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Evaluating the Effectiveness of Self-Compassion Training With Disability Support Staff

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**EVALUATING THE EFFECTIVENESS OF SELF-COMPASSION TRAINING WITH
DISABILITY SUPPORT STAFF**

A Master's Thesis

Presented to

The Graduate College of
Missouri State University

In Partial Fulfillment

Of the Requirements for the Degree

Master of Science, Applied Behavior Analysis

By

Jessica M. Venegoni

August 2022

EVALUATING THE EFFECTIVENESS OF SELF-COMPASSION TRAINING WITH DISABILITY SUPPORT STAFF

Psychology

Missouri State University, August 2022

Master of Science

Jessica M. Venegoni

ABSTRACT

The current study sought to evaluate the effectiveness of self-compassion training with disability support staff concurrently completing their college education for career advancement. The intervention was guided by a combined Acceptance and Commitment Therapy (ACT) and Self Compassion training framework. The ACT Matrix was utilized within the study prior to intervention to determine values within self-compassion and to identify three behaviors to target within the weekly self-compassion training, and daily behavior report (Polk and Schoendorf, 2014). During the intervention phase, daily reported self-compassion behaviors and weekly reported self-compassion scores were collected (Neff, 2003a; Belisle et al., 2022), as well as their perceived social validity, and daily engagement in self-identified self-compassion behaviors via ecological momentary assessments (EMA) were collected. Self-Compassion Scale (SCS) and social validity scales were also utilized. We utilized a withdrawal single-subject research design to evaluate the efficacy of the intervention. Results, for two of the four participants, demonstrated the percent exceeding the median (PEM) score exhibits a moderate effect size. Data suggests that there was a moderate change in self-compassion participation during training weeks, and participants positively reported the advantageous effects of training on both psychological and work well-being. The data does indicate, however, that as the demand for practicing self-compassionate behaviors increases when experiencing hardships, there may be a simultaneous increase in the movement away from the practice of behaviors due to possible psychological rigidity.

KEYWORDS: self-compassion, behavior, mindfulness, disability, support, staff, training, well-being, ecological, momentary

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In the interest of academic freedom and the principle of free speech, approval of this thesis indicates the format is acceptable and meets the academic criteria for the discipline as determined by the faculty that constitute the thesis committee. The content and views expressed in this thesis are those of the student-scholar and are not endorsed by Missouri State University, its Graduate College, or its employees.

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INTRODUCTION

Psychological and Behavioral Health Challenges of Support Staff and Students

According to the National Alliance for Mental Illness (NAMI, 2022), 1 in 5 adults in the United States will experience a mental health issue each year. The increase of mental health disorders and issues is at a continuous rise, and yet over half of adults with a mental illness do not receive any treatment for such disorders, which totals over 27 million adults in the United States alone, as noted by *The State of Mental Health in America*. The mental health crisis has affected the demand of psychologists and their services, and 68% of psychologists have had their waitlist double in size since the beginning of the 2020 pandemic, as well as over 40% being unable to meet the demand for treatment, causing greater stress on practitioners (Bethune, 2021). The demand for mental health services has increased due to the recent COVID-19 pandemic (Kumar & Nayar, 2020).

The pandemic along with daily routine work can bring about multiple challenges for anyone, particularly support staff working with intellectually disabled people, which introduces enormous strain and compromise on these employees' mental well-being and health (Ryan, Bergin & Wells, 2019; Sheerin et al., 2022). Work-overload, limited participation in client decision-making, and client care are associated with increased burnout amongst intellectual disability (ID) support staff (Gray-Stanley & Muramatsu, 2011). Vassos and colleagues (2017) found that high workload, low control, and low colleague support is related to higher burnout and lower engagement experienced by ID support staff.

Therapy is often unaffordable for many in the field of ID support work and others, due to the rejection of insurance plans from more than half of licensed psychiatrists (Bishop et al.,

2014). In recent research surrounding the pandemic, healthcare workers have been a target of study, however, Sheerin (2022) acknowledges that there has been minimal work conducted on the mental health and well-being of staff working with people with intellectual disabilities. Lam and others (2021) demonstrate that within research amongst ID support staff there is minuscule evidence detailing the process of support staff recruitment, there are minimal weaknesses outlined when involving support staff in research, and very few recommendations for successful engagement with ID support staff during recruitment. The hesitancy of support staff when engaging in ID research studies surrounding the lack of research in this area is largely due to the need for staff to understand the personal benefits of the research related to themselves and clients, have strong and trustworthy relationships between care staff and researchers, and have valuable support offered by researchers and managers (Tuffrey-Wijne, Bernal & Hollins, 2008). However, there are accessible tools and practices, such as self-compassion, that demonstrate great success when applied by the person experiencing such issues (Neff, 2009)

Staff engagement is crucial when conducting research, especially in areas of ID support because this population is responsible to provide services to intellectually disabled persons and their families but have reported feelings of low control in workplace decision-making, while also working under contingencies that may dramatically affect burnout, retention, and stress (Ryan, Bergin, & Wells, 2019). To restore autonomy for ID support staff, one option may be utilizing person-centered planning while conducting research, as well as in daily work, by having participants set their own behavioral goals rather than assigned by researchers, which is highlighted as an efficient and effective technique (Sanderson, Thompson & Kilbane, 2006). The current study sought to examine the effectiveness of self-compassion training implemented with

disability support staff who are simultaneously fulfilling degree requirements for career advancement on reported self-compassion and social validity scores.

LITERATURE REVIEW

Research on ACT and Self-Compassion Interventions

When under stress, university students may engage in the use of drugs and alcohol, while their academic performance, mental well-being, and overall wellness are affected, and their idyllic performance is adversely affected (Lee et al., 2010; El-Ghoroury et al., 2012). A recent study in prep by Belisle et al. explored the efficacy of a series of six 5-minute self-compassion and mindfulness training exercises embedded directly within undergraduate research classes on reported levels of psychological flexibility, and self-compassion. The training program utilized evaluated a 6-week cross-over design, examining the effects of self-compassionate training and study tips with university students (Belisle et al., in prep). The preliminary results of the study suggest that brief training may be successful in influencing self-compassion and psychological flexibility. The brief and technological nature of the intervention required a low response effort for educators, and it did not require additional effort from students which warrants further empirical investigation.

University campuses have the potential to house many diverse populations, and one diverse minority population such as the LGBTQ+ community. Treatments that are efficacious towards the mental health crisis in minority populations, such as the LGBTQ+ community include utilizing Cognitive Behavior Therapy (CBT), understanding both expectancy theory and the psychological mediation framework, and acknowledging important contributions from prior research which is advanced by this model (Hatzenbuehler, 2009). Utilizing tools such as self-compassion (Neff, 2003b) and CBT as well as process-based therapy (Hayes & Hofmann, 2017)

demonstrates the effectiveness of third-wave behaviorism, as described by Hayes and Hofmann (2017).

Poor mental health and stress can adversely affect businesses and employee performance as well as productivity, engagement with their work, communication with coworkers, and physical capability and functioning (CDC, 2019). According to the Center for Disease Control and Prevention (2019) by addressing mental health issues in the workplace, employers can reduce health care costs for their businesses and employees. Many employers may expect good work without offering any support to their staff, or they may assign the “problem” to others (Knight, 2021). In an article by Greenwood and Anas (2021) employees need and expect sustainable and mentally healthy workplaces, which requires taking on the real work of culture change. Employers must connect what they say to what they put forward (Greenwood & Anas, 2021). The workplace can be a favorable place for a culture of mental health because there are already communication structures in place, and social supports are available (CDC, 2019). A question that employers should answer is “what’s your why?” when analyzing the cost benefits of choosing to offer mental health support. For many, therapeutic techniques and practices do not come naturally when experiencing a mental health emergency, however, there are accessible tools and practices, such as self-compassion, that show great success when applied by the person or organization (Neff, 2009).

When examining the literature on mental health crises and strategies to help, a robust variety is found, such as the impact the crisis has on minorities, within the workplace, and university students (APA, 2018; Russell & Fish, 2016; Kecmanovic, 2020). One of the main areas for mental health regulation, which is continuously under strenuous development, is self-compassion (Neff, 2011). Within previously developed literature, the techniques described and

utilized have very similar qualities to self-compassionate materials, such as mindfulness and similar Buddhist psychological methods (Germer & Neff, 2022; Zeng et al., 2016; Yadavaia, Hayes & Vilardaga, 2014).

A world-leading expert on self-compassion, who was one of the first to operationally define and measure the construct of self-compassion, Dr. Kristen Neff, describes the process as acting the same way towards yourself as you would a friend or loved one, when you are facing a difficult time, fail, or notice something you don't like about yourself (Neff, 2020). In an interview with Google titled, *the science of self-compassion*, the meaning of self-compassion was defined in Latin as “to suffer with” (Neff, 2022). Self-compassion is to be with ourselves as we suffer with positive support and kindness as well as mindfulness, and while practicing that we are less likely to become overwhelmed with our thoughts and feelings that can lead to certain feelings such as depression and anxiety (Neff, 2022). Self-compassion involves three elements: Self-kindness versus self-judgment, common humanity versus isolation, and thirdly mindfulness versus over-identification (Neff, 2020). When deciphering between the three elements, it is important to note that self-compassion does not come naturally to all humans, and Neff (2021) highlights what self-compassion is not: self-compassion is not self-pity, it is not self-indulgence, and it is not self-esteem. However, self-compassion is kindness to oneself, recognition that humankind is imperfect and connecting with others over this and practicing mindfulness which involves recognizing and practicing non-judgment when experiencing painful emotions and thoughts, rather than suppressing or displaying that hurt on to ourselves or others (Neff, 2015).

While conducting various literature reviews on self-compassionate behaviors, one word found to be repeatedly highlighted was “recognizing”. With self-compassion, it takes recognition of the human to determine what they are feeling or thinking and processing it while practicing

self-compassionate behaviors as defined earlier by Neff (2020). Self-compassion can be a model of behaviors that can foster self-care within a system. A large part of self-compassion practice included mindfulness (Neff, 2020). A previous study examined the effectiveness of mindfulness and self-compassion as predictors of psychological well-being in long-term meditators and matched nonmediators, and investigated cross-sectional relationships between self-reported mindfulness, self-compassion, meditation experience, and psychological well-being (Baer, Lykins & Peters, 2012). Results suggested both mindfulness and self-compassion skills may play important roles in the improved well-being associated with mindfulness training; however, longitudinal studies are needed to confirm these findings (Baer, Lykins & Peters, 2012).

Self-compassion can help with psychological and physical well-being, and it can be applied to many disorders such as bipolar, post-traumatic stress disorders, depression, and as well as with youth, in business, health care, and academia (Neff, Leary, Hoyle, 2009; McGehee, Germer, & Neff, 2017; Neff & Germer, 2017). However, before the application of self-compassion to help with well-being, scientists and researchers had the idea that to be psychologically fit, self-esteem must be high (Neff, 2009). Research shows that high self-esteem indeed does help with lowering depression and anxiety, yet it also is strongly correlated with narcissism, as well as associated with the “better-than-average” effect which is the need to feel superior to others to feel good about oneself (Alicke & Govorun, 2005; Twenge, 2006; Neff, 2009). Thus, practicing self-compassionate related behaviors, rather than boosting self-esteem with self-evaluations and comparison, offers the most benefit with lesser limitations (Neff, 2009). Research by Neff and colleagues (2019) provides a comprehensive study of the association between self-compassion and psychological well-being. Researchers utilized the self-compassion scale (SCS) to examine self-compassion in terms of a total score, six individual

subscale scores, and two means taken from subscales that represent increased compassionate and reduced uncompassionate self-responding (Neff et al., 2019). Overall, results suggested that both compassionate and reduced uncompassionate self-responding are central to self-compassion and that both help to explain its link to healthy psychological functioning (Neff et al., 2019).

Several research studies have found the practice of self-compassion to benefit university students (Neff, Hseih, Dejithirath, 2005; Lee et al., 2010; El-Ghoroury et al., 2012; Lee, & Lee, 2020; Neely et al, 2009). In one study, it was found that students enrolled in a semester-long seminar that engaged in self-compassionate behaviors were positively associated with achieving mastery goals for learning, and were negatively correlated with performance goals, meaning self-compassionate people have the motivation to achieve goals and grow towards their values for innate reasons not for social status or compliance (Neff, Hseih, Dejithirath, 2005). A study by Lee and Lee (2020) found that students engaged in self-compassionate behaviors have shown to decrease other behaviors related to fear of failure, which increases feelings of competence amongst students and lessens the impact of burnout which can lead to depression in this population. Lastly, two studies by Neff and Germer (2012) evaluated the effectiveness of an 8-week mindful self-compassion program designed to train people to be more self-compassionate. Within the study, one significant pre and post gains in self-compassion, mindfulness, and various well-being outcomes were found, and study two found that compared with the control group, intervention participants reported significantly larger increases in self-compassion, mindfulness, and well-being (Neff & Germer, 2012). The gains were maintained at six-month and one-year follow-ups and the program appeared to be effective in enhancing self-compassion, mindfulness, and well-being (Neff & Germer, 2012).

In the workplace, self-compassion may help employees be happier, more successful, and better at weathering setbacks (Weiss, 2018a; Rego, Cunha, & Simpson, 2016). Abaci and Arda (2013) found a positive correlation between self-compassion and job satisfaction. Self-compassion can improve employee health and performance outcomes amidst conflict, providing evidence that self-compassion at work may not necessarily be at odds with organizational values, missions, or goals rather it helps improve these areas (Chen, 2018; Weiss, 2018a; Rego, Cunha, & Simpson, 2016). A study by Chen (2018) found that within the workplace utilizing and practicing self-compassionate behaviors helped boost employees' drive to improve due to values-based work and living. One study's findings indicate that self-compassion training can improve self-compassion and other work-related well-being outcomes in working populations (Kotera & Van Gordon, 2021). However, in general, there is a necessity for greater "methodological quality" in work-related self-compassion intervention studies to advance understanding regarding the applications and limitations of this technique in context (Kotera & Van Gordon, 2021).

While many employees across America experience extreme hardships, burnout, and stress, staff who work in intellectual disability services may experience greater work-related stress due to the constant emotional demands of clients and superiors (Noone & Hastings, 2010). Many staff employed in this environment work with individuals who engage in severe and significant aggressive behaviors towards others in their environment which can cause negative emotional reactions amongst staff (Noone & Hastings, 2010). However, when staff was presented with mindful-based technologies and workshops, initial data suggested better acceptance of stressors present in the work environment (Noone & Hasting, 2010). This research supports the use of mindful-based technologies to support the well-being of staff. Self-

compassionate people often demonstrate increased motivation; however, this motivation does not develop from harsh self-criticism and flagellation, and what is found when self-criticism is practiced over self-compassion is the development of inevitable depressive feelings and behaviors due to this “illusion” of control (Neff, 2014). When self-compassion is practiced, and people nurture themselves rather than criticize, it is found to be more effective in the long run when learning skills and acceptance towards adversities may increase (Neff, 2014). This may be beneficial for both the employees and the company when practiced and trained at work, by increasing profit for the company, and profit in personal lives. If self-compassionate techniques are utilized throughout a workplace, retention may increase, and therefore time, money, and training technologies can be saved (Weiss, 2018b).

Preventative Interventions that Target Direct Behavior Change

The concept of stigma surrounding mental health has been around for many decades, yet only in the past decade has it gained great attention in research and policymaking (Mak et al., 2007). Stigmatization surrounding mental health has a large effect on the quality of life and changes in certain defined areas such as socioeconomic status, health, and criminal involvement (Link & Phelan, 2001). Stigmatization is a product of psychological inflexibility, and there is a positive moderate association between inflexibility and stigma, and engagement in practices such as acceptance and commitment therapy (ACT), and self-compassion can produce a reduction in stigmatization (Krafft et al., 2018; Wong, Knee, Neighbors & Zvolensky, 2018).

Certain events, such as pandemics, can bring about new mental disorders or fears and magnify the previously present disorders amongst populations, and as with anything new, the unknown is what can bring about these disorders and stresses (Goyal et al., 2020). In general,

populations can experience panic, anxiety, and fear related to sickness or death, and feel helpless which can accelerate mental breakdowns and increase feelings of anxiety and depression as well as other mood and psychiatric disorders (Goyal et al., 2020). The pandemic increased the need for mental health services, and service providers undoubtedly felt the pressures (Kar et al., 2020a). Recent findings in a study involving health care professionals divulged that more than half (50.7%) of the participants reported depressive symptoms, as well as about 45%, experienced anxiety, and 36.1% experience sleep problems related to the pandemic (Ho et al., 2020). During the pandemic, vulnerable populations, such as those with intellectual disabilities, have been confined to their homes and outside social interaction has been removed from their daily lives which can attribute to negative health outcomes (Kar et al., 2020a). As a global health emergency, at the start of the pandemic, the confirmed number of deaths was 23,495 at the end of March, and it is statistics like these that can instigate panic in populations and escalate engagement in inflexible behaviors to cope with such catastrophes (Kar et al., 2020b).

Engaging in behavioral strategies which can help alleviate some of the upset brought about by social issues, illness, or disorders, is encouraged, and often endorsed by practitioners (CDC, 2020). More specifically when experiencing a mental health crisis some behavioral strategies include reaching out virtually to friends and family, sharing fears associated with the disorder, exercising, and engaging in a variety of relaxation techniques, as well as increasing self-awareness (Kecmanovic, 2020). Effective practices which have similar strategies are self-compassion and mindfulness, which engage the learner in present moment awareness, common humanity, and self-kindness which can increase emotional resilience and strength (Neff, 2011).

However, engaging in positive behavioral strategies can be difficult when in a situation such as the pandemic or when experiencing depressive thoughts, yet when practicing positive

psychology thoughts are not denied, but rather they are accepted for what they are, which is termed “acceptance”, which is the capability to feel the full range of thoughts and emotions without unnecessary avoidance in the service of what matters the most to you. (Hayes, 2021; Corliss, 2020). Other recommendations for practicing positive behavior change include engaging in ACT and self-compassionate behaviors which incorporate practicing mindfulness, sharing kindness with yourself and others, understanding self-as-context, defusing from thoughts, and practicing gratitude (Wood, Johnson, Feeney & Hayes, 2016; Corliss, 2020; Neff & Davidson, 2016).

Behavior change involves altering behaviors and habits, and it is demonstrated in most of the research that small behavior changes can lead to large improvements in an individual's health and life as well as others in their environment (Davis et al., 2015). In typical behavior analysis settings, direct contingency management is an essential part of ABA practice, but there are limits when considering the treatment of behaviors that are not under the control of direct environmental contingencies (Kelly & Kelly, 2022). When utilizing behavior analytic interventions to target behavior change, direct and indirect observations are often used, yet some sources indicate that indirect observations tend to generate less accurate data than directly collected data (Johnston & Pennypacker, 1993). Direct measures focus on control over the behavior and in one study (Koegel & Williams, 1980), findings indicated rapid acquisition of target behaviors only occurred when the target behavior was directly measured within the chain leading to the reinforcer, indicating the great significance of direct behavior change in applied behavior analysis. In the area of ACT, researchers have been able to provide direct behavioral evidence of target areas of the therapy, as an effective behavior change process. Many of the studies reviewed (Bordieri, 2021) used variants of multiple-baseline designs and direct measures

of behavior (75%). Utilizing prime behavior-analytic methodology in such studies not only strengthens the literature on ACT within ABA but also offers support for the inclusion of ACT interventions within ABA practice (Bordieri, 2021).

Practicing self-compassion is direct behavior, and this is due to the engagement in and completion of behaviors by the individual and being physically present and directly observing and monitoring their own behavior, and this is especially found in one area of self-compassion: mindfulness (Neff, 2003b). Research findings from a current study (Reeve et al., 2021) examined work-related stress and burnout amongst frontline homelessness staff in a single-case design and found support for the ACT intervention which reduced defined exhaustion and increased work engagement amongst staff. Also, psychological flexibility increased with all participants, and it was possibly related to increases in other outcome variables as well. Another study (Ruiz et al., 2016) evaluated the effects of a one-session ACT protocol in disrupting negative thinking with 11 participants, and the results demonstrated large effect sizes in all repeated negative thinking measures and emotional symptoms, experiential avoidance, cognitive fusion, and valued living, and this demonstrates the effectiveness of a non-invasive tool for ACT and related components.

A prior study's findings (Velasquez, 2021) evaluated the effect of a brief mindfulness-based intervention to assess the relationship between psychological and behavioral factors, such as mindfulness and self-compassion, in improving parental stress, psychological well-being, and behavioral outcomes in parents of children with autism spectrum disorder (ASD). Results suggest a gradual increase in psychological and behavioral mindfulness and self-compassion scores in parents of children with ASD after obtaining mindfulness and self-compassion training, and a mild increase in well-being (Velasquez, 2021). Prior research in the realm of self-

compassion and ACT elements demonstrates that self-compassion is a direct behavior and can be observed within a single-case experimental design.

Ecological Momentary Assessment and Measuring Self-Compassion

When self-compassion is practiced, and people nurture themselves rather than criticize, it is found to be more effective in the long run when learning skills and acceptance towards adversities may increase (Neff, 2014). This may be beneficial for both the employees and the company when practiced and trained at work, by increasing profit for the company, and profit in personal lives. Most employers may see extravagant expenses when self-compassion technologies come across their desks, yet, what they do not see are the benefits. Previous research (Callender et al., 2019) found that by utilizing mindfulness-based mobile apps, participants may have a decrease in burnout and an increase in mindfulness at work.

If self-compassionate techniques are utilized throughout a workplace, retention may increase, and therefore time, money, and training technologies can be saved (Weiss, 2018b). Utilizing tools that represent a dominant approach, such as ecological momentary assessments (EMA), allows for adaptive, real-time, and real-world delivery of intervention components in daily life by real-time processing of the data (Rauschenberg et al., 2021). Shiffman, Stone, and Hufford (2008) describe EMA's as involving repeated sampling of subjects' current behaviors and experiences in real-time, in their natural environments. Biehler and Naragon-Gainey (2022) evaluated the relationship between self-compassion and mindfulness by utilizing an ecological momentary assessment (EMA). The intervention consisted of 172 adults within a community who completed a 7-day self-compassion EMA. Results suggested that "self-compassion was predictive of higher momentary eudemonic well-being in people's daily lives, supportive of

ecological validity” (Biehler and Naragon-Gainey, 2022). A systematic review conducted on the utilization of EMA’s via smartphones to examine the effects on well-being (de Vries, Baselmans, & Bartels, 2020), found that the use of smartphones to conduct EMA’s was easier for both researchers and participants and allowed for more flexible designs, as well as the effect of workplace and company which can influence well-being. This review also found that well-being fluctuated daily and weekly and most notably it was higher in the evenings and weekends (de Vries, Baselmans, & Bartels, 2020). Levin, Haeger, and Cruz (2019), explored the effects of tailoring ACT skill coaching through EMA’s via smartphones, and results indicated that the more tailored an EMA app was to participants, the higher user reported satisfaction was compared to random EMA content. A few advantages of utilizing EMA’s in research is minimizing recall bias, maximizing ecological validity, and allowing a study of “micro-processes” that influence behavior in the real world (Shiffman, Stone, and Hufford, 2008).

Research findings by Bear (2012) suggest that mindfulness and self-compassion skills training may play important roles in the improved well-being associated with mindfulness training; however, longitudinal studies are needed to confirm these findings, which was what the present study sought to do. The present study also sought to imitate technical procedures from Neff and Gremer (2012), by utilizing a similar weekly course sequence to increase self-compassionate behaviors. The current study is based on a similar study conducted last year by a present study researcher and other colleagues, and the previous study examined the effect of mindfulness training to increase psychological flexibility and academic performance in university students (Belisle et al., 2022). Mindfulness and self-compassion training interventions were utilized to increase students’ overall self-compassion, psychological flexibility, academic performance, and well-being, compared to the control group which utilized study tips (Belisle et

al., 2022). Results suggest that mindfulness and self-compassion interventions increase students' overall perceived self-compassion and psychological flexibility. Both groups reported similar levels of academic well-being. However, only the mindfulness and self-compassion training appeared to support psychological well-being compared to study tips, and future research should expand the use of self-compassion to increase performance in other settings such as the workplace, and to create a user-friendly model with a phone app rather than email to create a more effective administration with EMA technology embedded (Belisle et al., 2012). Utilizing EMA's in research is unique in its promise to advance the science and practice of psychology by allowing transparency of the behavioral dynamics within the everyday settings of participants (Shiffman, Stone, & Hufford, 2008).

The Present Study

As noted in studies by Kotera and Van Gordon (2021), Chen (2018), and Rego, Cunha, and Simpson (2016), current research supports the use of self-compassionate tools and techniques to improve work performance, happiness, job satisfaction and to live a values-based life at both work and home. Kotera and Van Gordon (2021) findings indicate that self-compassion training can influence and improve self-compassion and other non-work-related outcomes, yet there is a need for more research in this field of work-related self-compassion to understand the applications and limitations of self-compassionate techniques in the workplace. The current study sought to expand upon several previous research questions and findings, such as Baer and others (2012), which determined longitudinal research is needed to confirm self-compassion findings. Noone and Hastings (2012) findings of mindful-based technologies, such as self-compassion training, which support staff caring for individuals with intellectual

disabilities, and Belisle and colleagues (2022) findings suggest future research in self-compassion training should include practical and comprehensible technologies for effective administration and collection, as well as applying training programs to areas such as the workplace. The current study sought to explore the several findings mentioned previously and to examine the effects of a 4-week self-compassion training course on engagement in self-compassionate behaviors and social validity scores with staff at disability support agencies.

METHODS

The current study aimed to evaluate the effect of self-compassion training with disability support staff on their daily reported self-compassion behaviors and weekly reported self-compassion scores, as well as their perceived social validity, utilizing a single case design via ecological momentary assessments (EMA) on a mobile application. Current junior and senior-level undergraduates working as disability support staff at community agencies, as well as graduate-level students enrolled in the Applied Behavior Analysis and Clinical psychology programs who were employed at disability support agencies, were invited to participate. Data were collected daily and weekly from participants, and the daily data collected included the reported number of minutes practiced with each of the individual's three defined self-compassionate behaviors, as well as weekly data that included the Self-Compassion Scale (SCS) by Neff (2003a).

Participants

The participants included six Caucasian females between 20 and 26 years old with a mean age of 21.16. Participants were enrolled at a public university in the Midwest, and they also were identified as working at disability support agencies within the Midwest region and were all English speaking. The agencies for all participants provided services such as language and cognition training, social and emotional instruction, and functional and adaptive interventions to children and their families while executing behavior science. Five of the six participants were graduate students at the university. Four graduate-level participants were enrolled in an Applied Behavior Analysis program, one graduate student was enrolled in the

clinical program, and one participant was a senior-level undergraduate psychology student. Participants indicated their length of current employment as between six and eight months, for an average of 7.16 months of employment. The participant's consent came from reviewing a form that included a description of the right to withdraw at any time, as well as the risks and benefits of participating in the study, and consent was given by continuing with the study. Ethics approval was obtained prior to the recruitment of participants by the university's institutional review board (IRB) on April 15 of 2022 with approval number IRB-FY2022-191 (see Appendix).

Sampling Procedures

The study was advertised through emails sent to the identified support staff that met the criteria of being enrolled at the university as an upperclassman working at a disability support agency. Eleven potential participants were contacted, and six were self-selected and indicated interest to participate, indicating a 54% success rate of contact. There was no compensation received by participants for participating in this study, and all ethical standards were followed as instructed by the institutional review board, (see Appendix).

Materials

Email was utilized for contacting participants on a secure university email system and was the main form of contact throughout the study. Zoom was utilized to conduct meetings. The ACT Matrix created by Polk and Schoendorf (2014) was utilized within the study. Table 1 is an example of the complete matrixes from the six participants, which includes their identified values in laymen's terms, as well as their "away" and "toward" moves, and their committed

actions for each of the three identified self-compassionate behaviors, all while navigating the matrix with the researcher during the pre-study meeting. All identifying information is removed for ethical concerns.

Participants were asked to download Expiwell, an application for mobile devices, and to allow for notifications, and Expiwell is defined as “supporting research across disciplines using experience sampling methodology” (Expiwell, n.d). Expiwell is a technology that can be utilized by researchers to create and maintain research projects (Expiwell, n.d). Once an account is created, users can create studies within the app and add participants to the study once published (Expiwell, n.d). In the current study, Expiwell was used to create four pieces of training related to the areas of self-compassion. First, each survey was created by replicating information from the downloadable surveys to the Expiwell interface. The daily report was created on Expiwell, which is viewable in **Figure 1**. Then, the weekly materials were created by adding in directions and materials such as training videos that were created prior and training conclusions, as seen in **Figure 2**. Once all materials were entered into Expiwell, a monthly calendar was created by drag and drop inserts of each training, daily report, and SCS and social validity survey. Once the calendar was completed according to designated training and data collection information, the program was published, and researchers added participants accordingly.

While conducting the current study, Expiwell was utilized for material distribution and collection. The application displayed a weekly training disseminating materials from one of the three components of self-compassion. The training was assembled on Microsoft PowerPoint and was screen recorded by utilizing a screen recording application that was factory downloaded on the researcher’s computer. The materials of the training were utilized from a previous study

conducted by the researcher and colleagues, which involved self-compassion training for undergraduates (Belisle et al., 2022).

Each training included what the topic of the week was, unique ways of engagement for the behavior, and the importance behind the weekly topic. However, this study also utilized a combination of all three material topics for the fourth and final week. The fourth week of materials employed the definitions of each of the three self-compassion areas as defined by Kristen Neff (2020), as well as relevant information from each of the three areas determined by the researcher, and how they can be used together for a completely holistic approach to self-compassion.

Each of the four videos, after recording, was uploaded to YouTube, and the links were copied and inserted into the Expiwell app. The training videos were ten minutes or less in length.

Figure 2 is a representative image of the directions that participants would view in their Expiwell application each Monday when completing self-compassion training. Participants were to report on set social validity measures, on a scale of one to five with two questions and complete the SCS. The SCS utilized in this study was the full version, 26 question survey. Participants were to rate how they generally acted towards themselves, and each question was asked on a scale of one to five, with five being “almost always” and one is “almost never”. Examples of the questions asked: “When things are going badly for me, I see the difficulties as part of life that everyone goes through”, “When something painful happens I tend to blow the incident out of proportion”, or “I can be a bit cold-hearted towards myself when I am experiencing suffering”. The questionnaire utilized had reverse-scored questions, which Expiwell translated for researchers during analysis. The mean time of completion for the SCS was four minutes for participants, as shown by Expiwell.

The social validity measure included in this study was replicated from a previously mentioned study by Belisle and others (2022). Social validity and SCS data examination were completed on Microsoft Excel, and data was transferred weekly to the spreadsheet from Expiwell on Monday mornings. When data was transferred, if responses were not recorded for some participants, the researcher would contact them via email asking participants to report their data within the next 24 hours, otherwise, their weekly data would not be collected. The social validity survey included two multiple choice and two short answer questions. Table 2 and Table 3 represent the short answers given by participants during the social validity measure.

Dependent Variable

The dependent variable in the current study was the reported time of the practiced self-compassionate behaviors related to a defined value of each of the participants. Participants perceived social validity and SCS was collected and measured by utilizing a single case design via ecological momentary assessments (EMA) on a mobile application, Expiwell. Reported social validity was collected weekly from participants to possibly produce contextual knowledge about participants' behaviors. The primary outcome measures were the reported minutes of reported daily self-compassionate behaviors. The total minutes were reported daily on Expiwell at 6 pm every evening. Participants were required to state the number of minutes practiced daily for the three defined self-compassion behaviors. If participants did not engage in a behavior, they were instructed to report "0 minutes" next to the behavior. Researchers would access the daily information every week on Monday mornings. Researchers would then export the Expiwell file to Microsoft Excel, where the written daily minutes would be transferred into numbers and then added to the individual's sheet and line graph.

During the recruitment phase of the study, email was utilized for contacting participants. Participants were informed in the email to respond, “I am interested” if interested in participating in the study. Once the week of recruitment concluded, the six participants who responded with interest were sent a request to meet with the researcher one on one via Zoom to receive additional knowledge of the study and complete an ACT Matrix. All participants met individually with the researcher on the same day and completed the ACT matrix once informed of the study. The ACT matrix session consisted of asking the participant to choose something in their life that has great importance to them. Next, once described, participants were instructed to list “away” thoughts, feelings, and emotions, as well as physical things they engage in that “takes them away” from their value. Lastly, participants were given the three components of self-compassion: self-kindness, common humanity, and mindfulness. The researcher described what each of the three areas were as defined by Neff (2020). Once described in detail to the participant, the researcher asked participants to choose an individual towards behavior for each area. The stipulation of the behaviors was that they had to be measurable in minutes. As suggested by the researcher, to measure mindfulness, participants were encouraged to utilize meditation as a substitute. However, meditation was individually defined by each participant, as well as self-kindness and common humanity.

Procedure

The current study aimed to evaluate the effect of self-compassion training with disability support staff on their daily reported self-compassion behaviors and weekly reported self-compassion scores, as well as their perceived social validity, utilizing a single case design via ecological momentary assessments (EMA) on a mobile application called Expiwell. This

methodology is a suitable approach to answering the research question due to the limited resources provided at the disability support agencies to staff, and prior research stating that those with higher levels of self-compassion are more likely to have empathy for others, which is something needed when working in disability support and is a variable measured within the study (Beaumont, 2021). Data was primarily collected study by utilizing an empirically cited survey, the SCS (Neff, 2003a).

The current study utilized a reversal design that involved three intervention elements, with a reversal. Each phase of the intervention introduced one of the three elements of self-compassion while one element remained in baseline and the other withdrawn, where each element targeted a specific behavior, of three possible behaviors, followed by a combined intervention phase of all three self-compassion elements. Once each matrix meeting had concluded, participants were sent their matrix with their defined behaviors listed as well as their individual code for Expiwell. Each participant was randomly assigned an Expiwell code for the intervention by using a generic random number generator (Maple Tech LLC, n.d). Once each participant was successfully enrolled in Expiwell, baseline data was collected for a week. Prior to starting daily collection, a self-compassion survey was administered, as well as at the conclusion of baseline. Participants were not sent set reminders at the beginning of the day at this stage of the study; however, they were notified daily by Expiwell to report their daily data in minutes for all three areas of self-compassion which was listed individually on the daily report. The start of baseline collection was in mid-April and the study continued until mid-May, indicating that the study was implemented throughout finals week at the midwestern university.

Each week of the study was replicated in Expiwell to model the same layout for each participant. However, the weekly training differed depending on the assigned group. Group one's

trainings were assigned, in order, as meditation, common humanity, and self-kindness, and lastly week 4 of training, a combination of all three. Group two's trainings were in order as follows, common humanity, self-kindness, and meditation as well as the last week of training, combination. Group three's training was randomly assigned as self-kindness, meditation, common humanity, and combination for the last week. All groups had the same instructed training for the fourth and final week of self-compassion, however, researchers assured that each group did not have the same training each week. Included in the trainings were what the topic of the week was as defined by Neff (2020) and previous research (Belisle, 2022), which included unique ways of engagement for the behavior, and the importance behind the weekly topic.

Figure 2 demonstrates what participants viewed during the daily report. Each weekly training was administered on Monday mornings on Expiwell to appear at 7 am. Also, each day participants would receive a reminder in the morning at 8 am to practice their self-compassionate behavior(s), although not defined in the reminder as to what it was. The weekly training on Expiwell started with directions on how to complete the training, expectations of the week which included inputting the daily report of the practice of behaviors, and following with a link to the YouTube video, and instructions following completion of the video, which remained the same throughout all four trainings. Every day at 6 pm participants would receive a reminder from Expiwell indicating to input their daily behavior data in minutes. Participants had until 11:59 pm each day to input data once the notification was received. Researchers determined these times as defined previously were best due to the opening and closing of centers where participants were employed. Following the completion of each weekly, 7-day training practice, defined by researchers as Sunday at 6 pm, like other days in the week, participants would be prompted to record their daily data. However, they were also prompted in-app to complete the SCS survey

and the social validity measure which included two short answers and two multiple-choice questions related to how practicing the behavior was beneficial, if it was, as well as how it supported their personal and work well-being on a scale of one to five. It is important to note that the support centers were not affiliated with the current study.

Baseline. Within the baseline phase of the study, there were no existing interventions for all 3 defined behaviors for participants. Participants were only asked to report daily engagement with self-compassionate behaviors; however, they received no training or reminders to do so.

Intervention Phase One. During phase one, the intervention training was introduced for behavior one. Participants received training for only one of the three behaviors, and the other two behaviors remained in baseline. Participants one and two received training only for meditation, and they were only prompted to engage in their defined meditative/ behavior as chosen and assigned during the matrix activity prior, while common humanity and self-kindness behaviors remained in baseline. Participants three and four only received training in common humanity, while self-kindness and meditation remained in baseline, and they were only prompted to engage in their defined common humanity behavior as chosen and assigned during the matrix activity prior.

Intervention Phase Two. Within phase two of the intervention, participants only received training related to behavior two. The intervention was withdrawn for behavior one and introduced for behavior two while behavior three remained in baseline. For participants one and two common humanity was introduced while self-kindness remained in baseline and meditation was withdrawn. For participants three and four, self-kindness was introduced while common humanity was withdrawn, and meditation remained in baseline.

Intervention Phase Three. During phase three, the intervention was withdrawn for behavior two, and participants were introduced to only behavior three, and only received training for behavior three. For participants one and two, self-kindness was introduced while meditation and common humanity were withdrawn. Participants three and four were introduced to meditation while common humanity and self-kindness interventions were withdrawn.

Intervention Phase Four. During the fourth phase of the intervention, a combination of behavior one, two, and three were introduced to all participants. Participants one, two, three and four, all received the same training during this phase of the intervention. This training involved mediation, self-kindness, and common humanity behaviors.

Data Analysis

The data was analyzed by utilizing Microsoft Excel. Data was exported from Expiwell to Excel. Due to the design of the study, single subject experimental, Excel was utilized to format data, and graphs were created accordingly. Graphs created in Excel consisted of line graphs, and the percent exceeding the median (PEM) data was also determined due to it being one of the most used measures of the effectiveness of single-case designs (Ma, 2006). As criteria for interpretation, 90–100 % of treatment phase data points below the median signified a strong effect, 70–90 % suggests a moderate effect, and less than 70 % a questionable or no effect (Scruggs et al. 1986). Of the six participants in the study, four met completion criteria, and two no longer reported. Due to participants no longer reporting, they were not included in the final data analysis, however, noted in the methods. The participants that failed to complete the study were numbers P5 and P6. Both participants failed to report any daily report data during the final week which trained a combination of all three self-compassion areas. As found in other research,

attrition in this area of study is difficult due to the nature of the work and the need for participation daily (Haley et al., 2022; Wakelin, Perman, & Simonds, 2022).

RESULTS

Figure 3 graphically displays participants' daily reported minutes of engagement with self-compassionate behaviors, plotted on the first y axis, and on the secondary y axis, average self-reported scores from both the SCS survey and the multiple-choice social validity survey administered weekly. For participants P1 and P2, the order of their trainings went as followed: meditation, common humanity, and self-kindness. Participants P3 and P4, they engaged in training of common humanity, self-kindness and then meditation before engaging in a combination of all three. Participants P5 and P6 terminated the study before completion, indicating an attrition rate of 33%.

The average minimum SCS score for baseline was 2.57, and the average maximum was 3.38. For week one of the intervention, the average minimum SCS score was 2.69 while the average maximum was 3.57. The average minimum SCS score for week two of the intervention was 2.53 whereas the average maximum was 3.61. The average minimum score for week three was 2.65 and the average maximum was 3.53. Lastly, for week 4 of intervention, the average minimum score was 2.773, and the maximum average was 3.53.

The percent exceeding the median (PEM), was calculated for each of the participants scores and each demonstrated a moderate effect size. When compared to the average median score of the four baselines, the PEM calculation had an average of 84%, ranging from 75% to 89%. When calculating the PEM score individually with individual baselines and intervention data points, participant one demonstrated a moderate increase in self-compassionate behaviors compared to baseline at 78%, indicating a moderate effect size. Participant two demonstrated a moderate increase in self-compassionate behaviors compared to baseline at 82%, indicating a

moderate effect size and the exact same percentage when utilized in a group analysis of the PEM model. Participant three demonstrated a moderate increase in self-compassionate behaviors compared to baseline at 78%, indicating a moderate effect size, and compared to a group analysis of 75% effect size. Participant four indicated an effect size of 71%, lower than the group comparatively, yet demonstrating a moderate effect size.

A graphical display of each of the four participants' daily behavior is exhibited in **Figure 4**. The first graph in **Figure 4** is a representation of participant 1's daily report for each of the three determined self-compassion behaviors. During baseline, common humanity and meditation behaviors were reported. During the first week of intervention, where meditation was the target behavior, it was reported as 0 minutes for each day, however, self-kindness and common humanity behaviors were reported. During the second week, the week of common humanity, common humanity was practiced for an average of 24 minutes a day. Self-kindness and meditation were reported during this week, with an average of 1.4 minutes a day for meditation and 5.14 minutes a day for self-kindness. During the third week, the week of self-kindness, the target behavior was reported at an average of 4.28 minutes a day. Common humanity and meditation were reported at an average of 27.14 minutes, and 0 minutes. During the last and final week, week four, engagement in all three behaviors had an average of 12.04 minutes reported, yet 0 minutes reported with mindfulness, and an average of 33.57 minutes reported each day for common humanity engagement.

The second graph in **Figure 4** is a representation of participant 2's daily report for each of the three determined self-compassion behaviors. During baseline, common humanity behaviors were reported with .83 minutes of engagement. During the first week of intervention, where meditation was the target behavior, it was reported as an average of 4.28 minutes for each

day, however, common humanity behaviors were reported also, at an average of 13.57 minutes. During the second week, the week of common humanity, common humanity was practiced for an average of 26.42 minutes a day. Self-kindness was reported for 0 minutes, and meditation was reported once during this week, for 5 minutes. During the third week, the week of self-kindness, the target behavior was reported at an average of 1.42 minutes a day. Common humanity and meditation were reported at an average of 7.14 minutes, and 0 minutes. During the final week, week four, engagement in all three behaviors had an average of 5.23 minutes reported, with 0 minutes reported with mindfulness, and 0 minutes reported for self-kindness, and each day for common humanity engagement an average of 15.71 minutes.

The third graph in **Figure 4** is a representation of participant 3's daily report for each of the three determined self-compassion behaviors. During baseline, common humanity behaviors were reported with 4.16 minutes of engagement, also 2 minutes of self-kindness and 0 minutes of meditation were reported. During the first week of intervention, where common humanity was the target behavior, it was reported as an average of 20.71 minutes for each day, however, self-kindness and mindful behaviors were reported also, at an average of 7.57 minutes, and 3.85 minutes. During the second week, the week of self-kindness, self-kindness was practiced for an average of 12.85 minutes a day. Common humanity was reported for an average of 4.57 minutes and meditation was reported for an average of 4.57 minutes. During the third week, the week of meditation, the target behavior was reported at an average of 8.71 minutes a day. Common humanity and self-kindness were reported at an average of 21.42 minutes daily, and 8.71 minutes. During the final week, week four, engagement in all three behaviors had an average of 9.61 minutes reported, with 7.14 minutes reported with mindfulness, an average of 11.42 minutes for self-kindness, and average common humanity engagement with an average of 10.28 minutes.

The fourth graph in **Figure 4** is a representation of participant 4's daily report for each of the three determined self-compassion behaviors. During baseline, common humanity behaviors were reported with 31.16 minutes of engagement, also 5 minutes of self-kindness, and 3 minutes of meditation reported for one day. During the first week of intervention, where common humanity was the target behavior, it was reported as an average of 22 minutes for each day, however, self-kindness and mindful behaviors were reported also, at an average of 2.42 minutes, and 3.71 minutes. During the second week, the week of self-kindness, self-kindness was practiced for an average of 2.14 minutes a day. Common humanity was reported for an average of 21.85 minutes and meditation was reported for an average of 1.85 minutes. During the third week, the week of meditation, the target behavior was reported at an average of 3 minutes a day. Common humanity and self-kindness were reported at an average of 35 minutes daily, and 1.14 minutes. During the final week, week four, engagement in all three behaviors had an average of 8.76 minutes reported, with 1.28 minutes reported for mindfulness, 22.85 average minutes for common humanity, and an average of 2.14 minutes reported for self-kindness.

A graphical display of participants' average weekly social validity score is demonstrated in **Figure 5**. Psychologically, participants rated the trained self-compassionate measures as supporting and improving well-being. Participant one reported an average of 3.2 on a scale of one to five, with feeling supported psychologically by engaging in self-compassion trainings. Participant two reported an average of 4.2 when reporting perceived psychological reports related to weekly trainings. Participant three reported an average score of 4 for psychological well-being. Participant four reported an average score of 2.6 for psychological well-being. **Figure 5** also demonstrates the effect of self-compassion trainings on participants' perceived support of work well-being. Participant one had an average of 2.8, on a scale of one through five.

Participant two reported an average of 4. Participant three had an average of 3.8 of perceived work well-being related to self-compassion training, and participant four reported an average of 2.6.

Table 2 and Table 3 represent the reported short answer social validity answers given weekly by participants. Table 2 represents participants' answers to what self-compassionate behavior they engaged with for the week. Table 3 represents the brief reflections given by participants each week related to the self-compassionate behavior practiced. Participants reported difficulty with engaging in self-compassionate behaviors during the combination week, as viewed in Table 3.

DISCUSSION

The data suggest that there was a small change in participation with self-compassionate behaviors during training, and participants positively reported the advantageous effects of training on both psychological and work well-being. The intervention appeared to be effective for 2 of the 4 participants, more specifically participants 3 and 4. For these participants, common humanity was practiced throughout all weeks of intervention with a total average of 12.47 minutes daily for participant 3 and 26.44 for participant 4. Both participants practiced mindfulness the least, with an average of 5 minutes for participant 3 and 2.11 for participant 4. During the designed target week for self-kindness, participant 3 engaged in the target behavior, with an average of 12.85 minutes daily, and participant 4 had an average of 2.14, higher than the total average. Lastly, during the target week for mindful meditative behavior, participant 3 engaged in an average of 8.74 minutes daily, and participant 4 engaged in an average of 3 minutes daily, both participants engaged in this behavior more than the reported total average for meditation. Moreover, the multiple-choice social validity data indicates that as training continued, both perceived psychological and work performance support increased although low.

In a field such as disability support where technicians display compassion towards their clients, it may be difficult for some to replicate it within themselves, as shown in the current study. This may be related to the rigidity of participants' psychological flexibility, implying participants may have been “fixed” in their previous ways of behaving, rather than shifting to self-compassionate behaviors presented in trainings (Hayes, 2016). This can be assumed from the reports in Table 2 and Table 3 which had multiple suggestions of difficulty due to perceived time, effort, or capability by participants, as well as previous research by Neff (2014) which

supports the hypothesis that self-compassion is learned and is most successful in environments of flexibility and not ridged control. The negative effects of psychological rigidity may also explain the attrition rate of the study, four out of the six participants finished the study. The results do support the hypothesis that introducing self-compassion training will affect participants' engagement in the defined behaviors.

The need for mental health services has been accelerated due to the recent COVID-19 pandemic, and potentially the decision of the U.S Supreme Court to overturn *Roe v. Wade* (Kumar & Nayar, 2020; Ginsberg & Shulman, 2021). Yet, therapy is often unaffordable for many, due to only 55% of psychiatrists accepting insurance plans (Bishop et al., 2014). When experiencing a mental health emergency, or everyday stressors, many instantly enter flight, fight, or freeze mode, however, there are accessible tools and practices, such as self-compassion, that show great success when applied by the person experiencing such issues (Neff, 2009).

The results also build from a growing body of literature that supports the use of self-compassion training in many diverse populations, and especially in the workplace with employees, even though this study was conducted outside of work, participants reported it helped support their well-being at work (Noone & Hastings, 2012; Weiss, 2018b; Kotera & Van Gordon, 2021; Chen, 2018; Rego, Cunha & Simpson, 2016). A possible alternative hypothesis for the current study is that it is not only the person which training, and therapies should be focused on but the surrounding external environmental contingencies. When trying to understand self-compassion and similar trainings, behavior analysis needs to scale out to a wider practice of radical behaviorism as defined by Skinner (1975). It is potentially the environment the person is in, and if it is supportive of the desired behavior change and if external contingencies are in place

related to the wanted change because if not, it can be difficult for a behavior to change in an environment that is not supportive of it.

Limitations

Although findings indicated low to moderate success in the implementation of self-compassion training with disability support staff, they cannot be generalized, and the reliability of this data is impacted due to the small sample size. The number of participants was limited due to the number of students enrolled in the university within certain departments and identified as working at a disability support center. Also, participants were contacted two weeks before the start of the study, which may have limited the number of participants due to prior obligations.

A considerable limitation of the study is within the research design. The design utilized in the current study needed reversal effects, yet it was not apparent for example, participants' engagement in behavior one did not reverse when the behavior one intervention was removed, it continued at varying amounts. The functional relationship between the target behavior within each intervention phase and the training seemed to be deficient among participants. A possible cause for this is due to the irreversibility of behavior. In the current study, participants were introduced to a new training each week, and the information presented could not be “unlearned” once witnessed, which may have been the root cause for some participants to still engage in previously introduced behaviors, while in new phases of the intervention. When evaluating a skill-building intervention like the current study, a multiple baseline design or component analysis may have been effective to utilize for a more efficient approach, for example, when utilizing a component analysis, researchers could determine which part or phase of the intervention was effective.

While analyzing the raw data it was suggested that meditation had the least engagement, compared to self-kindness and common humanity. It can be hypothesized that rather than substituting meditation for mindfulness, to find an alternative mindful behavior that can be measured in minutes for participants to engage in. Meditation was chosen by the researcher; however, the type of meditation was not chosen prior. It can be hypothesized that if participants were able to define mindfulness in their own terms, while also measuring the defined alternative behavior in minutes, there may have been more engagement. With training and engagement, the training component required low effort from participants, so to potentially increase engagement, having several pieces of training throughout each week may have increased response.

Participants' workplaces were not involved in the study, and some environments may not have been supportive for participants, such as work or personal environments. The surrounding contingencies of the individual's environment were not examined within this study, however, all participants had one environmental contingency in common, school. However, if access was granted within workplaces, this may have encouraged the practice of self-compassionate behaviors for participants.

Participants reported that the notifications from the application, Expiwell, were ignored when sent, which indicates that the reminders were not reinforcing for participants to engage with. Conducting preference assessments and providing effective reinforcers for participants throughout the study may have encouraged engagement with defined behaviors. Providing reminders, such as motivating or humorous messages, that vary daily with easy access for participants, has been found to be effective in study engagement (Moore & Varghese, 2021).

Lastly, there were no tangible reinforcers for participants to receive while engaging with and completing the survey. While it can be hypothesized that some participants found engaging

in self-compassionate behaviors to be reinforcing, for some it may not have been which indicate a need for conducting a preference assessment which could potentially increase reporting of behaviors and engagement in behaviors. Prior to and after conducting the study, no examinations of psychological flexibility were administered, which could have affected many areas of the study such as attrition and practice of behaviors due to potential rigidity as well.

Future Research

Future research should examine the effects of surrounding environmental contingencies and apply self-compassion training to an entire workplace or department. For example, training leadership in a behavior clinic to offer compassionate support to board-certified behavior analysts working with behavior technicians and studying the effect of training on client services. However, future research should also examine personal contingencies experienced by participants, such as mentioned previously, psychological flexibility and its effects on learning and practicing newly trained material (Hayes, 2016). Examining other potential effects such as work productivity, and personal satisfaction with living a values-based life based on the Matrix completed pre-study.

Further research should consider the application of self-compassion training to other diverse populations, as well as increasing accessibility to such trainings. An example is the LGBTQ+ population, in which there are significant gaps in knowledge of the minority community, and these gaps continue to prevent the most effective policies, programs, and clinical care from addressing mental health for the LGBTQ community (Russell & Fish, 2016). Self-compassion training has been found to be effective in the university student population

(Belisle et al., 2022), and within the current study, but applying similar trainings to students in grade school, or on academic probation.

Future research should explore the further effects of weekdays versus weekends and evenings on participation. As stated in prior research (de Vries, Baselmans, & Bartels, 2020), well-being can be influenced by the time and day of participation. As mentioned previously, part of the current study was conducted during the university's finals week, which may also have influenced participants' responses. Future researchers should consider conducting a similar study during the early point of a semester, or during a university break, because the results may differ due to participants' previewed stresses or responsibilities, as well as attrition. Lastly, while the current study did utilize some personalization throughout, such as during the completion of the ACT matrix and instructing participants to apply it daily. Tailoring EMA content to each participant for a more personalized user experiment should also be explored. This is due to previous research indicating higher user satisfaction when utilized (Levin, Haeger & Cruz, 2019).

Conclusion

The results of the present study and others build on to a growing body of research that suggests that self-compassion, when implemented, may be under the influence of not only personal contingencies but broader environmental contingencies. The present research contributes to a piece of the needed initial steps towards understanding the practice of self-compassion and the areas of the practice that hold more influence than others in different contexts. As previously noted, when self-compassion is practiced, and people nurture themselves rather than criticize, it is found to be more effective in the long run when learning skills and

acceptance of adversities may increase (Neff, 2014). The current research supports the use of compassionate mindful-based technologies to support the well-being of students and staff.

Technologies such as self-compassion training, offer support to staff caring for individuals with intellectual disabilities (Noone and Hastings, 2012). The current study explored and examined the effects of a 4-week self-compassion training course on engagement in self-compassionate behaviors with staff at disability support agencies, and the findings support the use of such technologies within this population.

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Table 1. Participants ACT Matrix Remarks

	Value	Internal away	External away	Committed Behavior
P1	Family- Connection (communication/quality time) Phone calls, text, going out/errands, make time to see outside family.	I'm having an off day I am annoyed Feeling annoyed So much going on "I'm fine"	Try to get out of call/convo One word answer Ignore calls/texts/busy Hide, keep to self, isolate	Meditation: Walking for "fun" Common humanity: Share my day with a roommate or friend, maybe share a hardship or two Self-kindness: writing day down of ups and downs- what could I have said to myself differently?
P2	Self-care: taking time for self, kindness, working "right" amount, Making time for self/hobbies	Thoughts of "no time" I should be working I'm not working enough I don't deserve time off Compare to others Thinking of work	Force set to work even when little work to do Constant laptop open Short breaks- no long break Decline plans	Meditation: Throughout the day- self-affirmation meditation Self-Kindness: Journaling reflection of the day- Tracking 2 or 3 times I was hard on myself and what could I have said differently? Common Humanity: Daily re-cap with friends and share Struggles
P3	Self-care (taking time self) Skin care, journal, mindful moment, eating!!! Feelings awareness Care for self/body Mental and physical	"I don't have time" "There is something more important" No energy Feeling drained or tired Forgetful	Distracted Go to sleep Play on social media	Meditation: Journaling prompts each day Common humanity- Phone call to family & friends about day sharing struggles /obstacles Self-Kindness- write what was experienced, reflect, and write an affirmation related to thought.
P4	Leisure Time/Boundaries/ self-care	Guilt "I should be working"	Respond ASAP to notifications Saying yes too much	Meditation: Guided meditation Common Humanity: sharing an

Table 1 Continued

Value	Internal away	External away	Committed Behavior
Engaging in hobbies - connect w/ self and others	"I am behind, I need to get ahead" Not a hard worker I am lazy	Procrastinate work- feel the need to work at night Unrealistic with goals or promises	experience (daily), however long conversation is. Self-Kindness: write down thoughts (self- criticizing), and journal with reflection - what could I have done/said differently? Treat like friend.

Table 2. Participants reported written social validity for the question regarding which skills the participants engaged with and were trained on during the week.

	Week 1	Week 2	Week 3	Week 4	Week 5
P1	When the weather was nice, I went for a walk or laid out by the pool. I started using my journal again where it has you write goals for the day.	It was hard for me to engage in my skills this week other than journaling in the morning and evening.	It's okay to talk to someone close if there's something bothering you or you need to rant.	I learned how to reflect on my day and to look at the positives of it.	I spent a lot of time with family and catching up with them, so I think I engaged with common humanity the most
P2	Having conversations with my roommate about our day	Partook in guided self-affirmation meditation	Common Humanity	Self-kindness-talking kindlier to myself	All 3 meditation, self-kindness, and common humanity
P3	I engaged in common humanity this week	Common Humanity, Self-kindness	Common Humanity by calling my friends and family to talk about our days and our struggles. Self-Kindness and mediation by journaling affirmations	This week I learned and engaged with meditation, and I also engaged with common humanity and self-kindness	This week engaged with common humanity, self-kindness & meditation
P4	I made more of a conscious effort to confide in others as a part of my common humanities committed action.	My self-kindness and committed action were helpful in supporting my common humanity goals.	This week I've been trying to notice difficult thoughts and feelings and counter them with affirming statements	I think this week was mindfulness, but I honestly can't remember.	I tried focusing on all three: meditation, common humanity, and self-kindness.

Note. This demonstrates what was reported weekly on Expiwell by participants regarding the question of "which skills did you engage with this week?"

Table 3. Participants weekly written responses for the social validity questionnaire regarding a brief reflection on the skill(s) learned for the week.

	Week 1	Week 2	Week 3	Week 4	Week 5
P1	I liked journaling because it allowed me to set goals for myself and at the end of the day would ask what I did well.	I started using my journal again where it has you write goals for the day. I talked to my mom, roommate, or friend about my day or what I did during the week.	I talked to my mom a lot this week and would rant to her about things that were bothering me. I found this useful because I could get another opinion on the matter	I practiced using my journal this week. Most days I was successful in using it.	I found it hard to do all the skills this week because of being busy with work, finals, & graduation.
P2	I did not do any new skills this week. I just talked with my roommate like I usually do.	I did self-affirmation meditation this week. I did enjoy it; however, I wasn't a huge fan of the video I picked.	Every day at the end of the day I sat and talked with my roommate. I did this for my common humanity activity.	I thought the skill I learned about this week could be useful. However, I did not engage in it this week.	I practiced common humanity this week through talking with peers about struggles through our day. I found it very useful.
P3	Common Humanity by calling my friends and family to talk about our days and our struggles. Self-Kindness and mediation by journaling and using positive affirmations	I practiced both common humanity and self-kindness. I found common humanity very helpful and helped me defuse a lot of my thoughts	This week I learned about self-kindness. After the training I found myself catching negative phrases and making positive affirmations.	I did practice meditation this week and I did find it very useful. I took time to journal, and use prompts each day	I found this skill very useful, especially during finals week. I took the time to meditate and journal, express my thoughts to others and take time for myself
P4	I noticed uncomfortable thoughts in the common humanities moments to reflect on later. I found this to be useful to stop and just notice what's going on in the moment.	I found this skill very useful. I took the time to meditate and journal, express my thoughts to others and take time for myself.	I didn't practice the skill as much as I'd like. When I did remember difficult thoughts, I tried to come up with a counterthought	I tried pausing and taking deep breaths each day outside of guided meditations. I found this to be very useful!	I noticed how much I do engage in common humanity, and this made me feel more connected to others.

Daily Report

Provide an estimate of how many minutes in the last 24 hours have you practiced Meditation, Common Humanity, and/or Self-Kindness.

Type your answer...

END

NEXT

Figure 1. The daily report message received by all participants to record daily defined behaviors of self-compassion in minutes.

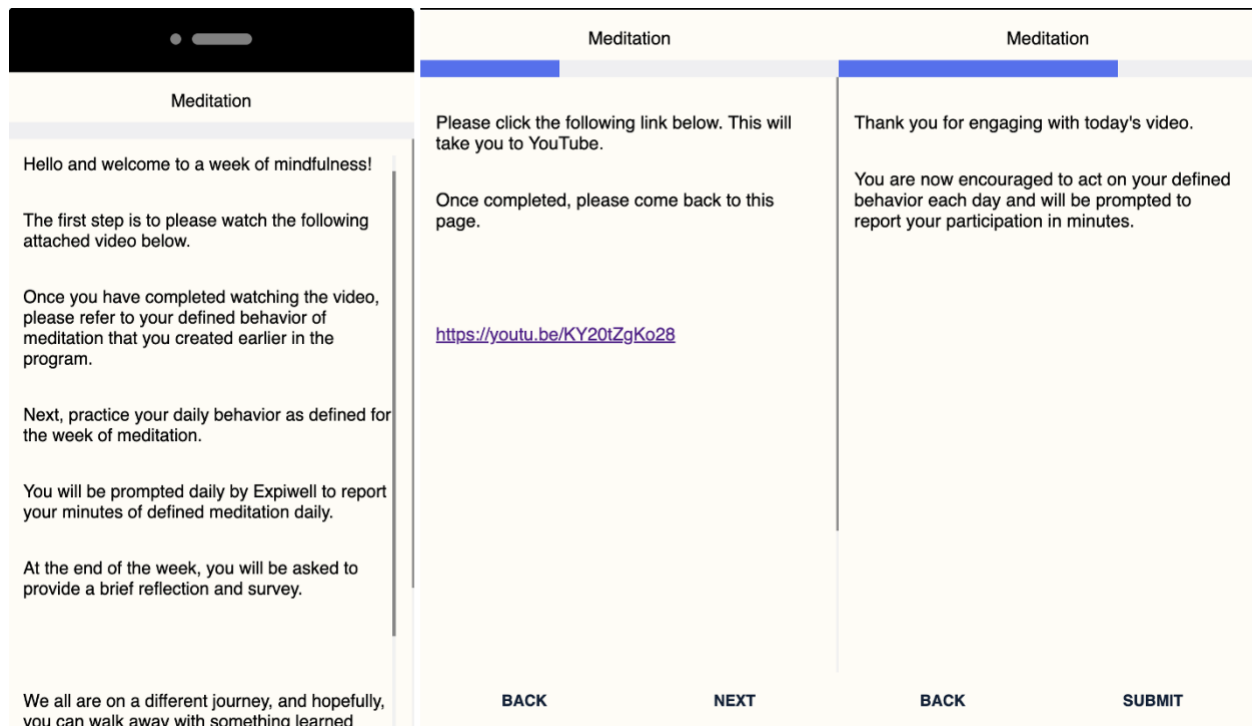


Figure 2. Example of weekly instructions and training received by participants on the application Expiwell.

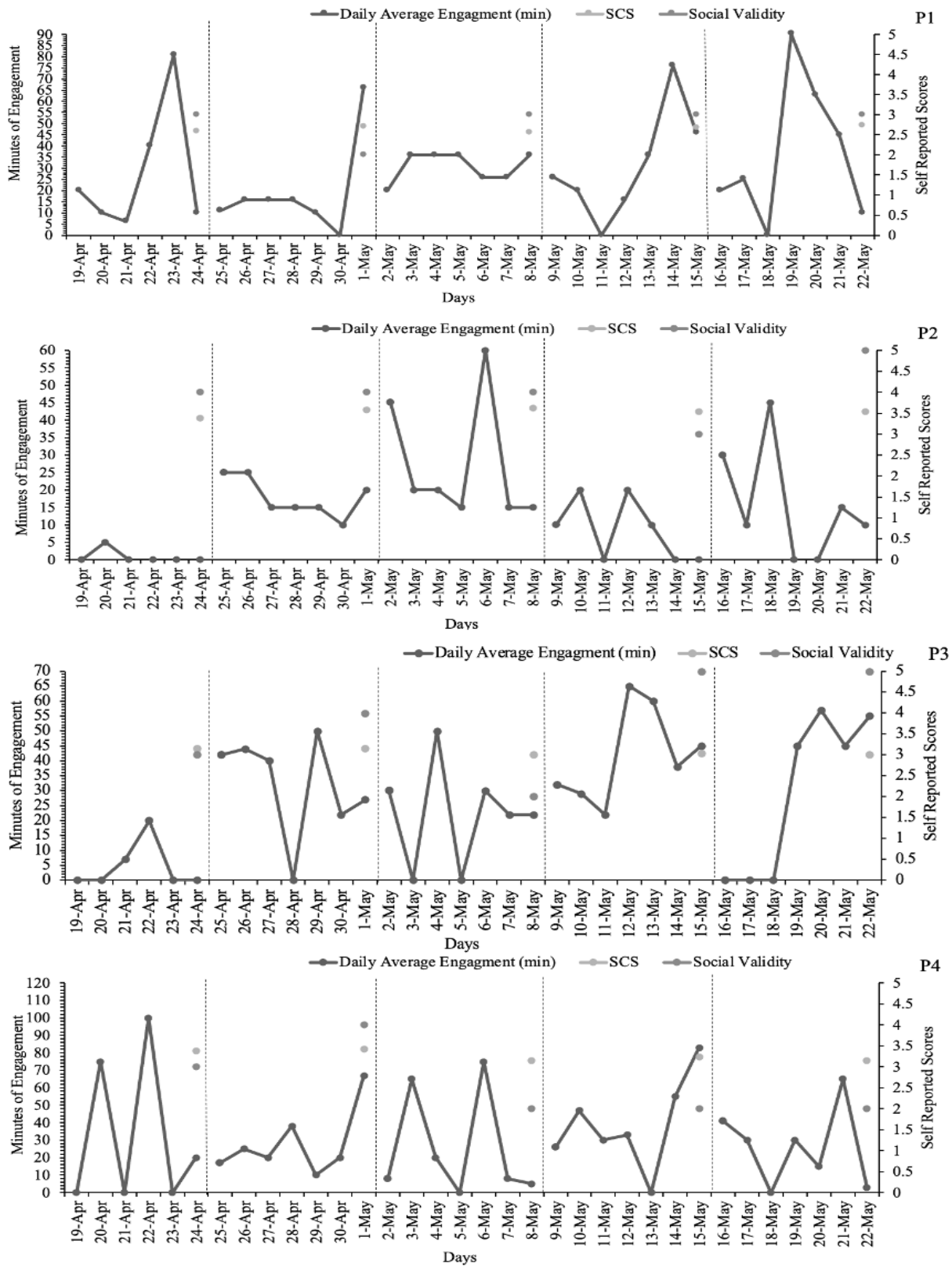


Figure 3. Graphical display of average daily minutes of engagement compared to reported weekly self-compassion scale (SCS) scores and social validity multiple-choice scores.

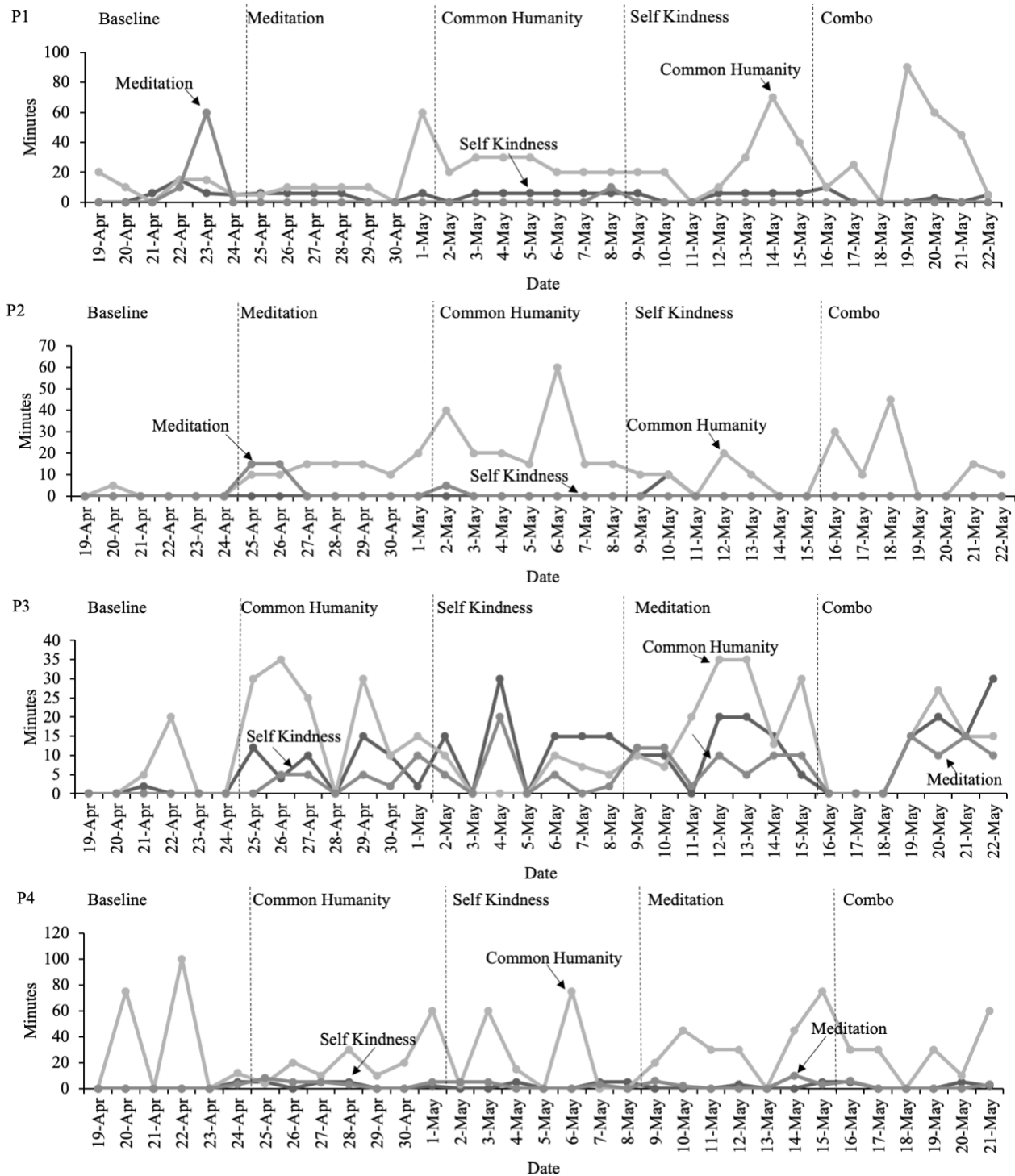


Figure 4. Graphical display of the daily report of behaviors for participants 1, 2, 3 and 4

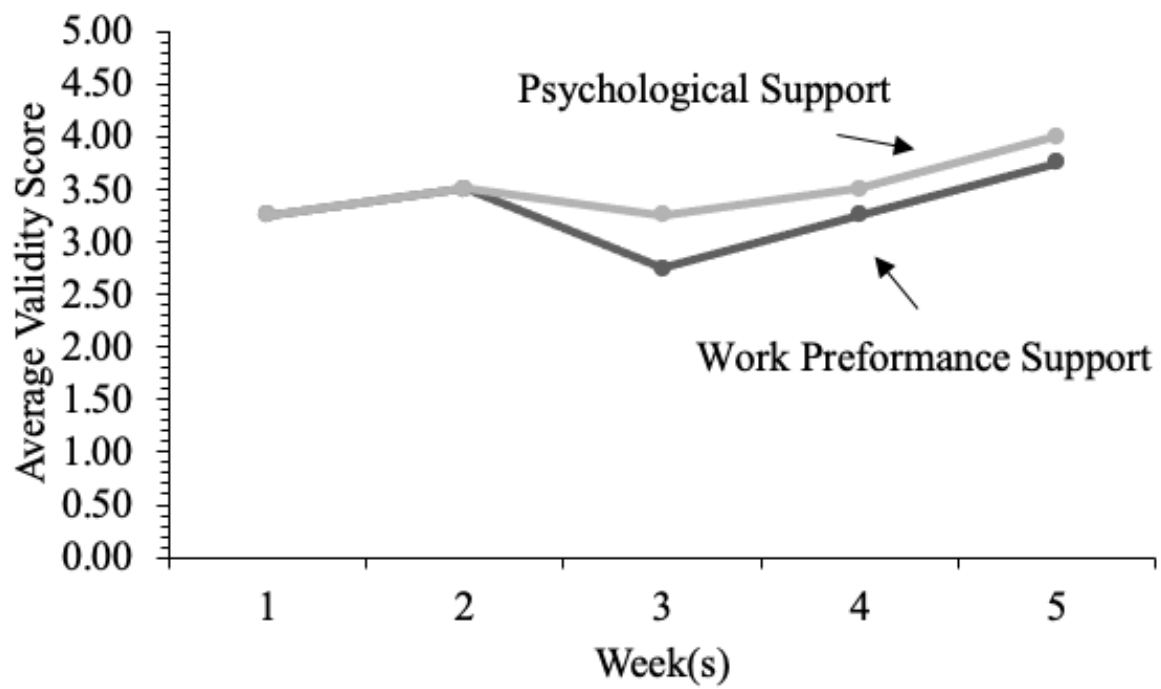


Figure 5. Social Validity Multiple Choice Questions Graphed

APPENDIX: Institutional Review Board Approval



To:

Jordan Belisle
Psychology
Dana Paliliunas

RE: Notice of IRB Approval

Submission Type: Initial

Study #: IRB-FY2022-191

Study Title: Evaluating the Effectiveness of ACT and Self-Compassion Training with Disability Support Staff

Decision: Approved

Approval Date: April 15, 2022

This submission has been approved by the Missouri State University Institutional Review Board (IRB). You are required to obtain IRB approval for any changes to any aspect of this study before they can be implemented. Should any adverse event or unanticipated problem involving risks to subjects or others occur it must be reported immediately to the IRB.

This study was reviewed in accordance with federal regulations governing human subjects research, including those found at 45 CFR 46 (Common Rule), 45 CFR 164 (HIPAA), 21 CFR 50 & 56 (FDA), and 40 CFR 26 (EPA), where applicable.

Researchers Associated with this Project:

PI: Jordan Belisle

Co-PI: Dana Paliliunas

Primary Contact: Jessica Venegoni

Other Investigators: Jessica Venegoni