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Comparative Utility of a Single-Item vs. Multiple-Item Measure of Self-Efficacy in Predicting Relapse among Young Adults

Bettina B. Hoeppner, Ph.D.[a], **John F. Kelly, Ph.D.**[b], **Karen A. Urbanoski, Ph.D.**[c], and **Valerie Slaymaker, Ph.D.**[d]

[a]Center for Addiction Medicine, Massachusetts General Hospital, Department of Psychiatry, 60 Staniford Street, Boston, MA 02114, USA; bhoeppner@partners.org

[b]Center for Addiction Medicine, Massachusetts General Hospital, Department of Psychiatry, 60, Staniford Street, Boston, MA 02114, USA; jkelly11@partners.org

[c]Center for Addiction Medicine, Massachusetts General Hospital, Department of Psychiatry, 60, Staniford Street, Boston, MA 02114, USA;, kurbanoski@partners.org

[d]Hazelden Foundation Butler Center for Research, Pleasant Valley Drive, Center City, MN 55012; VSlaymaker@Hazelden.org

Abstract

Single-item measures of psychological experiences are often viewed as psychometrically suspect. The purpose of this study was to evaluate the validity and utility of a single-item measure of self-efficacy in a clinical sample of treatment-seeking young adults. Inpatient young adults (N=303; Age 18–24; 26% female) were assessed at intake to residential treatment, end of treatment, and at 1-, 3-, and 6-months following discharge. The single-item measure of self-efficacy consistently correlated positively with a well-established 20-item measure of self-efficacy and negatively with temptation scores from the same scale, demonstrating convergent and discriminant validity. It also consistently predicted relapse to substance use at 1-, 3- and 6-month assessments post discharge, even after controlling for other predictors of relapse (e.g., controlled environment), while global or subscale scores of the 20-item scale did not. Based on these findings, we encourage the use of this single-item measure of self-efficacy in research and clinical practice.

Keywords

self-efficacy; substance use relapse; young adults; psychometrics

1. Introduction

Single-item measures of psychological experiences are often viewed as psychometrically suspect. One of the reasons may be that with single items, the internal consistency reliability statistic cannot be computed. More importantly, however, single-items are more vulnerable to random measurement errors, which are more likely to be cancelled out with multiple

Corresponding Author: Bettina B. Hoeppner, Ph.D., Center for Addiction Medicine, Department of Psychiatry, Massachusetts General Hospital, 60 Staniford Street, Boston, MA 02114., bhoeppner@partners.org, Tel: 617-643-1988, Fax: 617-643-1998.

items. Single items may also be more vulnerable to unknown biases in meaning and interpretation. Multiple-item scalesare designed to sample a broader range of meanings to cover the full range of a construct, while with single items, the respondent is left with greater ambiguity to interpret the meaning of the item.

Nevertheless, the use of single-item measures is appealing. From a practical point of view, advantages like shortened survey length and reduced research costs are compelling. Single-items are also less monotonous and time-consuming for respondents, and thus may lead to greater survey effectiveness, especially in clinical populations, such as, for example, elderly medical patients. There are also ethical reasons to prefer measures that minimize participant burden, and pragmatic reasons, where a multitude of items to assess a single construct would render a study unfeasible, as for example, in ecological momentary assessment studies. Additionally, single items are more easily developed than multiple-item scales, and may be more adaptable to different populations.

There are also psychometric advantages associated with the use of single-item measures. The use of a single-item measures reduces the chance of common method variance, where spurious correlations are observed due to the use of the same response format rather than the content of items. Additionally, the face-validity of the single-item measure should not be discounted. Here, it is important to note that the intended use of single-item measure is to assess unidimensional or global constructs, where it has been shown that single-item measures have comparable or equal predictive validity compared to multiple-item measures for constructs in psychological, marketing, and medical research. For multi-faceted constructs, single-item measures for each facet have been increasingly suggested in the literature, as for example, five single-item measures of the Big Five constructs of personality.

In substance use research, relatively little work has been done to evaluate the validity and utility of using single-item measures. Here, it has been found that in primary care patients with unhealthy alcohol use (n=312) single-item measures of readiness, importance, and intention to cut down were significantly associated with higher odds of alcohol consequences, but not alcohol consumption. In alcohol-dependent inpatients (n=142), a single-item measure of self-efficacy contributed to the differentiation between abstainers and relapsers 12 weeks following discharge, but the authors commented that the predictive validity of self-efficacy measures was likely limited due to a positive response bias.

Self-efficacy is a dominant construct across both general health behavior theories and substance use specific theories of relapse. Its importance is stressed in Social Cognitive Theory (Bandura, 1986), the Theory of Reasoned Action, the Theory of Planned Behavior (Ajzen& Madden, 1986), the Transtheoretical Model (TTM: Prochaska&DiClemente, 1983) and the Health Action Process Approach (Schwarzer, 2008) as well as more specific models of addiction and relapse, such as the Relapse Prevention Model (Marlatt& Gordon, 1985; for a reconceptualized version, see Witkiewitz&Marlatt), the Dynamic Regulatory Feedback Model (Niaura, 2000; Niaura et al., 1988), and the Two Affect Model (Baker, Morse, & Sherman, 1987; for a reforumulation, see Baker, Piper, & McCarthy, 2004).Self-efficacy is among the most consistent predictors of substance use relapse, and thus has clear clinical and practical relevance to substance use research. In this study, we evaluated the validity and utility of a single-item measure of self-efficacy in a clinical sample of treatment-seeking young adults. We compared this single-item to a well-established but much longer 20-item measure. Like many other multiple-item self-efficacy scales, the selected comparison scale measures abstinence self-efficacy across several high-risk scenarios (e.g., abstinence self-efficacy in negative affect versus positive social situations, or while experiencing withdrawal symptoms). Such specificity, however, does not imply that the construct of

abstinence self-efficacy fails to be unidimensional, and thus, would be inappropriate for single-item measurement. Rather, the structure of self-efficacy scales tends to be hierarchical, where subscales are frequently summed to create a global, psychometrically sound measure of abstinence self-efficacy. It is this global experience that a single-item self-efficacy measure seeks to capture. Note also that such a global measure does not detract from the domain-specificity of self-efficacy: the goal remains to measure abstinence self-efficacy. Since self-efficacy is a dynamic construct that is theorized to undergo substantial changes over time, we compared it to the multiple-item measure at several follow-up points from treatment entry to six months after discharge in order to establish its validity. Based on findings from other single-item measures, we hypothesized that, compared to the multiple-item measure, this single-item measure would have comparable if not equal predictive utility in predicting relapse to alcohol use.

2. Materials and Method

2.1. Participants

Young adults (18–24 years old) entering a residential substance use treatment program in the upper Midwest (*n*=303) were enrolled in a naturalistic study of treatment process and outcome. During the recruitment period (October 2006 to March 2008), a total of 607 patients were admitted to treatment. A small number of potential participants left treatment before recruitment could take place (*n*=6) or were not approached by staff for recruitment (*n*=14). For the remaining patients, a stratified recruitment process was used, where recruitment efforts targeted only every other admitted patient aged 18–20, while every patient aged 21–24 was approached. The stratified approach was used, because in general, patients admitted to the treatment facility were predominantly aged 18–20, and our goal was to recruit a representative sample of young adults between the ages 18–24. Of those approached (*n*=384), 64 declined or withdrew participation. Reasons for non-participation included not wanting to participate in the follow-up interviews (44%), not being interested in the study (31%), wanting to focus on treatment (14%), and legal issues (2%). Following enrollment, an additional 17 participants withdrew prior to the baseline assessment. The final recruited sample of 303 represents 78.9% of those approached for participation.

Participants were predominantly male (73.9%), with an average age of 20.3 (SD = 1.6) years at treatment entry. The sample was predominantly Caucasian (94.7%), with 1.3% African American, 1.7% Native American, 1.0% Asian, and 0.7% self-identified as “other”. Hispanic ethnicity was reported by 0.6% of the sample. Most participants had completed high school or equivalent (83%), some had attended college (40%), but only rare exceptions (1.7%) had completed a higher degree by treatment entry. The most common primary substances at treatment entry were alcohol (27%) and marijuana (27%), followed by heroin (13%) and cocaine (10%). The vast majority of patients (99%) had a substance use dependence diagnosis at intake1, as assessed via a structured clinical interview. On average, participants remained in the residential treatment program for 25.6 (SD=5.7) days. The majority of patients were discharged with staff approval (84%).

2.2. Procedure

After enrollment into the study, participants were contacted by research staff to set up an interview during which a series of questionnaires were administered. Subsequent assessments took place at end of treatment (87%), and 1 (84%), 3 (82%) and 6 (74%)

[1]Specifically, the substance use diagnoses in this sample were: Alcohol: dependence 56.8%, abuse 19.5%; cannabis: dependence 53.8%, abuse 16.2%, opiates: dependence 27.4%, abuse 7.3%, stimulants: dependence 15.8%, abuse 5.3%; hallucinogens: dependence 7.9%, abuse 6.6%; sedatives: dependence 7.6%, abuse 6.9%; and poly-substance dependence 11.9%.

month(s) after discharge. Each assessment included an interview portion, completed either in person or by telephone, and self-administered surveys, which were completed online through a secure login or using "paper and pencil" measures and returned by mail. Participants were compensated for their time at the rate of $30, $30, $20, $30 and $40 for the baseline, end of treatment, 1-, 3-, and 6-month assessments, respectively. All procedures were reviewed and approved by the Institutional Review Board at Schulmann Associates IRB, an independent review board, and all participants signed informed consent documents.

2.3. Measures

Single-item self-efficacy measure—Participants were asked to rate the following item on a 10-point scale: "How confident are you that you will be able to stay clean and sober in the next 90 days, or 3 months?" The end-points of the scale were anchored (i.e., 1 = "not at all confident", 10 = "very confident"), as was the mid-point (i.e., between 5 and 6, text read "somewhat confident"), but most points did not have a verbal description.

Alcohol and Drug Abstinence Self-Efficacy Scale (ADSES)—An adapted version of the Alcohol Abstinence Self-Efficacy Scale was used, where items were changed to include other drug use in addition to alcohol. Wording changes included "alcohol/drug use" instead of just "alcohol use", "drinking or using drugs" instead of just"drinking", and "one drink/hit" instead of just "one drink". This 40-item scale assesses both self-efficacy and temptation, where the same 20 items are used respectively, but with different response formats (0 = "not at all confident/tempted", 1 = "not very confident/tempted", 2 = "moderately confident/tempted", 3 = "very confident/tempted" and 4 = "extremely confident/tempted"). For self-efficacy, instructions explained that "we would like to know how confident you are that you would not drink or use drugs in each situation at the present time". Four subscales are distinguished for both constructs. For self-efficacy, the reliability of the four subscales (Negative Affect: α=0.88 (e.g., "When I'm feeling depressed"); Social / Positive: α=0.82 (e.g., "When I'm being offered a drink or drug in a social situation"); Physical and Other Concerns: α=0.83 (e.g., "When I'm physically tired"); Withdrawal and Urges: α=0.81 (e.g., "When I am in agony because of stopping or withdrawing from alcohol/drug use")) and of the combined scale (α=0.92) were high in adults entering alcohol treatment. Additionally, the correlation between total self-efficacy and temptations scores was reported to be ρ=−0.65.

Relapse—Form 90-D was administered by trained interviewers to assess substance use at all assessments. We defined relapse as any substance use, which is consistent with the treatment program's emphasis on abstinence and with existing literature. Substance use included alcohol, marijuana, LSD, cocaine, amphetamines, barbiturates, tranquilizers, heroin, narcotics, steroids, inhalants, and participant-defined "other" drugs. We excluded nicotine and medications, such as antidepressants, anti-anxiety medication, anti-psychotics, mood stabilizers, stimulants, pain medication, and anti-addiction medication.

Controlled environment—Form 90-D includes questions about further treatment and involvement with the judicial system. From these questions, we coded a binary indicator of having spent time in a controlled environment between assessments after discharge, including time spent in jail, participation in detox and in-patient treatments (for substance use or other mental health concerns), and living in a sober living environment.

Baseline descriptors—At baseline, demographic information (i.e., age, sex, race, education) and participants' primary substance of use were recorded. For statistical reasons, we recoded race into a binary indicator ("Non-Hispanic white" vs. "other"), education into a 3-level categorical variable ("did not complete high school", "high school diploma or GED",

"some college or more") and drug of choice into a 3-level categorical variable ("alcohol", marijuana", and "other"), where the first named substance was interpreted as the primary drug of choice, if more than one was named (occurred in 1% of cases).

Baseline Substance Use Severity—We used two items of the baseline assessment of Form 90-D as indices of substance use severity prior to study enrollment and treatment: Question 27 ("On how many days during this time period [previous 90 days] have you been completely abstinent from all substances?" (M=23.9, SD=28.1; square-root transformed) and Question 34 ("During the year before treatment, how many days did you spend in hospital for alcohol or other substance-use related reasons?"), from which we coded a binary "never" (coded 0: 74%) and "ever" (coded 1: 26%) indicator.

2.4. Analytic Strategy

To assess convergent validity, we calculated Spearman bivariate correlations between the single-item self-efficacy score and the ADSES total and subscale scores for self-efficacy. To assess discriminant validity, we calculated bivariate correlations between the single-item self-efficacy score and the ADSES total and subscale scores for temptations. Correlations were computed for each assessment (i.e., baseline, end of treatment, 1-, 3- and 6-month) separately.

To assess predictive utility of the single-item self-efficacy score in predicting relapse, we first assessed retention biases, where we used logistic regression analyses to predict retention at follow-up assessments (i.e., 1, 3, and 6 months after discharge) using baseline descriptors (i.e., age, sex, race, education and drug of choice) and substance-use severity (i.e., percent of days abstinent, prior substance-use related hospitalization) as predictors. If significant, we included baseline descriptors as covariates in prediction analyses; we included baseline substance use severity regardless of significance.

We then built a logistic regression model predicting relapse, where we used the previous' assessment self-efficacy scores to predict relapse by the following assessment (e.g., 1-month self-efficacy predicting 3-month relapse). First, we systematically assessed the increase in R^2 values due the addition of the single-item self-efficacy measure to a basic model (i.e., just adjusting for retention biases), and to a model that also included baseline substance-use severity variables (i.e., percent days abstinent prior to treatment, hospitalization due to substance use prior to treatment) and the binary variable indicating having spent time in a controlled environment.

Finally, we assessed the comparative utility of the single-item self-efficacy measure to the ADSES scores by re-running the final model but using ADSES scale scores instead of the single-item measure to predict relapse. We replicated prediction analyses for 1-, 3- and 6-month assessments, where we used the previous assessment's self-efficacy score as a predictor of relapse, and included the concurrent self-report of having spent time in a controlled environment since the last assessment and baseline assessments of retention predictors and baseline substance-use severity as covariates.

Missing data were handled by using multiple imputation (k=50) for the logistic regression models, as recommended. For correlations, which were calculated on concurrent reports, we restricted analyses to retained participants only. Analyses were conducted using SAS 9.2. An alpha level of .05 was used for all statistical tests.

3. Results

3.1. Convergent Validity

Spearman's correlations between concurrent assessments of the single-item self-efficacy measure and the ADSES self-efficacy scale scores (Table 1) ranged from ρ=0.18 (with Physical & Other Concerns at 1-month) to ρ=0.57 (with Social / Positive at 6-month). The average was ρ=0.35. Correlations were higher for 3-month (average ρ=0.40) and 6-month (average ρ=0.50) assessments, and lowest for end of treatment (average ρ=0.28) and 1-month (average ρ=0.27) assessments. Correlations tended to be highest with the global ADSES score (average ρ=0.40), but were higher for Social / Positive at the 1-month (ρ=0.35 vs. 0.30) and 6-month (ρ=0.57 vs. 0.56) assessments. By comparison, the ADSES subscale scores were correlated on average ρ=0.64 with each other, a correlation which increased over time (i.e., ρ=0.57, 0.60, 0.64, 0.68 and 0.71 across assessments). These averages include correlations of the subscales with the total scale score; without correlations with the total score, ADSES subscale scores had an average correlation of 0.57, also increasing over time. All correlations were statistically significant.

3.2 Discriminant Validity

Spearman's correlations between concurrent assessments of the single-item self-efficacy measure and the ADSES temptations scale scores (Table 1) were of similar magnitude as correlations with ADSES self-efficacy score (average ρ=−0.32 compared to 0.35), but importantly and as expected, negative instead of positive. Also similar to correlations with self-efficacy scores, correlations were lowest at baseline (average ρ=−0.26) and end of treatment (average ρ=−0.23) assessments. Unlike correlations with self-efficacy scores, correlations were highest at the 1-month assessment (average ρ=−0.41). Similar to correlations with self-efficacy scores, correlations were lowest with Physical & Other Concerns and Withdrawal subscale scores. All correlations were statistically significant, except for the correlation between the single-item self-efficacy score and the ADSES Physical & Other Concerns temptation subscale score.

3.3. Retention Biases

Prior to conducting predictive analyses, we examined predictors of study retention to control for potential bias. Logistic regression analyses predicting retention at the 1-, 3- and 6-month assessments showed that education and race were statistically significant predictors. Education was a consistent predictor of retention ($\chi^2(2)=7.3$, $p<0.05$, $\chi^2(2)=11.3$, $p<0.01$ and $\chi^2(2)=7.8$, $p<0.05$ for 1-, 3- and 6-month assessment completion, respectively), where participants who did not complete high school or equivalent were less likely to complete follow-up assessments (74%, 74% and 68% for 1-, 3- and 6-month assessment completion, respectively) than participants who attended some college or received a higher degree (reference group; 92%, 92% and 83% for 1-, 3- and 6-month assessment completion, respectively). Race inconsistently predicted retention, where only retention at the 1-month assessment was statistically significant ($\chi^2(1)=8.8$, $p<0.01$, OR=0.19 (CI:0.07–0.56)). At this assessment, non-Caucasian participants were less likely to be reached than Caucasian participants (only 9 out of 16). We included both education and race as covariates for all prediction analyses to be consistent across time points.

3.4. Predictive Utility

The single-item self-efficacy score was a statistically significant predictor of relapse at 1-month ($b=-0.39$, SE=0.08, $p<0.001$), 3-month ($b=-0.41$, SE=0.08, $p<0.001$), and 6-month ($b=-0.36$, SE=0.08, $p<0.001$) assessments after discharge. Retention predictors (i.e., race and education) were not. Total model max-rescaled R^2 values (Table 2) were higher for later

follow-ups, despite increased length between assessments, and increased from R^2=0.17 at 1-month, to R^2=0.20 at 3-month, to R^2=0.23 at 6-month assessments of relapse.

3.5. Incremental Utility

After including covariates describing baseline substance use severity and recently having spent time in a controlled environment, the single-item self-efficacy measure continued to be a statistically significant predictor of relapse 1 month (b=−0.35, SE=0.09, p<0.001), 3 months (b=−0.31, SE=0.08, p<0.001), and 6 months (b=−0.36, SE=0.08, p<0.001) after discharge. Of the other predictors of relapse, having spent time in a controlled environment was a consistent predictor of relapse, before (b=−1.22[0.17], −0.91[0.15], and -0.76[0.15], all ps<0.001, for 1-, 3-, and 6-month assessments, respectively) and after (b=−1.16[0.18], −0.80[0.16], and −0.64[0.16], all p<0.001) the addition of self-efficacy to the model. By contrast, baseline substance use severity descriptors were only predictive of 6-month relapse, and only before the addition of the single-item self-efficacy measure to the model, where having been previously hospitalized for substance-use related reasons (b=0.35, SE=0.17, p<0.05) was positively and percent days abstinent was negatively (b=−0.10, SE=0.05, p<0.5) related to relapse.

Total model max-rescaled R^2 values (Table 2) decreased over time, from R^2=0.41 at 1-month, to R^2=0.33 at 3-month, to R^2=0.32 at 6-month assessments of relapse, but increases in R^2 values due to the addition of the single-item self-efficacy measure increased over time (i.e., +0.07, +0.09, and +0.13).

3.6 Predictive Utility Compared to ADSES scores

By comparison, ADSES total and subscale scores were poor predictors of relapse. Unlike the single-item self-efficacy measure, the ADSES total score did not predict relapse at any follow-up assessment after controlling for retention biases, baseline substance use severity, and recently having spent time in a controlled environment. Subscale scores significantly predicted relapse at only one of the three follow-up assessments. Namely, the Negative Affect (b=−0.41, SE=0.20, p<0.05), Social / Positive (b=−0.39, SE=0.18, p<0.05), and Craving and Withdrawal (b=−0.44, SE=0.21, p<0.05) subscales significantly predicted relapse at the 6-month assessment, when the predictive power of having spent time in a controlled environment had declined. The Physical & Other Concerns (b=−0.46, SE=0.21, p<0.05) subscale score predicted relapse at the 1-month assessment. All other predictions of the ADSES scores of relapse were non-significant.

Consequently, the total model max-rescaled R^2 values (Table 2) of the prediction models using ADSES scores instead of the single-item self-efficacy measure were substantially lower across all three assessments. On average, and compared to each other, ADSES total and subscale scores contributed approximately similar increases in R^2 values, with Social / Positive and Physical & Other Concerns subscales slightly lagging behind. The inclusion of none of the ADSES scores, however, total or subscale, resulted in R^2 values as high as the prediction models that instead used the single-item self-efficacy measure as a predictor of relapse.

4. Discussion

This study evaluated the validity and utility of a single-item measure of self-efficacy in a sample of substance use disorder treatment-seeking young adults. Exceeding expectations, we found that the single-item measure not only significantly predicted relapse to substance use, but did so more consistently and effectively than a well-established 20-item measure of self-efficacy, even after controlling for other predictors of relapse, such as baseline

substance use severity and having spent time in a controlled environment. Additionally, it appears that the amount of variance in relapse explained by the single-item measure increased for later post-discharge assessments, even though the length of time between follow-up assessments increased by one month each time. Meanwhile, other predictors of relapse (e.g., controlled environment) decreased in predictive power over time.

Correlations between the single-item and multiple-item measures of self-efficacy were somewhat low, but similar to a German single-item adaptation of a multiple-item self-efficacy measure. Both the face validity of the item and the negative correlations with temptations suggest that the single-item measure is indeed addressing self-efficacy. The relatively low correlations with the ADSES scores in this study and the Drug-Taking Confidence Questionnaire in the Demmel et al. study, however, suggest that respondents may interpret the single item in a more personalized manner, where they may weigh the importance of certain types of self-efficacy (e.g., in positive social versus negative affect situations) differently to each other when assigning a global score, or may consider scenarios that are not explicitly covered by the multiple-item measure. We speculate that the ambiguity of the single item may have led to a greater personalization or tailoring of the construct of self-efficacy, which in turn allowed for a more potent prediction of relapse. While we cannot definitively explain the underlying reasons, our results do show that the single-item measure performed better than the multiple-item measure in predicting relapse.

Strengths and Limitations

This study focused on a dominant health behavior theory construct (i.e., self-efficacy) that is likely to be included in future research projects and treatment practices. The validation of a single-item measure thus has clear clinical value and utility. Furthermore, this study evaluated the validity and utility of the single-item measure in young adults, who have become a critical population to investigate, due to the high rates of substance use, substance use disorders, intense psychological distress and psychiatric disorder in this age group.

Among the limitations of this study is the fact that we were only able to compare the single-item measure to one longer, established measure, even though there are other validated abstinence self-efficacy scales. Because this was a secondary data analysis, our choice of comparison measures was limited. Nevertheless, the chosen comparison measure (i.e., an adapted version of the Alcohol Abstinence Self-Efficacy Scale; DiClemente, et al., 1994), represents the gold standard for measuring alcohol abstinence self-efficacy, and thus, is of particular relevance to the field.

The two measures of self-efficacy also had slightly different instructions regarding the timeframe within which self-efficacy projections were made. Both scales asked how confident participants were at the moment of assessment, but the single-item measure specifically asked about drug use in the next 90 days, while the ADSES did not specify a timeframe. Thus, it is possible that participants were using different timeframes when rating their own ability to stay abstinent. Both scales, however, rated confidence at the present moment.

The study in general had a relatively low retention rate, which declined steadily over follow-up assessments (87–74%). To minimize sample biases due to differential attrition, we tested demographic and substance use variables for retention biases, and if significant, included them in subsequent analyses of relapse. No such corrections, however, were done for the concurrent correlations between the single-item self-efficacy measures and the ADSES self-efficacy and temptation scores. In fact, these correlations were calculated based only on retained participants. Thus, it is not clear if the observed trend of correlations increasing over time for the ADSES self-efficacy scores was due to an increased tendency in

participants to report more similarly across measures, or simply an artifact of selectively retaining participants who had more similar scores across measures. Also of note, this study did not report on the test-retest reliability of the single-item measure of self-efficacy. Because this study was a secondary data analysis of a naturalistic study designed to measure treatment process and outcome, we did not have closely-spaced (e.g., one day) repeated assessment data available. We further decided not to report the test-retest reliability of the more distantly spaced observations we did have available (e.g., several weeks apart), because self-efficacy was theorized to undergo substantial changes throughout the treatment process. Rather, we reported concurrent validity of the measure at all available assessments to document the consistency of the relationships between the measures and constructs. Finally, it should be kept in mind that all variables were based on self-report, and that findings are based on an inpatient sample that was mostly male and White, and thus results may not generalize to less severe outpatient populations or in samples where the majority is female or from ethnic minorities.

5. Conclusions

Contrary to the perception that single-item measures are inferior to multiple-item measures, we demonstrated that this single-item measure of self-efficacy had good convergent and discriminant validity, and moreover showed superior predictive validity when compare to a well-established multiple-item self-efficacy scale. Clearly, from a clinical standpoint it may be useful to explore self-efficacy with regard to specific scenarios and contexts (e.g., negative affect versus positive social situations), but in terms of predicting future behavior, our results suggest that the personally-defined single-item measure of self-efficacy may be more potent. Based on these findings, we encourage the use of this single-item measure of self-efficacy, particularly in situations in which brevity of assessment are critical for feasibility of a particular research project or in clinical practice.

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Table 1

Spearman correlations of the single-item self-efficacy measure with ADSES subscale scores

	Baseline	End of Tx	1-month	3-month	6-month
ADSES - Self-efficacy					
Negative Affect	0.31	0.26	0.29	0.37	0.50
Social / Positive	0.31	0.31	0.35	0.45	0.57
Physical & Other	0.27	0.25	0.18	0.35	0.45
Craving / Withdrawal	0.34	0.24	0.21	0.36	0.41
Total Score	0.36	0.32	0.30	0.45	0.56
ADSES - Temptations					
Negative Affect	−0.24	−0.18	−0.46	−0.32	−0.40
Social / Positive	−0.25	−0.27	−0.45	−0.37	−0.46
Physical & Other	−0.27	−0.21	−0.29	−0.29	−0.32
Craving / Withdrawal	−0.23	−0.27	−0.38	−0.30	−0.25
Total Score	−0.30	−0.25	−0.45	−0.38	−0.44

Note: All correlations were statistically significant at α=0.05

Table 2

Max-Rescaled R^2 values for alternative models predicting relapse

Model Predictors	Predicting Relapse at: 1-month	3-month	6-month
Basic Models			
Attrition predictors †	0.02	0.01	0.01
Attrition predictors † and single-item self-efficacy score	0.17	0.20	0.23
Incremental Models			
Attrition predictors† and other relapse predictors ‡	0.34	0.24	0.19
Attrition predictors †, other relapse predictors ‡, and single-item self-efficacy score	0.41	0.33	0.32
Alternative Models - Using ADSES scores instead of single-item measure while controlling for attrition predictors † and other relapse predictors ‡			
ADSES - Self-efficacy - Total Score	0.36	0.27	0.24
ADSES - Self-efficacy - Negative Affect	0.36	0.27	0.24
ADSES - Self-efficacy - Social / Positive	0.36	0.25	0.24
ADSES - Self-efficacy - Physical & Other	0.35	0.28	0.22
ADSES - Self-efficacy - Craving / Withdrawal	0.36	0.26	0.25

Note:

† race (White vs. other), education (3 levels);

‡ having spent time in a controlled environment", percent days abstinent prior to treatment, hospitalization due to substance use prior to tx ("ever" versus "never")