. Given this definition, it becomes clear how the mental health profession is inherently ambiguous: (a) every client is unique, (b) there are numerous active variables to navigate within a session, (c) many ethical and effective methods exist for providing care, and (d) information is gathered and revealed over time such that clinicians often work with incomplete histories. While mental health professionals often have the confidence and the experience to manage ambiguity, CITs are developing such tolerance and are often unprepared for this process (Pica, 1998). They also face additional ambiguity as they try to obtain and apply clinical knowledge and skills, manage their reactions, and develop their professional identity simultaneously (Jahn & Smith-Adcock, 2017; Skovholt & Rønnestad, 2003).

How CITs respond to ambiguity is predicted by their ambiguity tolerance (AT; McLain et al., 2015). There are many definitions of AT, and there have been historical difficulties with distinguishing it from other concepts such as intolerance of uncertainty, uncertainty avoidance, and risk-taking propensity (Furnham & Marks, 2013; McLain et al., 2015). Most simply, it is a series of reactions toward

ambiguity that can range from attraction to rejection within the emotional (e.g., distress, excitement), cognitive (e.g., rigid thinking patterns, multiple perspectives), and behavioural (e.g., avoidance, approach) domains (Grenier et al., 2005). Lauriola and colleagues (2016) developed a measure of AT that identified three distinct dimensions of it: (a) *affective*, (b) *cognitive*, and (c) *epistemic*. The *affective* dimension refers to one's discomfort with ambiguity and the level of anxiety and distress one might feel toward an ambiguous situation. The *cognitive* dimension refers to one's level of rigidity and the use of moral absolutism, perspective narrowing, premature closure, or splitting in managing the cognitive complexity of ambiguity. Finally, the *epistemic* dimension refers to one's approach to novelty and complexity as well as one's acceptance of ambiguity.

AT is considered characteristic of seasoned therapists, with higher AT correlating with lower perfectionism and greater work satisfaction (Wittenberg & Norcross, 2001). It is also considered to be helpful in maintaining a stance of curiosity, openness, and flexibility toward clients, which may support more effective and ethical clinical interventions (Jennings et al., 2005). On the one hand, CITs' AT correlates positively with effective communication (Brams, 1961) and communication of empathy and respect (Jones, 1974). Furthermore, educators rated counsellors with higher AT as being more encouraging and effective in communicating with clients (Gruberg, 1969). Developing the ability to manage ambiguity can also be exciting and brings feelings of hope (Jahn & Smith-Adcock, 2017). On the other hand, when ambiguity becomes intolerable, CITs can become overwhelmed, and this may lead to anger, anxiety, confusion, fear, and self-doubt. CITs with lower tolerance may also experience greater anxiety when facing ambiguity and could reduce it through using more directive techniques (e.g., advising) in session and emphasizing a single perspective (Gruberg, 1969; McAuliffe & Lovell, 2006). In turn, this can impact how well CITs attend to their clients (Maguen, 1993; Pica, 1998).

The development of AT is a critical task of CITs and should be supported in clinical training (Levitt & Jacques, 2005). Qualitative research on this subject points to the importance of acceptance, engagement, and self-awareness. For example, Jahn and Smith-Adcock (2017) found that CITs coped with ambiguity by exploring multiple perspectives, engaging in positive self-talk, developing self-awareness, normalizing and preparing for ambiguity, and taking risks. Engaging and attending to ambiguity can also bring acceptance, meaning, and confidence (Boss, 2006). Other researchers have pointed to the importance of educators and supervisors addressing ambiguity by predicting and normalizing it in group discussions, sharing their experiences, and offering empathy, as well as encouraging reflective writing, student mentorship, and personal therapy (Jahn & Smith-Adcock, 2017; Levitt & Jacques, 2005; Pica, 1998; Skovholt & Rønnestad, 2003; Winborn & Martinson, 1965). In addition to these recommendations,

mindfulness and self-compassion have also emerged as promising strategies for cultivating AT (Bohecker et al., 2016; Christopher & Maris, 2010).

Mindfulness and Compassion

Generally, mindfulness and compassion training programs are supportive of trainees' self-care, stress reduction, and well-being (Rudaz et al., 2017; Spinelli et al., 2019). This is especially important for Canadian CITs given that self-care is a professional responsibility highlighted in the *Canadian Code of Ethics for Psychologists* (Canadian Psychological Association, 2017). However, self-care is still not sufficiently emphasized in graduate programs, and there is a need to earmark resources specific to the training context and to be proactive in teaching students about self-care (Maranzan et al., 2018).

Definitions of mindfulness vary (see Khoury et al., 2017), but Western conceptualizations of mindfulness generally fall into two schools. First, meditative mindfulness developed from Buddhist traditions and refers to a non-judgmental and purposeful manner of being alert, attentive, and aware of the present (Kabat-Zinn, 1991). Baer et al. (2006) offered a five-facet conceptualization that includes (a) observation of the present internal (e.g., thoughts, feelings, sensations) and external environments, (b) description of the present with words, (c) awareness of one's actions in the present, (d) non-judgment of thoughts and feelings, and (e) non-reaction toward thoughts and feelings through detachment. Meditation is used to develop a mindful practice, and it can be learned on its own or through programs that combine practice, teaching, and discussion. Second, Langer mindfulness is a socio-cognitive ability where one is actively and effortfully attending to the present, being open to novelty, creating new categories or perspectives, and being flexible toward the present by holding and shifting between multiple perspectives (Langer, 1989). Langer mindfulness tends to be induced through brief tasks that target one of its key components (e.g., producing novelty). For clinicians, Carson and Langer (2004) suggested methods to enhance mindfulness like using conditional language, considering paradoxes, and viewing a problem from different perspectives.

Definitions of compassion are also subject to debate due to shortcomings with its current conceptualization, the inclusion of mindfulness in its definitions, and unclear delineation between compassion toward oneself and compassion toward others (see Khoury, 2019). Neff (2003b) described self-compassion as being composed of three facets: (a) self-kindness (i.e., offering oneself understanding in the face of inadequacy), (b) common humanity (i.e., recognizing that suffering is a shared experience), and (c) mindfulness (i.e., attending to distressing emotions and cognitions without avoidance and overidentification). There are specific practices that cultivate self-compassion (e.g., self-compassion break, loving-kindness meditation), and, like meditative mindfulness, self-compassion has been taught through training programs.

Given the equivocal definitions and conceptualizations of both mindfulness and compassion, Khoury and colleagues developed the Embodied and Embedded Mindfulness and Compassion framework. This unified model conceptualizes mindfulness and compassion as having embodied (intrapersonal) and embedded (interpersonal) dimensions. Embodiment refers to the theory that affect, cognition, behaviour, and the body are connected to and affected by one another, with knowledge and experience being grounded in the body. Embodied mindfulness refers to self-regulated attention, awareness, and acceptance of present internal (i.e., emotions, cognitions, sensations) and external states (Khoury et al., 2017; Khoury et al., 2019), while embodied compassion refers to compassion toward oneself as a way of alleviating distress and suffering (Khoury, 2019; Khoury et al., 2019). The term *embedded* extends the definition of mindfulness and compassion into the interpersonal realm such that one is relating to other people and to the environment mindfully and compassionately (Khoury, 2018, 2019; Khoury et al., 2020; Khoury & Dionne, 2022; Khoury & Vergara, 2024c). Mindfulness definitions tend not to focus on the social context, but research shows that mindfulness has interpersonal implications (e.g., mindful parenting). Embedded compassion refers to compassion toward others. This skill involves learning both to accept compassion from others and to offer compassion through affective, cognitive, and behavioral elements (e.g., acting in an empathetic and non-judgmental manner).

Mindfulness and compassion are skills that can be taught and practised, making them important avenues for enhancing AT. Conceptually, they could impact each of the aforementioned dimensions of AT (Lauriola et al., 2016). For the *affective* dimension, when ambiguity is experienced as anxiety provoking, learning to detach mindfully from and accept one's emotional experience as well as offering kindness toward oneself can help manage distress. Furthermore, in learning to stay with these emotions and experiencing how the emotional intensity diminishes over time, counsellors can learn they do not need to avoid ambiguity. For the *cognitive* dimension, lower AT is characterized as a result of a practitioner adopting a rigid and dichotomous framework. In opposition, mindfulness and compassion support detachment from thoughts, thinking about oneself and others non-judgmentally, learning to hold and accept different perspectives, and staying open to novelty. Finally, for the *epistemic* dimension, mindfulness involves curiosity and seeking novelty and complexity. The common humanity component of compassion may also support seeing ambiguity as part of the human experience and a way of connecting to others. Perhaps this can also facilitate the acceptance of ambiguity.

There is some empirical research supporting the proposed links between AT, mindfulness, and compassion. Cross-sectional research suggests that meditative mindfulness, Langer mindfulness, and self-compassion have significant and positive correlations with AT (Fulton, 2016; Hitsuwari & Nomura, 2021; Ie et al., 2012; Spinelli et al., 2023). Christopher and Maris (2010) highlighted the

impact of an elective mindfulness course on counselling trainees' ability to manage emotional ambiguity (e.g., when they experience many different emotions at one time). Participants noted that they had become more open and flexible toward their experience and reported a greater ability to observe their inner states (i.e., emotions and thoughts). Creating space between observation and reaction increased AT and self-compassion. Furthermore, Bohecker et al. (2016) described the qualitative experiences of an 8-week mindfulness-based experiential group designed for CITs on increasing their ability to navigate ambiguity. They suggested a five-dimensional model for how participants learned to manage ambiguity through the group process: specifically, they (a) *experienced* fear and not knowing what would happen in the group, (b) *learned* new mindfulness skills, (c) *practised* mindfulness, (d) *integrated* mindful concepts intentionally into their way of being, and (e) *translated* their learned skills outside of the group.

These studies point to the potential for applying mindfulness toward AT development. However, more empirical evidence is clearly needed, and there are some important limitations to the current programs. The training used by Christopher and Maris (2010) is a full semester course, which may not be accessible for many graduate students. Bohecker and colleagues (2016) appeared to focus more on intrapersonal mindfulness, and their program description did not include any references to interpersonal mindfulness or to a discussion of compassion. The integration of mindfulness and compassion in training programs has been recommended given that it may enhance intervention effects (Conversano et al., 2020). In addition, the proposed methods of increasing AT suggest the importance of naming and discussing how ambiguity manifests in clinical work and training. It is unclear if this was directly addressed in either program.

The Present Study

We developed a 6-week training program based on the Embodied and Embedded Mindfulness and Compassion framework that directly addresses Canadian CITs' experience of ambiguity. To meet three research objectives, a concurrent nested design was used (Creswell et al., 2003). The predominant method was a quantitative repeated measures design with additional qualitative feedback obtained at post-training. During the analysis phase, the quantitative and qualitative components were assessed separately, and then the findings were considered together and integrated. First, we assessed the impact of the training on the primary outcome (AT), process outcomes (meditative mindfulness, Langer mindfulness, and self-compassion), outcomes related to distress (anxiety, depression, stress), and outcomes related to well-being (life and work satisfaction) at post-training and at the 3-month follow-up. Second, we aimed to examine the changes in participants' perceptions and practice of mindfulness and compassion from baseline to 3-month follow-up. Finally, we evaluated whether the training program met its goals by assessing quantitative changes in participants' reported

knowledge of key concepts and comfort using mindfulness and compassion from baseline to post-training and summarizing written qualitative feedback on the training from participants.

Methods

Participants

Twenty-seven students self-selected to participate in the study. They were eligible if they were (a) enrolled in a Canadian graduate program to become a licensed counsellor/therapist and (b) providing services to clients for the first time that school year. Four participants responded to baseline measures, but they withdrew before the training began (n = 3) or after the first session (n = 1). This left 23 participants who completed the study. All participants were offered pro-rated monetary compensation (up to $100).

Participants (22 women and 1 man) were between the ages of 23 and 44 years old (M = 29.04, SD = 6.46). Most participants identified as white (n = 13) and as unemployed (n = 16) and reported always or mostly having enough money to meet basic needs (n = 20). English was the mother tongue of most participants (n = 18), and most reported being able to speak another language (n = 13). Participants were attending 11 universities in 6 Canadian provinces (Alberta, British Columbia, New Brunswick, Ontario, Quebec, Saskatchewan) and were working to complete either a master's program (n = 19) or a doctoral program (n = 4) in counselling psychology (n = 18) or clinical psychology (n = 5). All participants had completed less than 2 years of their program with the majority being in their 1st year (n = 19).

With regards to their baseline mindfulness experience, most participants had experience practising mindfulness, meditation, or yoga (n = 19). Most reported having previously tried it, and they found it hard to do (n = 11), found it helpful (n = 7), found it very helpful (n = 2), or found it had changed their lives (n = 3). Some participants reported having started their practice in the past year (n = 8), others in the last 5 years (n = 8), and some between 5 and 10 years ago (n = 3). A few participants had never tried it, but they thought it was interesting (n = 3).

All participants received supervision in their clinical training. Of the 30 supervision experiences (19 in a group-based format and 11 in an individual-based format), participants reported that the supervision involved assigned readings (n = 13), reflective writing (n = 8), mindfulness practice (n = 3), self-care (n = 6), and discussion of topics beyond clinical work (n = 10). Some participants reported that supervisors addressed AT (n = 11), mindfulness (n = 15), self-compassion (n = 14), compassion toward others (n = 14), and/or self-care (n = 19). Most supervisions involved at least brief discussions on the topic of self-care (n = 21). However, approximately half of the supervisions did not involve discussion of AT

(n = 17), mindfulness (n = 15), self-compassion (n = 14), or compassion toward others (n = 14).

Measures
Mindfulness Experience
The researchers collected information on participants' mindfulness experience, including their level of knowledge, their practice of mindfulness, and the importance mindfulness has in their daily life.

Supervision Experience
The researchers collected information on participants' supervision experience (e.g., the number of supervisors as well as the level of exposure to and discussion of AT, mindfulness, compassion, and self-care).

Weekly Mindfulness Log
The researchers collected information weekly on participants' daily at-home mindfulness practice during the program. Participants were asked to record the duration and type of practice.

Program Evaluation
The researchers collected information on participants' knowledge of AT, mindfulness, and compassion as well as participants' comfort using mindfulness and compassion with clients at baseline and at post-training. Five items were measured on a 5-point Likert scale ranging from 1 (*not very knowledgeable/comfortable*) to 5 (*very knowledge/comfortable*). At post-training, participants were also asked to provide brief written feedback on the program (e.g., what they learned, liked, and would change). They also rated the engagement of the facilitator on a 5-point Likert scale ranging from 1 (*not engaging at all*) to 5 (*very engaging*) and stated whether or not they would recommend the program.

Primary Outcome
The three dimensions of AT were measured using the Multidimensional Attitudes Towards Ambiguity Scale, a validated measure consisting of 30 items (Lauriola et al., 2016). Participants rated their agreement with statements pertaining to how they respond when confronted with ambiguous situations on a 7-point Likert scale, ranging from 1 (*I strongly disagree*) to 7 (*I strongly agree*). A sample item is "It intensely disturbs me when I am uncertain of how my actions will affect others." It had adequate to good internal consistency across this study's time points for each dimension: *affective* (α = .79 to α = .84), *cognitive* (α = .79 to α = .83), and *epistemic* (α = .63 to α = .74).

Process Outcomes

Meditative mindfulness and its five facets were measured using the Five Facet Mindfulness Questionnaire-15, a validated measure consisting of 15 items (Baer et al., 2008; Gu et al., 2016). Participants rated how true they found statements pertaining to mindfulness on a 5-point Likert scale, ranging from 1 (*never or very rarely true*) to 5 (*very often or always true*). A sample item is "I find myself doing things without paying attention." It had adequate to good internal consistency across this study's time points for each facet: *observing* (α = .58 to α = .65), *describing* (α = .75 to α = .91), *acting with awareness* (α = .68 to α = .88), *non-judgment* (α = .71 to α = .86), and *non-reactivity* (α = .58 to α = .82).

Langer mindfulness was measured using the Langer Mindfulness Scale, a validated measure consisting of 14 items (Bodner & Langer, 2001; Pirson et al., 2012). Participants rated their agreement with items pertaining to novelty seeking, novelty producing, and engagement on a 7-point Likert scale, ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). A sample item is "I like to investigate things." It had good internal consistency across this study's time points (α = .70 to α = .82).

Self-compassion was measured using the Self-Compassion Scale, a validated measure consisting of 26 items (Neff, 2003a). While the original scale uses a single factor model, researchers now suggest utilizing a two-composite model (Gilbert et al., 2011; Per et al., 2022). Participants rated how often they behave in a way that is reflective of self-warmth (comprised of the self-kindness, common humanity, and mindfulness subscales) and self-coldness (comprised of the self-judgment, isolation, and overidentification subscales) on a 5-point Likert scale, ranging from 1 (*almost never*) to 5 (*almost always*). A sample item is "I try to see my failings as part of the human condition." It had good internal consistency across this study's time points for each composite: *self-warmth* (α = .89 to α = .90) and *self-coldness* (α = .86 to α = .89).

Participants also completed four measures based on the Embodied and Embedded Mindfulness and Compassion framework (the Embodied Mindfulness Questionnaire, the Interpersonal Mindfulness Questionnaire, and the Compassion Questionnaires Towards Self and Others). Given that these measures are undergoing validation, their results are presented in other manuscripts (e.g., Khoury, Vergara, Sadowski, & Spinelli, 2023; Khoury, Vergara, & Spinelli, 2022, 2023; Khoury, Vergara, Spinelli, & Sadowski, 2023a, 2023b; Khoury & Vergara, 2024a, 2024b).

Distress Outcomes

Anxiety, depression, and stress were measured using the Depression, Anxiety and Stress Scale-21, a validated measure consisting of 21 items (Lovibond & Lovibond, 1995). Participants rated the extent to which statements about their physical and emotional state applied to them over the past week on a 4-point

Likert Scale, ranging from 0 (*did not apply to me*) to 3 (*applied to me very much, or most of the time*). A sample item is "I couldn't seem to experience any positive feeling at all." Anxiety had adequate internal consistency across this study's time points (α = .56 to α = .65). Depression (α = .62 to α = .89) and stress (α = .68 to α = .80) had adequate to good internal consistency.

Well-Being Outcomes

Satisfaction with life was measured using the Satisfaction With Life Scale, a validated measure consisting of five items (Diener et al., 1985). Participants rated their agreement with statements about their life on a 7-point Likert scale, ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). A sample item is "In most ways my life is close to my ideal." This item had good internal consistency across this study's time points (α = .80 to α = .87).

Job satisfaction was measured using the Job Satisfaction Survey (Spector, 1985). Two of the nine dimensions were included and modified; specifically, *supervision* and *nature of work*. For *supervision*, participants first rated their agreement with four statements pertaining to their perception of their primary clinical supervisor. The items were then repeated, but participants rated them based on their research supervisor, if they had one. For *nature of work*, participants rated their agreement with statements about their enjoyment of work. The four items originally used the word "job," which was replaced with "work as a clinician." The 12 items were rated on a 6-point Likert Scale, ranging from 1 (*disagree very much*) and 6 (*agree very much*). A sample item is "My clinical supervisor is quite competent in doing his/her job." These items had good internal consistency across this study's time points: c*linical supervision* (α = .81 to α = .88), *research supervision* (α = .91 to α = .96), and *nature of work* (α = .74 to α = .75).

Mindfulness and Compassion Training Program

The program aimed to enhance AT in novice clinicians through mindfulness and compassion training as conceptualized by the Embodied and Embedded Mindfulness and Compassion framework. The first and third authors collaborated on the design and tailored it for CITs. Feedback was provided by two psychologists with significant supervision experience. The 6-week program (90 minutes each session) was initially designed to be in person, but it was moved online due to the pandemic. Three groups were held across 2 semesters and were facilitated by the first author on Zoom.

The main goals of the program were (a) to teach and encourage participants to practise mindfulness and compassion, (b) to discuss ambiguity in the field of counselling and in participants' daily lives, (c) to provide a space in which to discuss and reflect on participants' experiences as new counsellors, and (d) to discuss the practical and clinical applications of mindfulness- and compassion-based practices. A brief description of the 6-week syllabus can be found in Table 1.

Table 1

Description of the Weekly Activities in the Mindfulness Training Program

Sessions began with a discussion about participants' daily practice and the assigned reading. Each week centred on a core concept explored through discussion and meditations. There were at least two meditations per session (see examples below).

Week 1	**Introduction to ambiguity tolerance, mindfulness, and compassion**
	Emotions—their nature and functions: *Developing skills to manage and accept difficult or distressing emotions.*
	Guiding questions: When I think of my experience as a graduate student and counsellor-in-training, what emotions come up for me? How do I identify and manage my emotions?
	Exercise: Breathing meditation.
Week 2	**Embodied mindfulness:** *Developing awareness of the mind–body connection and toward one's internal/external states.*
	Guiding questions: What is my experience of ambiguity in graduate school? When I think about such experiences, how do I feel? How do I react?
	Exercise: Observing thoughts non-judgmentally.
Week 3	**Embodied compassion:** *Developing a pattern of self-kindness, non-judgmental and compassionate thinking, and self-care.*
	Guiding questions: What expectations do I hold for myself as a counsellor-in-training? What expectations do I hold as a graduate student? How do I feel when considering these expectations?
	Exercise: Loving-kindness meditation.
Week 4	**Mindfulness and compassion in interpersonal relationships:** *Developing skills to be anchored in the body during interactions as well as giving and receiving compassion.*
	Guiding questions: How do I feel about working with clients? What counselling qualities and skills do I have? What skills do I anticipate wanting to develop?
	Exercise: Walking meditation.
Week 5	**Mindfulness and compassion in the environment and self-transcendence:** *Developing a flexible professional identity, fostering common humanity, and practising gratitude toward the external environment.*
	Guiding questions: How do I define myself? What do I value?
	Exercise: Gratitude through the five senses.
Week 6	**Summarizing activities and concepts from previous weeks.**
	Guiding questions: Reflecting on these past weeks, what have I learned about mindfulness and compassion? What have I learned about managing ambiguity? What questions do I still have?
	Exercise: Meditation for times of transition and change.

Between sessions, participants were encouraged, but not required, to engage in daily at-home mindfulness exercises (e.g., breathing meditations) and to complete reflections and readings. They were provided a reflective journal that contained a weekly suggested reading, reflective writing prompts (used to guide in-session discussions), links to meditations, and other relevant resources. Between the

post-training and the 3-month follow-up, three emails (once per month) were sent to participants containing additional mindfulness resources.

Procedure

Participants were recruited from universities across Canada through advertisements on social media (e.g., Facebook), emails sent via university resources (e.g., program listservs), and brief presentations. The study was initially approved by the authors' university research ethics board (REB). Other university REBs were contacted to request approval/acknowledgement for recruitment. Once these approvals were obtained, relevant programs were emailed about sharing recruitment materials. Interested students emailed the researchers, who confirmed their eligibility.

Participants provided informed consent and were asked to complete self-report outcome measures at baseline, at post-training, and at the 3-month follow-up. The primary, process, distress, and well-being outcomes were assessed at all time points. Information on socio-demographics and supervision experiences were obtained at baseline. Participants also responded to questions about their mindfulness experience at baseline and at the 3-month follow-up and provided reports of their weekly practice. Finally, participants evaluated the program by providing brief feedback at baseline and at post-training. All data were collected using LimeSurvey.

Data Analyses

Means were calculated such that responses from participants who did not complete at least 80% of the items within each variable were excluded. Listwise deletion was used to omit missing data, and univariate outliers (± 3.5 SD) were removed. Normality was measured by the Shapiro-Wilk's test, and the outcomes were inconsistent in conforming to this assumption across time points. This is unsurprising as the outcomes being measured are trainable skills or distress measures that can produce skewed distributions. As a result of this outcome, combined with the small sample size, we elected to use a non-parametric approach. All quantitative analyses comparing post-training and follow-up to baseline were performed using Wilcoxon signed-rank tests. The methodological process of summarizing brief participant feedback generally lacks clarity in the literature (Decorte et al., 2019). Our process was guided by the steps of a thematic analysis approach (Clarke & Braun, 2013). The first and second authors familiarized themselves with the participants' brief written statements and then separated each sentence. They then used an open, inductive process to code each line and then grouped the codes into key themes/topics. They reviewed the themes/topics several times to ensure the statements were described accurately. They then noted the number of times each code appeared across participants. Analyses were conducted using IBM SPSS (Version 27).

Reflexivity Statement

The first and second authors were involved in analyzing the qualitative feedback. To reduce bias and encourage honesty, participants provided brief written responses to questions about what they took away from the training, what they liked, and what they would change about the program when completing post-training measures. This information was not linked to their outcome data, and the participants generated their own alphanumeric ID so that the identity of who had provided what feedback remained unknown to the researchers. The first author developed and facilitated the training program, and she was also a CIT with four years of clinical experience. Prior to conducting the study, she had hoped that the training would be successful and had expectations of what the participants would take away from the program as she had set the program objectives. The second author was an undergraduate research assistant who had worked with the first author previously. She aided in managing some of the administrative components of the study but did not meet with the participants or attend the training (she interacted with participants only through email). The second author was not involved in developing the program, but she was knowledgeable about the background research and the program objectives. She held similar expectations about the success of the training as the first author.

Results

Program Effects on Main Outcomes

Wilcoxon signed-rank tests were used to assess changes in the measured outcomes from baseline to post-training and from baseline to follow-up. Mean values and standard deviations for all outcomes at each time point as well as the Wilcoxon signed-rank test statistics and non-parametric effect sizes (rank-biserial correlation; r) can be found in Table 2. Alpha level was set at 0.025 after a Bonferroni correction was applied to account for the two comparisons.

Primary Outcome

Significant increases were found at post-training (Z = -2.40, p = 0.017, r = 0.35) and at follow-up (Z = -2.98, p = 0.003, r = 0.44) with medium to large effect sizes for the *epistemic* dimension of AT. A decreasing trend was also found at post-training (Z = -2.21, p = 0.027, r = 0.33) and at follow-up (Z = -2.14, p = 0.032, r = 0.32) for the *cognitive* dimension. No significant changes were found for the *affective* dimension.

Process Outcomes

The three process outcomes (meditative mindfulness, Langer mindfulness, and self-compassion) showed benefit-consistent increases at post-training, with effects persisting to follow-up. Of the five facets of meditative mindfulness, only

Table 2
Statistics of the Wilcoxon Signed-Ranked Tests for All Outcomes

Range of internal consistencies (Cronbach's alpha), means, SDs, Z, p values, and rank-biserial correlation (r) are listed.

Outcomes	n	Baseline Mean (SD)	Post-training Mean (SD)	Follow-up Mean (SD)	Baseline to post-training			Baseline to follow-up		
					Z	p value	Effect size (r)	Z	p value	Effect size (r)
Affective	23	4.59 (1.00)	4.37 (.83)	4.29 (.80)	-1.32	.188	.19	-1.61	.107	.24
Cognitive	23	2.67 (.79)	2.43 (.73)	2.46 (.78)	-2.21	.027	.33	-2.14	.032	.32
Epistemic	23	4.49 (.64)	4.73 (.62)	4.84 (.66)	-2.40	.017*	.35	-2.98	.003*	.44
Observing	23	3.10 (.66)	3.48 (.69)	3.52 (.59)	-2.83	.005*	.42	-3.14	.002*	.46
Describing	23	3.54 (.81)	3.72 (.66)	3.74 (.82)	-1.21	.227	.18	-1.06	.290	.16
Acting with awareness	23	2.72 (.72)	3.04 (.58)	3.06 (.63)	-2.28	.023*	.34	-2.25	.024*	.33
Non-judging	23	3.78 (.58)	4.03 (.63)	4.20 (.63)	-2.00	.046	.29	-2.65	.008*	.39
Non-reactivity	23	2.86 (.66)	3.16 (.50)	3.33 (.55)	-1.99	.046	.29	-2.87	.004*	.42
Meditative mindfulness	23	3.20 (.38)	3.49 (.33)	3.57 (.36)	-3.35	.001*	.49	3.81	<.001*	.56
Langer mindfulness	23	5.24 (.51)	5.39 (.66)	5.43 (.64)	-1.67	.094	.25	-2.15	.032	.32
Self-warmth	23	3.13 (.65)	3.51 (.66)	3.52 (.63)	-2.73	.006*	.40	-2.84	.004*	.42
Self-coldness	23	3.20 (.68)	2.89 (.62)	2.65 (.63)	-2.96	.003*	.44	-3.64	< .001*	.54
Anxiety	23	.51 (.40)	.43 (.33)	.44 (.34)	-1.08	.282	.16	-.94	.348	.14
Depression	23	.66 (.59)	.50 (.45)	.48 (.31)	-1.60	.110	.24	-1.13	.259	.17
Stress	23	.97 (.60)	.70 (.45)	.73 (.39)	-2.22	.027	.33	-2.50	.012*	.37
Satisfaction with life	23	4.39 (1.27)	5.21 (.97)	5.21 (1.16)	-3.31	< .001*	.49	-3.46	< .001*	.51
Clinical supervision	22	5.67 (.57)	5.44 (.89)	5.47 (.91)	-1.94	.053	.29	-1.38	.166	.20
Research supervision	10	5.10 (1.39)	4.98 (1.53)	4.95 (1.54)	-1.41	.157	.21	-.96	.336	.14
Nature of work	21	5.26 (.64)	5.30 (.71)	5.39 (.65)	-.18	.857	.03	-1.46	.145	.22

Note. *p < .025. A small effect size (r) is .1, a medium is .3, and a large is .5.

describing did not show a significant change at either time point. Significant increases were found for the *observing* facet at post-training (Z = -2.83, *p* = 0.005, *r* = 0.42) and at follow-up (Z = -3.14, *p* = 0.002, *r* = 0.46) and for the *acting with awareness* facet at post-training (Z = -2.28, *p* = 0.023, *r* = 0.34) and at follow-up (Z = -2.25, *p* = 0.024, *r* = 0.33) with medium to large effect sizes. *Non-judging* and *non-reactivity* showed benefit-consistent trends at post-training but significant increases at follow-up with medium to large effect sizes (*non-judging*: Z = -2.65, *p* = 0.008, *r* = 0.39; *non-reactivity*: Z = -2.87, *p* = 0.004, *r* = 0.42). Langer mindfulness showed an increasing trend at follow-up (Z = -2.15, *p* = 0.032, *r* = 0.32). Finally, both dimensions of self-compassion showed significant benefit-consistent changes at post-training (*self-warmth*: Z = -2.73, *p* = 0.006, *r* = 0.40; *self-coldness*: Z = -2.96, *p* = 0.003, *r* = 0.44) and at follow-up (*self-warmth*: Z = -2.84, *p* = 0.004, *r* = 0.42; *self-coldness*: Z = -3.64, *p* < .001, *r* = 0.54) with medium to large effect sizes.

Distress Outcomes

A decreasing trend was found for stress at post-training (Z = -2.22, *p* = 0.027, *r* = 0.33), and there was a significant decrease with a medium effect size at follow-up (Z = -2.50, *p* = 0.012, *r* = 0.37). No significant changes were found for anxiety and depression.

Well-Being Outcomes

Significant increases in satisfaction with life were found at post-training (Z = -3.31, *p* < .001, *r* = 0.49) and at follow-up (Z = -3.46, *p* < .001, *r* = 0.51) with large effect sizes. No significant changes were found for the three subscales of job satisfaction.

Program Effects on Participants' Mindfulness Practice

Prior to participating in the program, most participants reported practising mindfulness less than once per week (*n* = 12). Some reported practising one to three times per week (*n* = 6) or more than once daily (*n* = 1). The duration of each practice varied, with some participants practising for under 10 minutes (*n* = 11), others for 10 to 25 minutes (*n* = 4), for 25 to 40 minutes (*n* = 3), or for over an hour (*n* = 1). When asked how important mindfulness is in their daily life, half of the participants reported it had little to no role (*n* = 12), while some found it to be somewhat important (*n* = 8) or important (*n* = 3).

During the program, participants were asked to report on their daily mindfulness practice. On average, participants practised for 9.85 minutes/day (*SD* = 10.93, range = 2.22 to 48.89). Participants reported engaging in various meditations (e.g., breathing, body scan, gratitude), self-compassion practices (e.g., loving-kindness meditation, soothing touch), and movement-based meditations

(e.g., walking meditation, yoga). Some participants also reported engaging in informal practice (e.g., while driving or while brushing their teeth).

At follow-up, many participants reported using mindfulness (n = 17) and compassion (n = 20) with clients as well as practising mindfulness in their own lives (n = 19). Of the 19 participants who reported having continued their practice of mindfulness, over half reported practising one to three times per week (n = 12). Some practised four to six times per week (n = 2) or more than once daily (n = 3). Two reported practising less than once per week. The duration of their practice exercises varied with some practising for 5 to 10 minutes (n = 8) each time and others for 10 to 25 minutes (n = 10) or for 40 to 60 minutes (n = 1). When asked about the importance of mindfulness in their daily lives, most reported some level of importance: specifically, somewhat important (n = 11), important (n = 6), or very important (n = 2). Finally, 13 participants took part in another mindfulness training after the program.

Program Evaluation

All participants recommended the program and found the facilitator engaging (M = 4.70, SD = 0.56 on a 5-point Likert scale). Wilcoxon signed-rank tests were used to assess changes from baseline to post-training. Mean values and standard deviations at each time point as well as test statistics and effect sizes can be found in Table 3. Significant increases with medium to large effect sizes were found as participants reported greater knowledge of AT (Z = -3.99, p < .001, r = 0.59), mindfulness (Z = -3.80, p < .001, r = 0.56), and compassion (Z = -3.23, p = 0.001, r = 0.48) along with more comfort using mindfulness (Z = -3.84, p = < .001, r = 0.58) and compassion (Z = -2.77, p = 0.006, r = 0.42) with clients.

Participants were asked to note three things they took away from the training. These can be summarized into four key themes: (a) ambiguity, (b) mindfulness and compassion, (c) clinical work, and (d) personal impact. First, 18 participants commented on learning about ambiguity (n = 8), understanding that ambiguity is normal in this field and there is a need to accept/tolerate it (n = 7), and learning to accept and tolerate ambiguity (n = 6). Second, 20 participants commented on learning about mindfulness and compassion. They shared learning about their key concepts (n = 9), their benefits and importance (n = 4), different types of meditations (n = 4), and how mindfulness can be incorporated in everyday life (n = 3). Four participants also noted how they gained new exercises and resources. Third, nine participants wrote about clinical work. They noted how their training and engagement in mindfulness and self-care can impact the therapeutic relationship, efficacy, and presence with clients (n = 4). Five participants also shared how the program positively impacted their discussion and use of mindfulness and compassion with clients. Finally, 12 participants described how the training impacted them on a personal level. Participants noted becoming more accepting

Table 3

Statistics of the Wilcoxon Signed-Ranked Tests for Participants' Perceptions of Their Knowledge of Ambiguity Tolerance, Mindfulness, and Compassion and Their Comfort Using Mindfulness and Compassion With Clients

Means, SDs, Z, p values, and rank-biserial correlation (r) are listed.

			Baseline	Post-training		Baseline to post-training	
Participant perceptions of their:		*n*	Mean (*SD*)	Mean (*SD*)	*Z*	*p* value	Effect size (*r*)
	Ambiguity tolerance	23	2.13 (.97)	3.78 (.52)	-3.99	< .001*	.59
Knowledge	Mindfulness	23	2.61 (.94)	3.70 (.56)	-3.80	< .001*	.56
	Compassion	23	3.04 (.83)	3.74 (.69)	-3.23	.001*	.48
Comfort using their knowledge with	Mindfulness	22	1.95 (.95)	3.45 (.67)	-3.84	< .001*	.58
clients	Compassion	22	2.91 (1.31)	3.68 (.78)	-2.77	.006*	.42

Note. * p < .05. A small effect size (r) is .1, a medium is .3, and a large is .5.

and compassionate toward themselves (n = 6), and they discussed their personal use and experience of different meditations (n = 8).

When asked what they liked about the program, participants addressed four topics: (a) the program organization, (b) learning about mindfulness, (c) the facilitator, and (d) the group. First, participants shared that they liked the program materials (i.e., readings and journal; n = 3), the organization of the topics (n = 2), and the manageable time commitment (n = 2). Second, 12 participants wrote about mindfulness and compassion. They described that they liked learning about the topics (n = 9), being exposed to different exercises and resources (n = 5), and having the time to practise the exercises in session (n = 3). Third, eight participants shared that they found the facilitator knowledgeable, open, and engaging. Finally, 19 participants wrote about liking various aspects of the group experience. They commented on the cohesiveness, supportiveness, and/or safety of the group (n = 6) as well as on the opportunity to connect with a community of other graduate students (n = 8). Having this group connection was noted to help validate and normalize the counsellor-in-training experience (n = 5). Participants also mentioned liking the group discussions and being able to share and hear different perspectives (n = 11).

With regards to what they would change, three participants suggested changing the length of the program (either making it an hour per week or having fewer sessions) and three participants noted difficulty connecting and focusing over Zoom. Three participants highlighted difficulties with keeping up with the weekly readings, and a suggestion was made to include summaries at the start of each session. Six participants offered feedback on session activities, noting that they wanted more exposure to other types of meditation and greater in-session mindfulness practice (n = 3) as well as more activities that can support understanding of how to use mindfulness with clients and how to combine it with other approaches (n = 3).

Discussion

Program Effects on Main Outcomes

With regards to the primary outcome of AT, participants had significantly greater tolerance of and an approach-oriented attitude toward situations with novelty and complexity following training and showed a trend toward a reduction in moral absolutism and splitting. In the qualitative studies examining mindfulness training and AT, reduction of reactivity and the need to impose structure as well as greater openness and curiosity were noted by participants (Christopher et al., 2011; Christopher & Maris, 2010). Furthermore, Jahn and Smith-Adcock (2017) conducted a phenomenological study of how CITs experience ambiguity and highlighted how they learn to manage ambiguity through accepting and valuing

it as well as practising cognitive reframing and viewing ambiguity as flexible. These statements are more reflective of the *cognitive* and *epistemic* dimensions.

The insignificant findings for the *affective* dimension perhaps reflect the idea that feelings of discomfort are (a) more difficult to change and (b) not meant to be changed from a mindfulness perspective. Ambiguity is anxiety provoking, and there may always be some level of fear associated with it (Hirsh et al., 2012). Jahn and Smith-Adcock (2017) highlighted how CITs described ambiguity with strong language (e.g., "torture"). Even when discussing positive emotions associated with ambiguity, they tended to be mixed with more distressing ones (e.g., feeling both intimidated and excited). From a mindfulness perspective, the goal would not be to change or remove these feelings, but rather to see them as transient, to observe them from a non-reactive and non-judgmental lens, and to accept them. Perhaps with the attention paid to such reactions, one might also become even more aware of how threatening ambiguity can feel. Although this is beyond the scope of the current study, we propose that enhancing the other dimensions of AT may eventually have an impact on the *affective* dimension. As individuals develop greater awareness of the positive emotions that can also accompany ambiguity and have more rewarding experiences with ambiguity through seeking it, this may reduce the threat of ambiguity. It would be interesting to explore changes in dimension scores, which could elucidate a framework for how AT develops in CITs over the course of their training.

To our knowledge, there had been one other quantitative study that examined the impact of a mindfulness training program on AT. Brendel et al. (2016) conducted a quasi-experimental study where business leaders who participated in an 8-week mindfulness meditation training (45 minutes per week) in addition were compared to a control group of business professionals enrolled in a leadership course. They did not find a significant change in AT and suggested the training may have been too short. However, another important difference lies in the program design. Studies showing AT enhancement through mindfulness utilize a more comprehensive program, so perhaps meditation alone is not enough. Future randomized controlled trials could compare the current program to meditation-only programs and control conditions.

Since the training program sought to teach and cultivate a practice of mindfulness and compassion, it was necessary to assess whether participants experienced changes in these process outcomes. Immediately following training, participants appear to have been better able to attend to their present internal and external states (*observing*) and not respond or behave in an automatic manner (*acting with awareness*), as well as be more compassionate in how they respond to themselves (*self-warmth*) and less critical in their self-response (*self-coldness*). Over time, they also became more accepting of inner experiences (*non-judging*) and better able to detach from them and respond in an unbiased manner (*non-reactivity*).

Taken together, these results support the claim that the program was successful in increasing mindfulness and compassion. These findings are consistent with other studies (e.g., Aggs & Bambling, 2010; Chan et al., 2021; de Vibe et al., 2018; Shapiro et al., 2007). It is important to note that our program is shorter than many reported in the literature. Programs based on the highly prevalent Mindfulness Based Stress Reduction program (Kabat-Zinn et al., 1985) as well as the Mindful Self-Compassion program (Neff & Germer, 2013) tend to be 8 weeks long and consist of 2-hour sessions and a retreat (amounting to over 20 hours of training). Our training is 9 nine hours in total, and like other studies with shorter trainings (e.g., Swift et al., 2017), there were still significant changes in process outcomes. This suggests that shorter trainings may still be beneficial while also being practical for student schedules.

Regarding variables related to distress and well-being, a reduction in stress was found along with an increase in satisfaction with life. These are consistent with findings in other studies examining a mental health trainee sample (e.g., Collard et al., 2008; Hopkins & Proeve, 2013; Shapiro et al., 2007) and what has been found in meta-analyses (e.g., Spinelli et al., 2019). This suggests that the current training is comparable to other mindfulness-based interventions, even though the primary focus was on enhancing AT. Benefit-consistent changes in anxiety and job satisfaction were hypothesized but not found. This is likely due to participants' baseline means already being in a normal to mild range for anxiety and demonstrating their satisfaction with their supervisors and their work. The variables examined in this study are standard, and future studies may be interested in exploring other important aspects of well-being (e.g., basic psychological needs satisfaction, eudemonic well-being, happiness, emotion regulation). It would also be of interest to explore how this program impacts clinical work; for example, it could assess the effects of the training on empathic listening as well as therapeutic presence and alliance from the perspectives of both trainees and their clients. There has been some research examining how therapists' mindful practices impact clients (Grepmair et al., 2007; Swift et al., 2017), but findings are equivocal and further research is needed (Davis & Hayes, 2011).

Program Effects on Participants' Mindfulness Practice

Because the training focused on mindfulness and compassion, it was necessary to examine its effects on participants' practices. There were some important shifts noted from baseline to the 3-month follow-up. First, participants reported practising mindfulness more often and for longer durations. Second, while half of the participants reported mindfulness having little to no role in their lives at baseline, most were now reporting that mindfulness had at least some level of importance in their daily lives. Third, over half of the participants attended additional training after the program was completed. This suggests the program had some impact on participants' perceptions and practice of mindfulness.

During the program, participants had an average practice of about 10 minutes per day. Although this study compares with other intervention studies (e.g., Shapiro et al., 2007), it is much less than requirements of standard mindfulness programs (usually 30 to 45 minutes daily). Furthermore, small but significant associations between home practice and outcome have been found (Parsons et al., 2017). We did not emphasize a specific amount for home practice given that we recognized that trainees are very busy; specifying homework may put more pressure on them and perhaps even increase self-judgment for not completing the exercises. Rather, we hoped practice would develop organically as a result of facilitator encouragement and other participants sharing their experiences. Given that most participants continued to practise mindfulness and to seek additional training and that there were improvements in mindfulness, self-compassion, and well-being, this approach may be more suitable for this population in the long term. It may be of interest to explore how the amount of homework can affect both study outcomes and long-term cultivation of a mindful and compassion-based practice.

Program Evaluation

The participants' feedback about the program suggests that it succeeded in its main objectives. First, the training sought to teach and encourage participants to practise mindfulness and compassion. Quantitatively, participants perceived themselves to have greater knowledge of both concepts compared to what they had at baseline. Many participants also highlighted learning about mindfulness and compassion and the personal impact of meditation practice as a key takeaway from the training and something they enjoyed. Second, the training sought to increase discussion of ambiguity and its impact on counselling and daily life. Participants reported greater knowledge of AT at post-training and highlighted learning about ambiguity and understanding the importance of learning to tolerate it as key takeaways from the training. Third, the training sought to offer a space for participants to reflect on their experiences as graduate students and clinical trainees. Participants discussed how the group normalized their experience as trainees and noted that they felt safe and connected with other graduate students. Finally, the training aimed to open discussion about the clinical applications of mindfulness and compassion. Participants quantitatively reported greater comfort with using mindfulness and compassion with clients and wrote about how the training had a positive impact on their exploration of mindfulness and compassion with clients. They also noted learning about how their practice of mindfulness can impact therapy. Taken together, the program appears to be feasible and acceptable to participants for increasing knowledge of AT, mindfulness, and self-compassion as well as enhancing self-care.

Limitations and Future Directions

There are several important limitations to this pilot study. First, the training was conducted solely by the first author, and facilitator effects would be an important confound. Second, the first author and the third author developed outlines for the material to be covered each session, the questions to be explored, and the meditations to be practised. While the first author aimed to create consistency between groups and can state anecdotally that she covered the relevant material, we did not assess treatment integrity actively or objectively. Third, there is an increase in the familywise error rate due to the multiple statistical analyses. We did not control for this due to the small sample and the preliminary nature of the study. Fourth, the measures consisted largely of self-reports and were not specific to the population or to the training framework. Given that CITs' experience of ambiguity is unique, it would be important to develop a measure that is specific to this population. Hancock et al. (2015) developed a measure of AT for medical students, and this had been further adapted for veterinary students (Hammond et al., 2017). This measure can be adapted for counselling trainees and can further reference secondary attributes of ambiguity tolerance applied to the counselling context (e.g., prejudice, aggression; Bochner, 1965). Finally, there are considerations concerning generalizability. On the one hand, the sample is small and predominantly female, which minimizes generalizability. On the other hand, one strength of the study is that we included students from across Canada. As such, it would be advisable for future studies to include larger samples of participants of diverse intersecting identities that reflect the broader Canadian counselling field as well as to continue engaging in cross-country recruitment.

The training also used a novel framework of mindfulness and compassion for which specific measures are currently being validated. Future studies can also include behavioural measures of mindfulness (e.g., breath counting; Levinson et al., 2014) and AT (e.g., judging ambiguous faces and art; Sagioglou & Forstmann, 2013). State measures before and after each weekly session could also help assess whether participants were more mindful during the session. An uncontrolled design was used, and we were not able to control for confounding factors. We would expect that AT increases over the course of clinical training and most participants reported participating in additional mindfulness training between post-training and follow-up. Conducting a randomized control trial may help to account for these issues, and further analyses could examine the impact of additional training.

Impacts and Conclusion

The current study examined a novel framework of mindfulness and compassion and explored its application to cultivating AT in CITs across Canada. This program is creative in its design, addresses ambiguity in clinical training directly, and focuses on the experience of CITs. The importance of this work is highlighted

by participants reporting that AT was not being addressed or discussed within their supervisions. Furthermore, the impact of this program on stress and life satisfaction and the observation that many participants persist in their mindfulness practice suggest that it can be an avenue for promoting self-care. In terms of participant responses about supervision, only 20% included self-care as a component of the course and 13% reported discussing self-care often in supervision. This highlights the need for programs that help CITs engage proactively in self-care. Preliminary quantitative findings are supported by remarks by participants who highlighted the impact of their training on their knowledge of AT, mindfulness, and compassion as well as on feeling validated and supported by their peers in their experience as students. The program appears to be a feasible addition to student schedules, and it seems to have aided participants in their clinical work. Ambiguity tolerance was first discussed in the 1950s and the impact of it on CITs was first established in the literature in the 1960s, which suggests there has been a long-awaited need for empirical studies on AT enhancement strategies. Although further research is required, this pilot study is another step in answering this call.

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