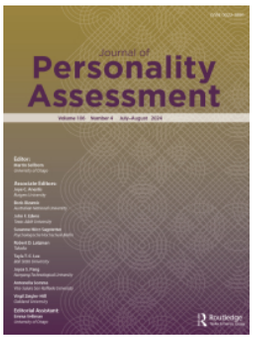

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CLINICAL APPLICATIONS AND CASE STUDIES

Therapeutic Assessment in a University Counseling Center: A Replicated Single-Case Time-Series Pilot Study

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ABSTRACT

In this study, we pilot tested Therapeutic Assessment (TA) in a university counseling center using a replicated single-case design to generate hypotheses on the effectiveness and applicability for this setting and population. We aimed to see whether TA could be an effective brief intervention to address students' presenting mental health concerns. Further, we explored whether different types of presenting concerns were associated with differential symptomatic improvement during the intervention. An independent clinician interviewed participants before the baseline period to develop individualized rating scales pertaining to their presenting concerns. Eight consecutive students accessing the counseling center enrolled in the study and rated their presenting problems across baseline, intervention, and follow-up periods. The intervention involved five TA sessions. The results suggested that TA is associated with statistically significant reductions in clients' symptoms in the context of a university counseling center. Idiographic trajectory analysis of participant data who experienced significant and insignificant change was used to test whether changes were associated with the onset of TA. The findings suggest TA might be more effective for certain presenting concerns than for others. The implications for the implementation of TA in university counseling centers is discussed.

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The psychological and mental health of college and university students have been widely studied. The WHO World Mental Health International College Student (WMH-ICS) project (19 colleges in Australia, Belgium, Germany, Mexico, Northern Ireland, South Africa, Spain, United States) indicated that one fifth of college students) suffer from mental disorder, with anxiety and mood disorders being the most common (Auerbach et al., 2018). Specifically, Major Depressive Disorder was the most common disorder across all countries combined (21.2% lifetime prevalence; 18.5% 12-month prevalence). Generalized Anxiety Disorder followed at 18.6–16.7%. The other disorders had comparatively much lower prevalence, from 6.8%–6.3% for Alcohol Use Disorder to 3.5%–3.1% for broadly defined Bipolar Disorder.

A meta-analysis by Pedrelli et al. (2015) showed that 11.9% of college students have anxiety disorders, while depressive disorders could affect 7 to 9% of the population. They also found that 6.7% of the students showed suicidal ideation, 1.6% had plans to commit suicide, and 0.5% attempted suicide the previous year. Moreover, one fifth of students showed Alcohol Use Disorder, amongst which 44% had binge drinking, 12.5% had alcohol dependence, and 7.8% alcohol abuse. Bipolar Disorder (3.2%) and Eating Disorder (9.5%) diagnoses were also found. There has been little research conducted on Schizophrenia; however, it appears that some psychotic spectrum symptoms (e.g., paranoia) are not uncommon among this population (Pedrelli et al., 2015).

The prevalence of mental health disorders among college students is a relevant issue not only for the distress it causes at a time of major life transition, but because it is often associated with a substantial impairment in academic performance (Bruffaerts et al., 2018). To address this issue, colleges and universities around the world typically locate counseling services within their campuses for students in need for psychological support. In 2010, the International Association of Counseling Services in the United States published the last revision of the general standards for the accreditation of College Counseling Centers. The document (see https://iacsinc.org/iacs-standards/) states:

> the counseling service should play four essential roles in serving the university and college community: (1) provide counseling to students experiencing personal adjustment, vocational, developmental and/or psychological problems that require professional attention; (2) play a preventive role assisting students in identifying and learning skills which will assist them to effectively meet their educational and life goals; (3) support and enhance the healthy growth and development of students through consultation and outreach to the campus community; and (4) play a role in contributing to campus safety.

Despite the evidence of college students' need for psychological support, and colleges' and universities' efforts to

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provide college counseling services to address it, the number of students in need of treatment often out paces the resources of most on-campus counseling centers ("Defunding Student Mental Health", 2019, see https://www.insidehighered.com/news/2019/10/18/mental-health-low-priority-community-colleges). This gap unfortunately results in an expanse of unmet need for treatment of mental disorder amongst college students (Xiao et al., 2017). This gap has only widened in recent years with more students seeking services and fewer experiencing symptom improvement because of scarce counseling resources (Center for Collegiate Mental Health, 2020, January). The COVID-19 pandemic further exacerbated the imbalance with increased mental health needs on college campuses (Zhai & Du, 2020).

Therefore, the professionals in counseling services are committed to using treatment procedures that have the highest possible efficacy within a limited number of sessions and then refer the students who need longer treatments to other service systems, usually outside of the university.

Therapeutic assessment as a brief counseling intervention

Therapeutic Assessment (TA; Finn, 1996; Fantini et al., 2022) is a brief semi-structured intervention, characterized by a limited number of sessions (typically 6–10 for individual clients), where psychological testing is embedded in a clinical procedure that guides clients in revising their narratives about themselves and their problems. The structure of a TA follows seven main steps that occur over a varied number of sessions:

1. *Collecting assessment questions.* Assessment questions reflect the views clients hold about themselves and/or their problems in living. These questions capture the clients' goals for the TA in service of the goal of finding satisfying answers to them that are more accurate, useful, coherent, and compassionate.
2. *Standardized administration of psychological tests.* The clinician selects tests that are specifically useful to understand aspects of the clients' psychological functioning in relationship to the assessment questions.
3. *Extended Inquiry.* The clinician initiates a collaborative discussion on selected test responses or observed test behaviors that are relevant to the clients' assessment questions. During the Extended Inquiry, the clinician usually starts exploring with the clients their experience of the test administration. Clients' impressions (emotions during the administration, notable behaviors during the testing, or test responses that were subjectively deemed as relevant) are followed up with questions and are often connected with the clients' referring problems and to the answers of their assessment questions.
4. *Assessment Intervention Session.* The clinician uses test materials in unstructured ways to create the context for the clients' behavioral problems to show up in-vivo in the session. The behavioral problems can become therefore the focus of a joint observation by clinician and client, and potential ways to address such problems are discussed.
5. *Summary and discussion session.* Clinician and client discuss the assessment results and how they help answer the clients' assessment questions. Client and clinician collaboratively discuss treatment and behavior change plans, as well as additional supports they can seek (e.g., medication, social services).
6. *Written feedback.* Several weeks after the summary and discussion session, the clinician sends to the client written feedback in the form of an individualized letter written in lay language.
7. *Follow-up session.* Clinician and client meet approximately 6–8 weeks after the summary and discussion session to check in on how the client is doing and answer further questions that might have emerged for the client in the time since the assessment ended.

However, various research studies on TA did not include all the steps described above as they represent the development of the model over nearly 30 years. The semi-structured nature of the model allows clinicians and researchers to adapt it to the resources and other constraints and needs of different contexts.

Two meta-analyses on TA and collaborative assessment methods indicate that using psychological and personality tests collaboratively (Durosini & Aschieri, 2021; Aschieri et al., 2023) enhances clients' self-growth, improves psychological distress, symptomatology and has a positive effect on process variables connected to the treatment (e.g., alliance, hope, length of stay in treatment). The published literature on TA and collaborative assessment also shows the efficacy of the model with various kinds of adult clients, such as individuals with personality disorders (De Saeger et al., 2014), psychiatric inpatients (Little & Smith, 2009), inpatients in a substance abuse program (Blonigen et al., 2015), clients at risk of suicide (Jobes et al., 2017), and students in university counseling centers (Finn & Tonsager, 1992; Newman & Greenway, 1997).

A number of published studies on TA have used a repeated-measures single-case design (interrupted time-series) to conduct in-depth analyses of the changes individual clients go through during the intervention. Aschieri and Smith (2012) published the first repeated-measures single-case study on TA with an adult client who had severe internalizing problems. Over the course of four TA sessions in 28 days, time–series analysis revealed a statistically significant improvement coinciding with the onset of TA in an individualized composite measure of psychological functioning, which included daily ratings of anxiety, loneliness, recognition of love for herself, recognition of love from others, and the degree that she was hard on herself (r = −.46). An analysis of the slope of the client's symptomatology revealed a significant trajectory of improvement that coincided with the first session of the TA (r = .58).

Tarocchi et al. (2013) explored the trajectory of change of a client who received a diagnosis of Complex Post Traumatic Stress Disorder. The TA of this client included seven sessions over 48 days. The results of the repeated-measures analysis indicated that the client experienced statistically

significant reductions in self-reported loneliness and despair coinciding with the onset of TA, compared to baseline reports prior to the TA (r = −.64). Analyses also indicated that the effects were maintained during a two-month follow-up period, during which time the client engaged in psychotherapy with the assessor.

Durosini et al. (2017) explored the trajectory of change with a client who received a diagnosis of Persistent Complicated Bereavement Disorder associated with Major Depressive Disorder and Post-Traumatic Stress Disorder. The TA with this client included six sessions over a 43-day period. In contrast to other TA studies, results suggested a reverse "U" shaped trajectory, in which onset of TA was not associated with a linear decrease in the symptoms, but rather a transient period of significant worsening from baseline through the TA intervention period (r = .48), due to increased emotional awareness during the intervention—likely a result of uncovering her bereavement feelings—followed by moderate yet significant improvement in the two months following completion of the TA (r = −.37).

Germane to the current study, Fantini and Smith (2018) studied the TA of a university student who sought to understand why she felt emotionally disconnected from herself and unable to express anger. The TA included five sessions over 28 days, and a follow-up session three weeks later. In this case, results also suggested an inverted "U" shaped trajectory, with a spike of symptomatic distress in the week after an emotionally arousing Extended Inquiry, compared to previous average ratings (r = .81). The authors speculated that, through the Extended Inquiry, the clinician was able to help the client to break through the emotional disconnection and to get in contact with previously dissociated distressing affect states. In this case, results showed that, at the end of the TA, and over the course of the follow-up period, the client's perceived distress returned to similar levels to those experienced during the baseline (r = −.73). At the follow-up session, the client described herself as more able to express anger and less disconnected, allowing the authors to interpret this finding as a reflection of the client being able to use more adaptive strategies than emotional disconnection to regulate her emotions.

The present study replicates many of the design features of a study by Smith et al. (2015) that involved idiographic analysis of 10 repeated-measures single-case studies to examine the potential effectiveness of TA in reducing clients' internalizing symptoms (e.g., anxiety, depression) and improve the processes and outcomes of ongoing psychotherapy. All participants were referred to the study by their psychotherapists. All clients were asked to complete daily ratings on individualized scales of their presenting problems during baseline, intervention, and follow-up periods. The TA process included the collection of assessment questions, a multimethod personality assessment battery, and a feedback session with the assessor and the referring therapist (the recommended practice when clients are referred for TA by another professional who oversees ongoing care). The average total time of the TA was five hours, and the length of intervention ranged from 22 to 79 days depending on the number of tests administered, which varied in accordance with the nature of the assessment questions. Results indicated that participation in a mid-therapy consultation using TA was correlated with a significant reduction in clients' symptomatic distress (aggregated effect across the 10 cases: d = −.50), with significant improvements for six out of nine participants when examined ideographically. Also, the joint feedback to clients and referring therapists coincided with a statistically significant increase in client-reported working alliance with their therapist. Aggregate analysis of the trajectory of change across participants showed that the TA linearly decreased symptoms and distress from baseline and that the rate of downward change slowed with time during the follow-up period. The authors highlighted some limitations in their study. First, participation was incentivized for both referring therapists and their clients. Hence, participants did not actively seek a TA to address their current problems. Also, participants were adult patients already in therapy. As such, the results of the Smith et al. (2015) study may not be representative of self-referred college-aged clients with no prior or current experience in psychotherapy.

This study

The present study aimed to see whether a 5-session Therapeutic Assessment (TA; Finn, 1996; Fantini et al., 2022), requiring less than eight hours of direct service time, could be an effective intervention to address students' presenting mental health concerns. Further, we set out to explore whether the type of presenting concerns was associated with the trajectory of change for those students who did and did not experience significant symptomatic improvement during the intervention. The study was designed to be pragmatic, meaning delivery occurred within the typical constraints of the services offered in university counseling centers, and was similar to that of Smith et al. (2015).

Based on prior TA research, we hypothesized that a statistically significant improvement in mental health symptoms would be associated with the onset of TA for some, but not all, participants. Thus, we also aimed to explore what might explain who benefits, and who does not, from a brief TA intervention in a university counseling center. Few prior studies used designs capable of exploring the differential effect of TA either due to reliance on group-based comparisons or sample sizes of replicated single-case studies were too small to posit similarities across participants. Exemplar case material is presented to illustrate the findings.

Methods

Participants

Participants were eight students consecutively presenting to the Counseling Service of EDUCatt[1] at the Catholic

[1]The Ente per il Diritto allo Studio dell'Università Cattolica (EDUCatt) [the Institution for the Right to Study of Catholic University of the Sacred Heart] is the institution supporting the right to study of students enrolled in the Catholic University of the Sacred Hearth. It provides scholarships and low-cost services such has dormitories, medical care, psychological counseling, books and publications, and others.

University of Milan in the period between February 2015 and March 2015. All participants were female students. Mean age was 23.6 years (SD = 1.01). Participants were enrolled in both undergraduate and graduate courses of Law ($n = 1$), Languages ($n = 4$), Economy ($n = 2$), and Literature and Philosophy ($n = 1$). All participants were White and Italian native language citizens. Seventy-five percent lived in Milan prior to university and 25% were residents of Milan for their university studies. All participants, prior to their first session within the Counseling Service, provided informed consent to participate to the study. Participants received the TA at no charge as an incentive for participating. Research was approved by the Institutional Review Board of Catholic University of Milan, approval number #9-17.

Treatment fidelity

Study clinicians were licensed clinical psychologists in Italy, all of whom were certified by the Therapeutic Assessment Institute in TA with adult clients. To further ensure treatment fidelity, each assessor spent five hours of individual supervision with Stephen E. Finn, the developer of TA. The supervision was completed upon assessors' request. It addressed assessors' questions about test interpretation, case conceptualization, and planning and delivering the Intervention Session and the Summary and Discussion session.

Procedure

The study followed a replicated single-case time-series design with three distinct study phases: baseline (intake to first session of TA), intervention (the TA protocol), and follow up (approximately three weeks later). Average lengths of the study phases were 10.62, 43.00, and 20.37 days, respectively. After calling the university Counseling Service to schedule intake appointments, eight consecutive students agreed to participate in the research study and completed an intake with a member of the research team who explained the study procedures and assisted the student in generating individualized symptom rating scales that could be reported daily. The rating scales focused on the participants' main concerns transformed into quantifiable items (e.g., "efficiency", "self-legitimation", and "anxiety") that the student rated on a Likert scale from 1 (low) to 10 (high). The participants committed to complete the ratings daily throughout the three phases of the study. Daily data entry occurred *via* a web-based application managed by an independent researcher, who sent a reminder if a student failed to respond for two consecutive days.

Intervention protocol

TA developer Stephen E. Finn guided the authors in designing the TA intervention for this study. The protocol involved five sessions of 90 min in duration each: (a) the gathering of assessment questions (one session); (b) the administration of psychological tests followed by an Extended Inquiry (two sessions); (c) an Assessment Intervention session; and (d) a collaborative discussion of the assessment results. Written feedback was also provided to the students. Among the eight cases there were small variations in the selection of psychological tests. For example, in seven cases, after the gathering of the assessment questions, the clinician arranged for the participants to independently complete the Minnesota Multiphasic Personality Inventory-2, Restructured Form (MMPI-2-RF; Ben-Porath & Tellegen, 2008) and run an Extended Inquiry in the following session. The third session was often focused on the administration and Extended Inquiry of the Early Memories Procedure (Bruhn, 1992). However, in one case, during the second session, the clinician administered the Early Memories Procedure and conducted an Extended Inquiry on it the third session. In two cases, the clinician administered a performance-based test or the Twenty Statements Test (Kuhn & McPartland, 1954) instead of the Early Memories Procedure. Formal DSM 5-TR diagnoses (American Psychiatric Association, 2022) are not available for participants. TA focuses on addressing the clients' concerns; unless knowing their diagnosis is one of their assessment questions, assessors do not administer the necessary tests to determine one.

Analysis plan

To assess the degree to which statistically significant change in self-reported symptoms were associated with the onset of TA, we analyzed each item reported by the participant using Simulation Modeling Analysis (SMA; Borckardt, 2006), which is a program designed for time-series analysis of short data streams. SMA calculates an effect size (Pearson's r) of the magnitude of the change in the average symptom scores between different phases (i.e., level-change analysis). We computed the level change in symptom ratings from the baseline period and the intervention period together to the follow up periods. As SMA is a simulation-based analysis program, it also provides the exact probability of obtaining the observed effect size from a pool of 5000 simulated data streams with the same degree of autocorrelation (serial dependence) and similar number of data points in each phase. The default autocorrelation model is lag-1 autoregressive. SMA uses the autocorrelation estimate for the entire data stream in the simulation models to reduce Type 1 error resulting from the small number of observations in the data stream. Significant level-change analysis provides evidence for the hypothesis that symptom reduction was correlated with the conclusion of TA.

Second, we examined the symptom trajectories of participants. Using the results of the first analysis, we split the sample into two groups: 1) those who experienced statistically significant change and 2) those who did not. We then conducted a slope-change analysis in SMA to assess the degree of correlation between the observed data and an a priori hypothesized model (Figure 1 presents the three models). We first ran slope-change analyses on three a priori trajectory models that have been found in prior research on

TA. The first model hypothesizes a flat baseline period followed by a linear decrease in symptoms, either during the intervention or follow-up periods (Aschieri & Smith, 2012; Tarocchi et al., 2013). The data from clients who experienced a statistically significant level change in symptoms between baseline and TA onset were aggregated to test if their trajectory fit with either one of two trajectories (1) flat slope during the baseline and the intervention phases combined, followed by linear improvement during the follow up phase (indicating that change occurs during follow-up) (*SMA model 1*) or (2) a flat slope during the baseline phase, linear improvement during the intervention phase, and a flat slope during follow-up (indicating all change occurred while TA was being delivered) (*SMA model 2*). Data from the clients who did not experience a statistically significant level change were then aggregated to test if their trajectory of change fit with the reverse "V" shape of change suggested in other studies (Durosini et al., 2017; Fantini & Smith, 2018). The a priori model (*SMA model 3*) was a flat baseline period, a reverse V-shape of symptom severity during the intervention period, and a flat slope during follow-up period. The a priori (hypothesized) trajectory models are visually depicted in Figure 1. Prior to aggregating the scores, all ratings were transformed into z-scores to provide a uniform scale of daily ratings.

As a post hoc analysis, within each group, two authors independently coded each of the student's rating scales as either "self-related concerns" (15 items; e.g., "pessimism", "anxiety") and "relationship problems" (8 items; e.g., "needing others to feel happy", "readiness to confront parents")—two common types of concerns among students seen in university counseling centers. This categorization was made for our exploratory aim of explaining differential response to a brief TA. Interrater agreement was strong (Cohen's k = .80). Disagreements were discussed until agreement was found.

Results

Table 1 presents the results of the level-change analysis conducted in SMA comparing the aggregated daily ratings during the baseline and intervention phases combined to those from the follow-up phase for each participant. Figure 2 depicts clients' actual data streams for their aggregated variables. Results indicated that four of the eight participants experienced statistically significant reduction in the mean level of symptomatic distress in the follow-up periods, compared to baseline and intervention levels. The effect sizes for significant cases ranged from small-medium in one case (r = .36, p = .035) to medium-large, in the three other cases (r = .59, p = .004; r = .77, p = .004; r = .58, p = .002). For the four participants who showed a significant level change, results from the slope-change analysis indicated significant, strong correlations between the observed data and the a priori SMA model 1 (flat during baseline and intervention and linear decrease during follow-up, r = .67, p = .001) and SMA model 2 (flat slope during the baseline phase, linear improvement during the intervention phase, and a flat slope during follow-up, r = .69, p < .001). The four participants who did not experience significant level change in self-reported symptoms did not show a statistically significant correlation with SMA model 3 (r = .10, p = .221).

Case examples of the two typologies

The following two cases are emblematic of the two client typologies identified: Jasmine (Case 1 in Table 1) presented with "self-related concerns" and Christina (Case 5 in Table 1) presented with "relational problems." Test data are presented in Appendix A (Supplementary materials).

Jasmine ("self-related concerns")

At the time of the TA, "Jasmine" was in her mid-twenties and was a third-year doctoral student. Two months before the deadline of her dissertation, she requested counseling to find out how to complete it, since she has only been able to write the first couple of pages. In the first session with the assessor, she appeared tearful and said she was desperate. She already knew that she would not have had enough time to complete her dissertation by the deadline, even if she devoted all her time and energy to writing. Moreover, she said she felt overwhelmed by guilt and shame for being in this situation. She blamed herself for having lost too

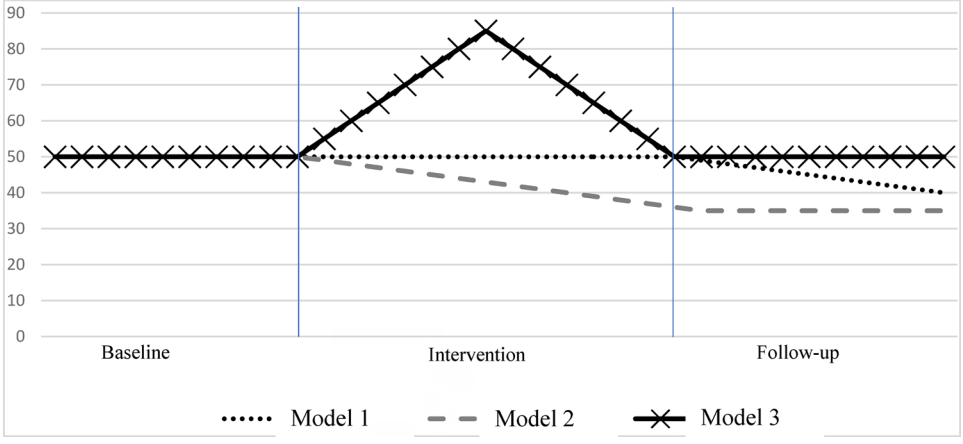

Figure 1. Slope-change model 1, 2 and 3.

Table 1. Descriptive statistics, level-change analyses, presenting problem, assessment questions and case conceptualization of each individual client.

	Baseline			Intervention			Follow-up							
Participant	N	M	SD	N	M	SD	N	M	SD	AR	Level-change	Problem	Assessment Questions	Conceptualization
1	6	19.00	3.16	39	18.23	1.90	13	16.54	1.56	.295	−0.36*	Cannot study or write anything for her PhD dissertation	a) Why am I not able to organize my work and finish the dissertation? b) Why do I often feel not comfortable with friends and colleagues?	Unrecognized depression makes it difficult to focus on studying; accumulated shame for the delay in working on the thesis does not allow her to ask for help and makes her face a huge amount of work alone; a history of facing difficulties without enough support from attachment figures led her to feel insecure about herself and wonder about her value.
2	9	29.67	5.05	47	29.00	2.90	16	23.37	3.32	.513	−0.59*	Insecurity in making choices and bursts into tears when strong negative emotions occur	Why am I: a) Overthinking about the past b) Overthinking about the present c) Overthinking about the future d) With no control on my emotional responses e) So insecure?	Difficulty in managing anger (generally dissociated); cannot say no and cannot assert her own opinion; when she cannot avoid conflict, she feels invaded by a mix of emotions that she cannot manage and cries or reacts in a way that she judges exaggerated
3	13	16.23	1.01	35	14.80	1.05	16	12.00	.97	.839	−0.77**	Difficulty understanding one's emotions and making choices with respect to her relationship (continuously undecided if she wants to be with her boyfriend or with another guy)	Why am I: a) Confused b) Feeling overwhelmed?	Past traumatic experiences (mourning, narcissistic mother repeatedly betrays her father and does not care for her daughters) make her "allergic" to the pain of "losing" people, make her intolerable the idea of making someone suffer by leaving him; she doesn't want to risk feeling like her mother: identified with savior and victim and dissociates the persecutor (anger and assertiveness with respect to protecting her desires and needs)
4	13	24.15	4.14	44	24.77	4.61	18	22.89	2.85	.399	−0.19	Anxiety attacks and neurovegetative symptoms in relation to her studies and to her family situation (her mother had a nervous breakdown)	Why do I: a) Feel so much anxiety b) Avoid failure c) Feel ugly d) Feel exhausted?	Growing up she has not been helped to learn to manage negative emotions and to rely on others + in the present she sees her mother suffering and not reacting: facing the family crisis she has negative emotions of sadness and anger that she cannot tolerate and manage, she cannot legitimize them because there is already her mother who saturates all the attention and the resources of the family; when tension becomes intolerable she lets off steam with physical sensations
5	7	4.29	1.98	31	6.23	4.53	16	5.06	3.02	.740	−0.09	Feeling of detachment from emotions, difficulty in expressing anger and addressing problems in her relationships	Why do I feel disconnected from emotions? How can I get rid of the anger toward my mother?	Grew up dissociating sadness and dependency needs; in her relationships she is the "strong one" who helps others; when she found out that her mother cheated on her father and her parents divorced, she dissociated even more from negative emotions and felt less able to deal with feeling hurt. Anger was the only emotion leaking out of her control.
6	16	18.81	3.04	48	20.46	2.31	52	20.11	2.96	.350	−0.02	Severely depressed, symptoms of derealization, anguish and dissatisfaction. "Life doesn't seem mine, I don't feel like myself"	a) Why do I feel so low energy? b) How can I face my parents?	Severely depressed; tends to dissociate pride, joy and anger. She is full of shame, with a very intrusive, judgmental/devaluing, aggressive mother and a father submissive to her mother. Unresolved parental couple conflicts. Still dependent on the family, she struggles to become aware of the family shortcomings, tending to introject and accuse herself
7	7	16.57	7.91	35	12.91	7.11	18	3.44	.92	.598	−0.61**	Outbursts of anger and family problems related to very strong conflicts between divorced parents, she is triangulated	Why do I feel: a) Pessimism b) Anxiety c) Susceptibility?	Seriously conflicting parents since she was a child, often neglecting the protection needs of their daughters, she got caught up in their marriage war. Often triangulated by her parents between secrets, refusals, fights. Disorganized attachment, dilemma between the need for addiction and care and the fear of having people intimately close. Her best form of coping is attack. She oscillates between being overwhelmed by suffering, with much shame and fear, and being defensively dismissive, judgmental, full of anger and with no fear
8	14	6.93	1.68	65	5.25	2.25	14	6.21	2.33	.409	.11	Cannot stay without a boyfriend, cannot choose things she really like	Why do I always need someone else to be happy?	She defends herself from feeling worried and scared for her chronically ill and hospitalized father by focusing on her couple relationship. She trades her self-actualization with her boyfriend's approval and adheres to his wishes even when she realizes that doing so is bad for her.

much time during the previous three years and said that all the work she has done was useless (she had piles of notes and document drafts). She felt disoriented, not knowing where to start with these materials.

Working on her assessment questions (see Table 1) the assessor found out Jasmine has been a "straight A+" student in high school, undergraduate, and graduate studies. However, she started to question her academic skills, and she said that she probably was overestimating her IQ. She also kept comparing herself with her peers, which she felt were more successful than her in the program. She also felt shame and a desire to withdraw from classes and avoid her academic mentor.

Her MMPI-2-RF showed a client in a crisis ($F = 81$), struggling with profound depression and anhedonia (EID = 81, RCd = 83), detachment (RC2 = 73) and negative distressing emotions (RC7 = 75). Extended Inquiry of the items "Sometimes I wish I was dead" (True) and "Jasmine" (True) allowed Jasmine to disclose how much she was blaming herself for her problems. Talking about this issue, the assessor asked Jasmine to what extent she felt her mentor was present and available to provide her with guidance and support in finishing her dissertation. Jasmine replied, "How can I even ask him for help, when I cannot do anything I am supposed to do!"

The assessor and Jasmine concluded the session identifying a "vicious cycle": she kept expecting to complete her dissertation alone based on her past academic successes; felt shame comparing herself with the other students in her class, which increased her isolation and withdrawal. The more she felt shame, the more she tried to force herself to write something, but with so much anxiety and shame, a complicated dissertation topic, and a lack of support and advice from her mentor, she could not complete more than notes, which she felt were useless and made her feel even more sad and demoralized.

The following session she completed the EMP. Many of her memories were centered around themes of being confronted with problems alone, without any supporting adult figures even when they would have been age appropriate:

> When I was five or six years old, we moved into a new house. I remember I had to choose the color of my new bedroom. So, my parents let me in a room full of colors to choose the one I preferred but I started to play with a little toy I had with me. When they came back from talking with the architect, I forgot the reason we were there, and my father told the architect, "I will choose the color, she is too silly to do it by herself."

Talking with Jasmine the assessor questioned the appropriateness of her parents' scaffolding to allow her to make her own choice. In the Assessment Intervention session, the assessor explored with Jasmine the extent to which her mentor was "falling short" from providing her with adequate support on the dissertation, which put her in a similar position to the one she described in her EMP. Jasmine said her mentor was almost retired and he was not following her directly but rather through a teaching assistant, which disagreed with the mentor's initial guidance. Jasmine started to realize how her shame and self-blame were depriving her of the energy to confront her mentor and ask more actively for the help and guidance she needed and deserved. The TA ended with Jasmine reporting less self-blame and less shame for her difficulties in completing the dissertation and accepting to continue the counseling for the remaining available sessions in EDUCatt, after which time she would continue psychotherapy privately. A little more than 1-year after the assessment ended, Jasmine completed her Ph.D. and decided to leave academia to engage in a workplace in which she would have more active guidance and support.

Christina ("relational problems")

"Christina" was talkative and energetic from the first contact with the Student Counseling Service. She was a 22-year-old female student seeking consultation to help manage the consequences of her parents' divorce, which had occurred 1 year prior. They divorced when her father discovered that her mother was having an affair with another man, but Christina found out about the affair earlier while eavesdropping on her parents fighting. She felt betrayed when, months later, they communicated to her their separation without mentioning the real reason. In that period, she felt increasingly unable to control her anger toward her mother (who most of the time acted as if nothing had changed) and her father (who became depressed and could not effectively take care of himself). Despite the situation, she kept studying and achieving excellent grades, and she empathically supported both parents during their emotional breakdowns after the separation. However, she realized that sometimes she expressed anger toward her mother, and that her composure in her family was part of the larger problem of lacking spontaneity (also with her boyfriend) (see Table 1 for her assessment questions).

Christina's MMPI-2-RF was valid and showed no elevations above the cutoff (T score > 65) in any of the test scales. She instead depicted herself as able to manage life difficulties without feeling overwhelmed (EID = 49; RCd = 51; Helplessness/Hopelessness, HLP = 38), and as a self-confident person (Self-Doubt, SFD = 42; raw score = 0) with very strong ability to find pleasure in life (Low Positive Emotions, RC2 = 40). In discussing these results, she agreed that only anger (ANP = 68) disturbed her a great deal.

On the EMP, Christina described various childhood experiences representing variations on the theme of facing emotionally distressing situations (i.e., being ill in the nurse's office at a camp [age 6], breaking a finger and feeling a lot of pain [age 7]) without the support that she was longing for (her parents were far away or at work). In such situations, she felt overwhelmed by painful and distressing emotions that she was dealing with alone. The Rorschach Performance Assessment System (R-PAS; Meyer et al., 2011) helped the clinician further understand that Cristina had outstanding resources (MC SS = 138; MC − PPD = 148), but also a general difficulty in managing emotionally arousing situations (CF + C/SumC SS = 116, WSumCog SS = 117, and four of the five Cognitive Codes appear in responses involving chromatic color), particularly situations involving anger and aggressive pulls (ACG and AGM with cognitive codes) that

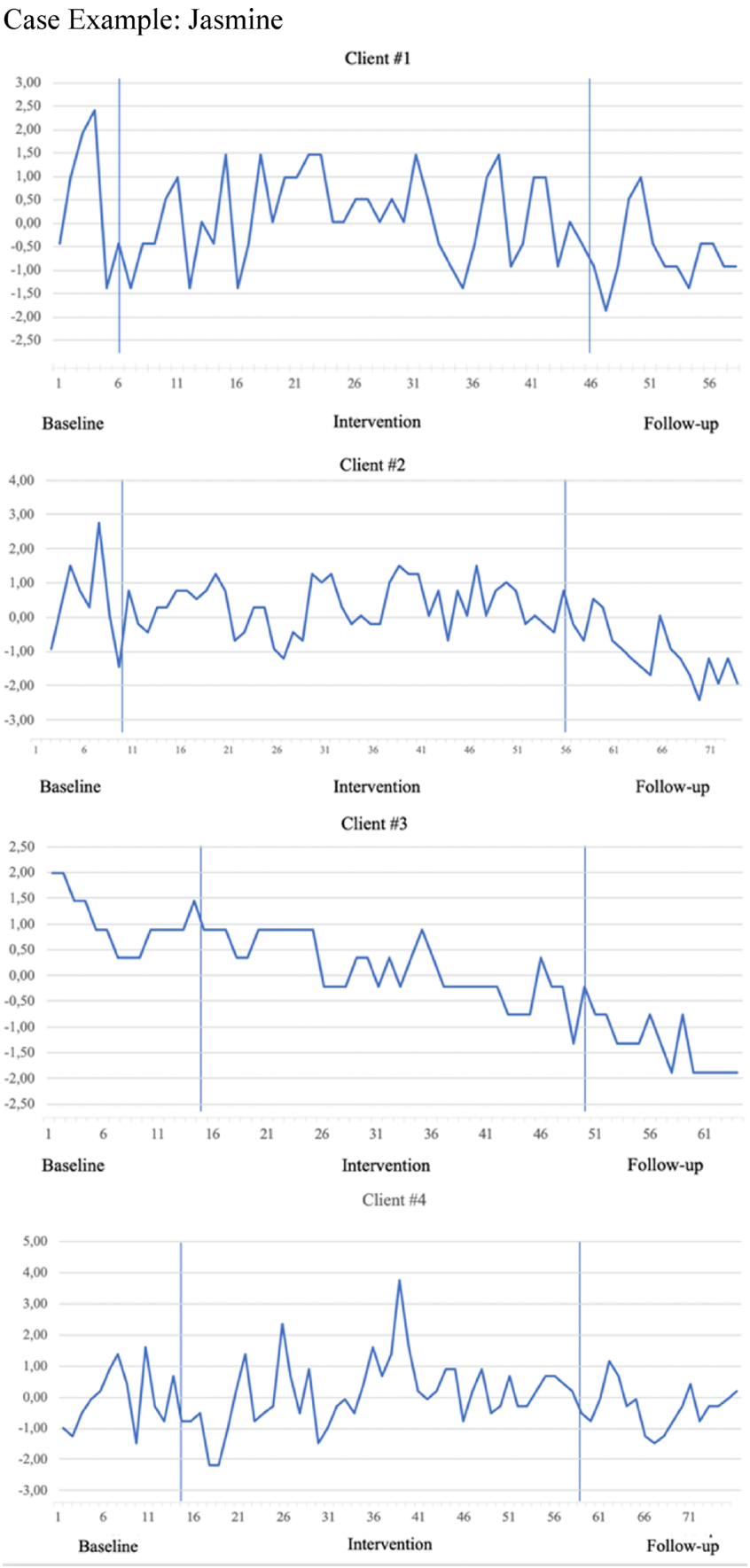

Figure 2. Client data streams.

Note. The Y-axis represents an aggregate measure of each client's individualized daily rating scales that represent an overall "Symptomatic Distress" score. Individual ratings that were reported by the client on a 1-9 scale were transformed into z-scores to provide a uniform scale for the purposes of aggregation. Data streams for each client, divided by Baseline, Intervention and Follow-up ratings. The two case examples in the article are: Jasmine (Client #1) and Christina (Client #5).

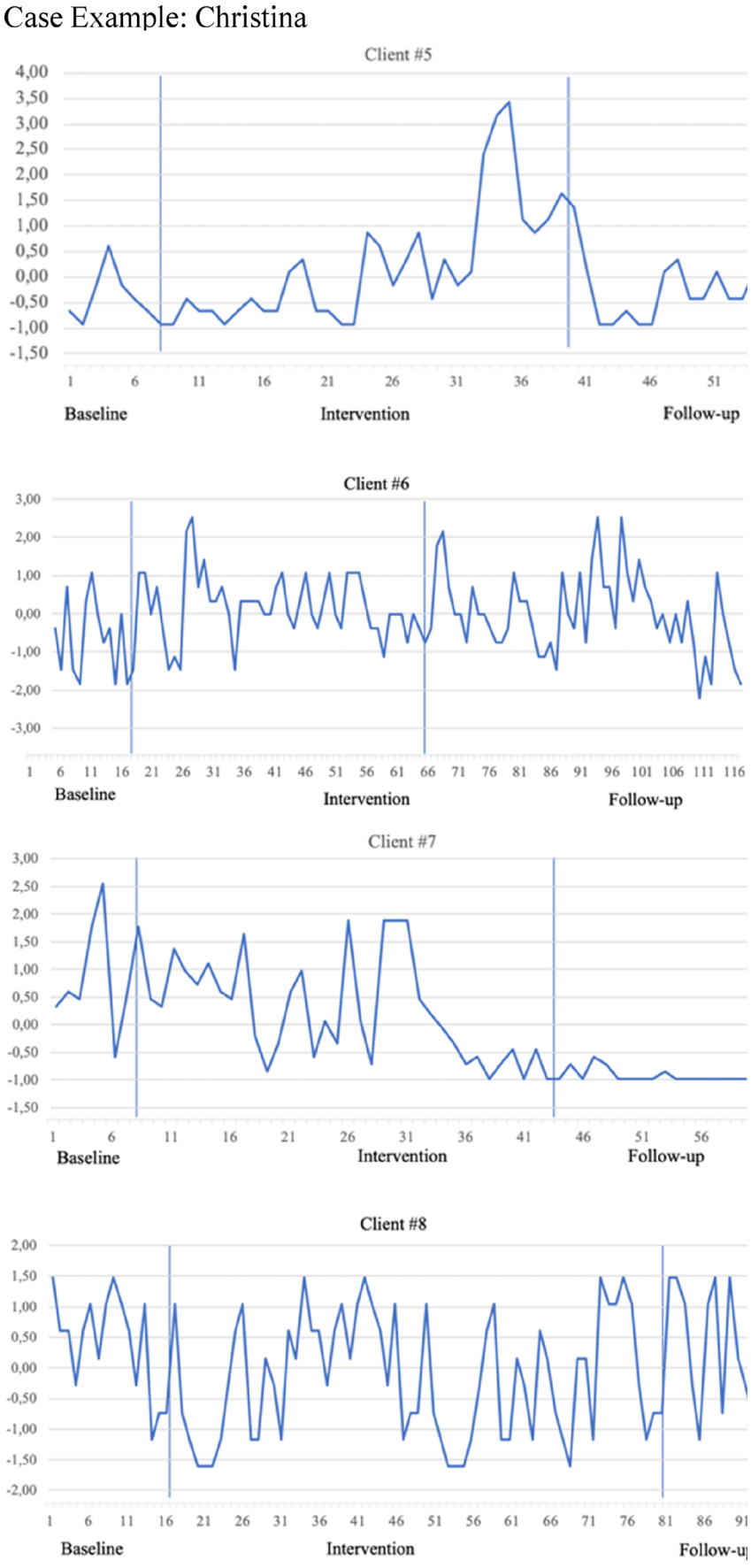

Figure 2. (Continued)

caused her to react in unfiltered ways and lose her ability to think clearly and effectively.

The assessment allowed Christina to realize that dysphoric, depressive, or sad feelings seemed absent in her emotional world, as might normally be expected given the situation, and that the emotional disconnection she felt most likely represented avoidant mechanisms put in place to protect her against having distressing feelings surface in relation to the loss of her intact family. She realized she saw herself as a cheerful and resourceful woman, caring for others, and able to face life's difficulties without losing her optimism and hope, and connected it to her memories, through which she understood she learned to expect that her need for support would go unfulfilled. Her solution seemed to be to simply to stop feeling these emotions altogether, except for anger. Splitting off negative emotional states related to loss, sadness, and grief allowed her to cope with the situation, but it left her with a sense of disconnection from herself and the world around her. Christina and the assessor started addressing sadness associated with grieving the loss of her intact family as the loss of idealization of her parents would have been too much for Christina to tolerate, given her tendency to manage the distress alone. The assessment revealed that Christina was prone to split off distressing emotions well before the family crisis. However, in the aftermath of the crisis, the disconnection from such emotions became stronger and distressing in and of itself. Her YTVC′ score suggested that in a subsequent psychotherapy, Christina likely could be helped to better recognize and articulate her emotions in a way that she was not able to do at the time of the assessment.

Discussion

The current study aimed to test whether a 5-session TA could be an effective intervention to address students' presenting mental health concerns in a university counseling center. Single-case studies using daily ratings of clients' distress have suggested some heterogeneity in the change process and in the overall effect of TA on client symptoms. The replicated single-case research design also allowed us to examine the trajectory of change for each client, and among the groups of students that changed and did not change because of participating in a brief TA.

Students who experienced a significant improvement in symptomatic distress during the intervention started changing immediately after the gathering of assessment questions (1st session) and kept improving across the 5-session TA, and the follow-up period. This result suggests that early indications of impact are harbingers of the likely overall impact of this brief intervention. This could be due to establishing a strong therapeutic alliance as clinician and client work together on formulating goals for the intervention in the form of assessment questions. However, this also suggests that the impact of TA extends beyond the end of the sessions and clients continue to change also during follow-up. Previous research (Hilsenroth et al., 2004) has found that clients undergoing a TA showed a significantly stronger long lasting therapeutic alliance compared to those who received assessment as usual. Future research on university counseling centers ought to include an examination of therapeutic alliance as a potential mechanism of short- and long-term intervention effects.

Regarding those clients who did not experience a statistically significant improvement in symptoms correlated with TA, the results revealed some variation in the trajectory of change across cases. Post-hoc analysis of clients' presenting problems, questions and case conceptualization among these clients showed that TA mainly addressed the stability of their defenses. The TA of Case 4 focused on increasing client's contact with her underlying sadness and anger that she did not mentalize and ended up being expressed though her body. The TA of Case 5 focused on the emotional disconnection that was preventing the client to face the grief of her parents' separation. The TA of Case 6 focused on the clients' dissociation and idealizing defenses that protected her from experiencing negative feeling for her parents and see them in a more realistic manner. The TA of Case 8 helped the client realize that her preoccupations for her couple's relationship were covering more deeply seated worries for her father's chronic illness (Table 1). In all these cases, TA helped the students get in contact with the underlying painful emotions they were not able to recognize, partially due to their symptoms and the stability of their psychological defense mechanisms. Although clinically relevant and therapeutically meaningful, especially in a long-term personal development, this process may not be accompanied by an improvement in the short-term subjective perception of wellbeing that is generally reflected in the changes in the clients' rating scales scores. On the opposite, among the cases that reported a symptoms' level change after the TA psychological defenses were less stable, and clients were more easily overwhelmed by their painful emotions. Case 1 was daunted by her severe depression. Case 2 struggled when she became overwhelmed by anger and by the extent she had to protect herself from anger by overthinking and feeling powerless over her emotional responses. Case 3 could not enjoy relationships due to her fear of being abandoned. Case 7 was oscillating between being overwhelmed by suffering, with much shame and fear, and being defensively dismissive, judgmental, full of anger and with no fear.

Another possible reason for the difference in symptom reduction among cases could be linked to the typology of their presenting problems as was revealed in our post-hoc analysis aimed at detecting patterns of intervention response. For those who benefited from TA, the students had predominantly "self-related concerns." For those that did not benefit, concerns were characterized as predominantly "relational problems." These results might suggest that either students experience change more rapidly when focused on their own self-views rather than on their relationship with others, or that TA is less effective on students' relational problems than on their struggles with their self-views. Further studies using different research designs may address this issue more effectively.

Limitations

This study involved eight consecutive students who accessed a university counseling center. Hence, given the variability of issues that students present to university counselors, the results should not be generalized. Rather, the results serve to generate hypotheses to be tested in future research with designs and samples capable of answering such questions. Additionally, because of this recruitment strategy, all eight students in the study were female. While female students are more likely than male students to access university counseling services (Green et al., 2003), this represents a limitation to generalizability. The assessment of the effectiveness of the intervention was carried out uniquely using student's self-ratings on their individualized problems. While this approach allows to capture the specific issues that students are concerned with, these analyses should be corroborated by the use of standardized ratings scales in future research. Further, this study involved the use of non-standardized rating scales: symptom levels cannot be quantified and the scales cannot be compared in a meaningful way except for relative differences in magnitude. However, the use of non-standardized scales provides for a better understanding of the subjective experience of each student, allowing the focus to be on symptoms that are meaningful to the client. This approach is consistent with the TA perspective and with previous literature on single-subject research (Borckardt et al., 2008).

Conclusions

Our findings suggest that TA could be an effective brief intervention for female college students with certain presenting concerns, mostly those related to self-view and not relational difficulties, in the context of university counseling centers. This brief 5-session TA intervention should be considered in services with a limited budget or other constraints (only able to offer a limited number of sessions).

For those who benefited from the TA, statistically significant improvement was observed at the immediate outset of the intervention and was maintained over the course of the TA and after its conclusion, showing the potential impact that a collaborative relationship between client and clinician may have in this model and context. Students who did not change seemed to have needed to deconstruct their defenses, requiring an intervention that did not consist of immediate symptom reduction, but necessitating a phase of increased distress prior to symptom improvement. Although the reverse "U" shaped curve was hypothesized based on prior research with TA, this study did not find support for this trajectory of change.

Our results also suggest that TA impacts clients' well-being in different ways, depending on their presenting problems and psychological functioning. We found evidence to suggest that a brief TA in college counseling centers might have a greater impact on students with self-related concerns than those presenting with relational problems as the primary concern. Being more complex, relational problems might require more time might be necessary for an improvement in these variables to occur. Practitioners who use TA should be mindful that it may take longer to work on relationship problems, as they involve different actors and not only the client undergoing treatment. Further research is needed to study symptom improvement and trajectories of change for clients referring with predominantly self-issues and those with relational issues given the interesting differences found in this replicated single-case time-series study.

Declaration of interest

Drs. Aschieri, Fantini, and Smith are on the Board of Directors of the Therapeutic Assessment Institute.

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Data availability statement

The complete dataset is available by request to the corresponding author.

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