Self-reflection, Insight, and Mood Disorder Symptoms: Evaluating the Short Form of the Self-refection and Insight Scale with Clinical Interviews and Self-reports

By: Paul J. Silvia, Kari M. Eddington, Kelly L. Harper, Thomas R. Kwapil

Silvia, P. J., Eddington, K. M., Harper, K. L., & Kwapil, T. R. (2022). Self-reflection, insight, and mood disorder symptoms: Evaluating the short form of the self-reflection and insight scale with clinical interviews and self-reports. *Current Psychology*, 1-7.

Abstract:

The 20-item Self-reflection and Insight Scale (SRIS) is a widely used measure of individual differences in self-focused attention and private self-consciousness. In the present research, we examined the validity of a 12-item short form of the SRIS, which was recently developed based on item response theory models. Measures related to mental health and well-being were used as criteria for evaluating the relative effect sizes for the long and short SRIS. In Study 1 (n = 278 adults), the short and long SRIS scores had highly similar correlations with dimensional measures of depression, anxiety, and stress symptoms as well as with neuroticism. In Study 2 (n = 78 adults), participants were classified into major depression and healthy control groups based on structured clinical interviews. The short and long SRIS had similar profiles of differences between the two groups. Taken together, the studies suggest that the short forms effectively recover the effect sizes of the long forms, so the briefer SRIS would be a good option when time and survey space are tight.

Keywords: Self reflection | Insight | Self-awareness | Private self-consciousness | Depression | Mood disorders

Article:

People's ability to reflect on themselves—referred to as self-awareness, self-consciousness, and self-focused attention—is central to self-regulation, motivation, and emotion (Carver & Scheier, 1998; Duval & Silvia, 2001; Silvia & Eddington, 2012). Since the early days of self-awareness research in social-personality psychology, researchers have developed models of individual differences in self-focused attention (Smári et al., 2008), such as public and private self-consciousness (Fenigstein et al., 1975; Scheier & Carver, 1985), internal state awareness and self-reflectiveness (Burnkrant & Page, 1984), and rumination and reflection (Silvia et al., 2005; Trapnell & Campbell, 1999).

One of the more recent models, developed by Grant et al. (2002), takes a metacognitive approach to individual differences in self-focused attention. This model proposes two factors. The first, self-reflection, is "the inspection and evaluation of one's thoughts, feelings, and behavior" (Grant et al., 2002, p. 821). The second, insight, is "the clarity of understanding of one's thoughts, feelings, and behavior" (Grant et al., 2002, p. 821). The Self-reflection and Insight Scale (SRIS)

is a self-report scale that was designed to measure these two factors. It contains 12 items for self-reflection and 8 items for insight (Grant et al., 2002). The self-reflection and insight model is grounded in a broader model of coaching and personal development (Grant, 2001, 2003), so the SRIS items are neutral in tone (versus affectively charged) and emphasize the metacognitive experience of one's thoughts and feelings instead of dysphoric feelings of rumination or distressing experiences of confusion. The two factors usually have a modest correlation around r = ±.10, although it varies across studies (see Silvia, 2021).

The SRIS consistently predicts outcomes related to mental health and subjective well-being, such as psychopathology symptoms, emotional experience, resilience, and self-regulation. A common finding is that the self-reflection factor has negative relationships with psychological well-being and insight has positive relationships (Cowden & Meyer-Weitz, 2016; Harrington & Loffredo, 2010; Lyke, 2009; Nakajima et al., 2017, 2018, 2019; Silvia & Phillips, 2011; Stefan & Cheie, 2020; Stein & Grant, 2014). As a further sign of the SRIS's popularity, researchers have created an adapted scale for younger participants (Sauter et al., 2010) and developed translations of the SRIS (e.g., Aşkun & Cetin, 2017; S. Y. Chen et al., 2016; DaSilveira et al., 2015; Naeimi et al., 2019; Sauter et al., 2010; Stefan & Cheie, 2020).

Recently, the psychometric properties of the SRIS were evaluated in an item-response theory (IRT) analysis with a large sample of respondents (Silvia, 2021). The analysis revealed that although the SRIS has many strengths, it has a handful of relatively underperforming items. Based on the IRT analyses, a refined short form of the SRIS with only 12 items—6 for each factor—was developed (Silvia, 2021). The short form retains the psychometrically strongest items and could be promising when a briefer scale is useful, such as field projects, long surveys, and applied coaching contexts. Nevertheless, past work focused only on the psychometrics of the SRIS and did not seek to evaluate the validity of the short form, especially in comparison to the full-length version, which would be necessary for researchers to confidently opt for the shorter SRIS when planning their research.

In the present research, we evaluated the relative performance of the short form of the SRIS relative to the standard, longer form. Our aim was to see how well the short scale's relationships with key constructs of interest resembled the findings from the longer scale. We focused on mental health symptoms, which have been prominent outcomes in the self-reflection and insight literature since the beginning. In Study 1, a sample of young adults completed the SRIS along with self-reported measures of depression and anxiety symptoms. In Study 2, participants who had taken part in structured clinical interviews for depression completed the SRIS as part of a broader study. Taken together, the two studies afford a close look at the similarity of the short and long forms of the SRIS.

Study 1

Method

Participants

A total of 278 adults—207 women, 71 men—completed the SRIS as part of a lab-based research study. The participants were all adults (M age = 19.13 years, SD = 1.17, range from 18-31) enrolled in psychology courses at a regional public university in the Southeastern United States.

Method

The research was conducted face-to-face in a lab on the university campus. As part of a broader line of research on motivation and mental health, people completed a series of self-report surveys, which were delivered electronically via the MediaLab survey software.

Self-reflection and insight Participants completed the 20-item SRIS using a 7-point scale (1 = strongly disagree, 7 = strongly agree). Higher scores indicate higher self-reflection (SR) and insight (IN). The scores for the 12-item short form of the SRIS were calculated using the item subsets proposed by Silvia et al. (2021).

Depression, anxiety, and stress symptoms Scales measured the experience of depression, anxiety, and stress symptoms. The Center for Epidemiologic Studies Depression Scale (CESD; Lewinsohn et al., 1997) has 20-items (0-3 response format) and it is widely used to measure common symptoms of depression. In addition, the short form of the Depression Anxiety Stress Scales (DASS; Lovibond & Lovibond, 1995) has 21 items that measure anhedonic depression, anxiety, and stress with 7 items each (0-3 response scale). For both scales, high scores indicate higher symptoms.

Personality traits The Big Five personality traits were measured with the 60-item NEO FFI 3 (McCrae & Costa Jr., 2007) that assesses the traits of Neuroticism, Extraversion, Openness to Experience, Agreeableness, and Conscientiousness with 12 items each (1-5 response scale). Because the Big Five traits have been so thoroughly studied, they offer useful benchmarks for comparing the short and long SRIS.

Results and Discussion The analyses were conducted in R 4.0.5 (R Core Team, 2021) using the packages psych (Revelle, 2021) and corrr (Kuhn et al., 2020). Table 1 shows descriptive statistics, correlations, and Cronbach's alpha values for all the scales. To evaluate the relationships between the short and long SRIS, we estimated Pearson correlations and their 95% confidence intervals for the measures of mood disorder symptoms and personality. Pearson correlations can be interpreted as effect sizes using the common guidelines of .10/.30/.50 as small/medium/large (Cumming, 2012).

The patterns of correlations are illustrated in Fig. 1, which depicts the values for both the short and the long SRIS for comparison. Overall, the evidence for the validity of the short forms was good. The short self-reflection scale had significant positive correlations with the CESD (r = .19 [.08, .32]), with the DASS Depression (r = .16 [.06, .29]), Anxiety (r = .20 [.04, .37]), and Stress (r = .25 [.13, .38]) subscales, and with Neuroticism (r = .19 [.08, .32]). Additionally, the short self-reflection scale correlated positively with Openness to Experience (r = .37 [.27, .48]).

The short insight scale, on the other hand, had significant negative correlations with the CESD (r = -.46 [-.56, -.36]), with the DASS Depression (r = -.45 [-.55, -.36]), Anxiety (r = -.37 [-.47, -.24]), and Stress (r = -.42 [-.52, -.31]) subscales, and with Neuroticism (r = -.57 [-.66, -.49]). Additionally, the short insight scale correlated positively with Conscientiousness (r = .38 [.28, .49]).

Table 1 Descriptive Statistics and Correlations: Study 1

Variable	*M*	*SD*	α	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Self-refection (Long)	5.00	.96	.89	1												
2. Self-refection (Short)	4.97	1.08	.88	.94	1											
3. Insight (Long)	4.60	1.05	.81	.13	.05	1										
4. Insight (Short)	4.46	1.22	.83	.02	-.07	.97	1									
5. DASS Depression	.52	.61	.89	.11	.16	-.44	-.45	1								
6. DASS Anxiety	.57	.53	.75	.17	.20	-.35	-.37	.59	1							
7. DASS Stress	.80	.59	.79	.21	.25	-.38	-.42	.69	.71	1						
8. CESD	14.36	10.34	.91	.13	.19	-.45	-.46	.81	.66	.65	1					
9. Neuroticism	3.12	.65	.83	.13	.19	-.56	-.57	.65	.54	.57	.67	1				
10. Extraversion	3.52	.54	.81	.00	.01	.11	.09	-.19	-.03	-.03	-.18	-.17	1			
11. Openness to Experience	3.64	.52	.76	.42	.37	-.01	-.08	.15	.29	.28	.19	.14	.07	1		
12. Agreeableness	3.72	.50	.76	.11	.10	.10	.08	-.15	-.04	-.18	-.12	-.10	.17	.08	1	
13. Conscientiousness	3.57 .	.56	.86	.11	.11	.41	.38	-.37	-.25	-.25	-.37	-.32	.19	-.15	.27	1

N = 278

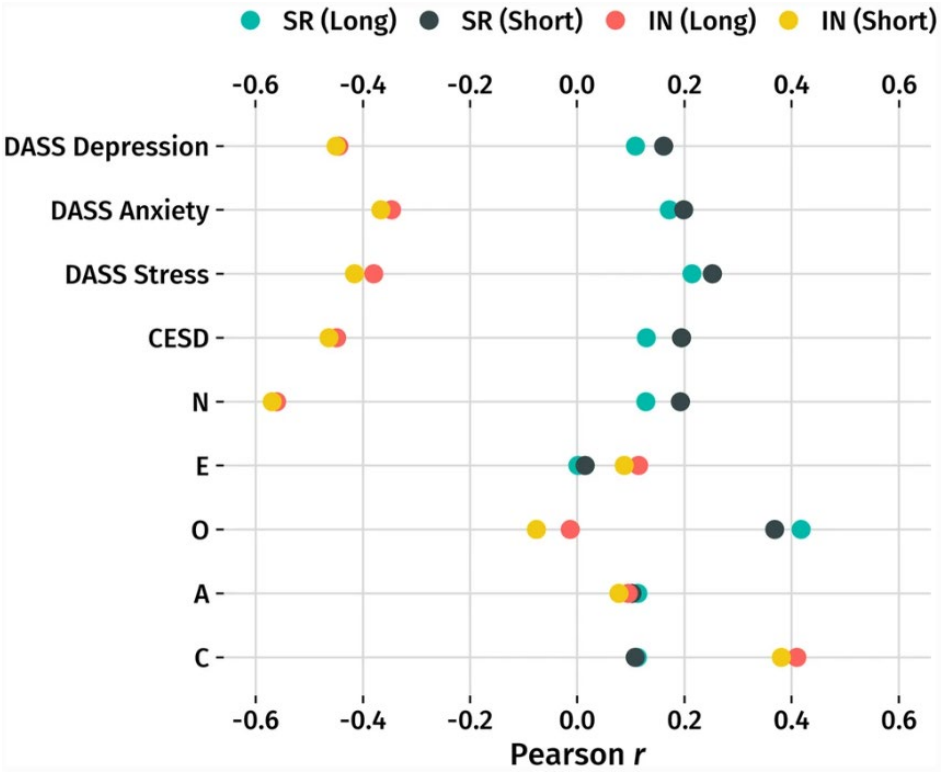

Fig. 1 Correlations for the long and short forms of the SRIS self-reflection (SR) and insight (IN) subscales

Overall, the profile of relationships broadly replicates past research, which commonly finds contrasting relationships between self-reflection, insight, and markers of subjective well-being and mental health. Furthermore, the short scales fared well relative to the long forms. For reliability, internal consistency was maintained despite the shorter length. For validity, as Fig. 1 and Table 1 show, the correlations for the short scales with the CESD and DASS were, in most cases, at least as strong in the expected direction as the correlations for the long scales, and in some cases were notably stronger (e.g., correlations between self-reflection and the CESD, DASS Depression, and Neuroticism scales). As result, relatively little if anything appeared to be lost by using the short SRIS.

Study 2

In Study 2, we sought additional evidence for the validity of the short SRIS. Most research using the SRIS has examined self-reported measures of subjective well-being and mental health symptoms in broad, unselected samples of relatively high-functioning adults. In Study 2, we evaluated self-reflection and insight in a sample that took part in structured clinical interviews for depression as part of a broader study on depression, anhedonia, and motivation (Silvia et al., 2020, 2021). This sample was thus intended to include participants with clinically significant levels of depression. As a result, the sample affords a contrast in short and long SRIS scores between participants who do and do not meet diagnostic criteria for major depressive disorder, assessed via diagnostic interviews.

Method

Participants

A total of 78 adults—59 women, 19 men—recruited from the local area (M age = 23.26 years, SD = 5.41, range from 18 to 43) participated as part of a broader study of clinical depression and motivation (see Silvia et al., 2020, 2021).

Procedure

The full details on screening and recruiting are reported elsewhere (Silvia et al., 2020, 2021). The broader project sought to recruit groups that did and did not have clinically significant levels of depressive anhedonia. Potentially eligible participants took part in a face-to-face administration of the Structured Clinical Interview for Diagnostic and Statistical Manual of Mental Disorders, 5th edition, Research Version (SCID-5-RV; First et al., 2015), which is a widely used semi-structured diagnostic interview. Trained doctoral students in clinical psychology administered the depression module under the supervision of a licensed psychologist. Meeting full diagnostic criteria for a major depressive disorder defined the "MDD" group (n = 18); the remaining participants made up the "Control" group (n = 60).

At a later lab visit, usually within 2 weeks, participants completed a series of lab tasks and self-report scales, including the original 20-item version of the SRIS. As before, this was completed electronically and the 12-item short form SRIS scores were calculated using the relevant item subsets.

Results and Discussion

Table 2 shows the descriptive statistics for the differences in SRIS scores between the control and MDD conditions; Fig. 2 displays the patterns of means. Due to missing scores, the group sizes were 18 (MDD) and 58 (Control). Because the groups had different sample sizes, Welsh-approximated degrees of freedom were used when comparing the groups. Effect sizes were estimated via Cohen's d, the standardized mean difference between the groups. Cohen's d can be interpreted using common benchmarks of .20/.50/.80 as small/medium/large (Cumming, 2012).

For self-reflection, the MDD group had higher scores but not significantly so for either the short or the long scale. For insight, in contrast, the MDD group had significantly lower scores for both the short scale and the long scale (see Table 2). Fig. 2 illustrates these differences between the groups.

To aid in comparing the relative performance of the short and long forms of the SRIS, Fig. 3 displays the effect sizes for the short and long forms of each scale (see Table 2). The effect sizes for the short and long forms were similar: the long form of the self-reflection scale (d = .50 [-.04, 1.03]) had a slight edge over the short form (d = .39 [-.15, .92]), and the short form of the insight scale (d = -.71 [-1.25, -.16]) had a slight edge over the long one (d = -.60 [-1.14, -.06]). In sum, the short and long versions of the SRIS yielded similar differences between the groups.

To aid in comparing the relative performance of the short and long forms of the SRIS, Fig. 3 displays the effect sizes for the short and long forms of each scale (see Table 2). The effect sizes for the short and long forms were similar: the long form of the self-reflection scale (d = .50 [-.04, 1.03]) had a slight edge over the short form (d = .39 [-.15, .92]), and the short form of the insight

scale (d = -.71 [-1.25, -.16]) had a slight edge over the long one (d = -.60 [-1.14, -.06]). In sum, the short and long versions of the SRIS yielded similar differences between the groups.

Table 2 Differences in Self-reflection and Insight Between Control and MDD Participants

	Control	MDD	t(df), p	Cohen's d	Cronbach's α
Self-reflection (Long)	5.11 (.95)	5.57 (.97)	1.79(27.88), *p* = .084	.50 [-.04, 1.03]	.89
Self-reflection (Short)	5.18 (.99)	5.58 (1.19)	1.29(24.83), *p* = .209	.39 [-.15, .92]	.87
Insight (Long)	4.87 (.94)	4.31 (.99)	2.14(27.22), *p* = .041	-.60 [-1.14, -.06]	.77
Insight (Short)	4.74 (1.14)	3.94 (1.13)	2.59(28.46), *p* = .015	-.71 [-1.25, -.16]	.82

n = 58 Control; n = 18 MDD. Welsh approximated degrees of freedom were used.

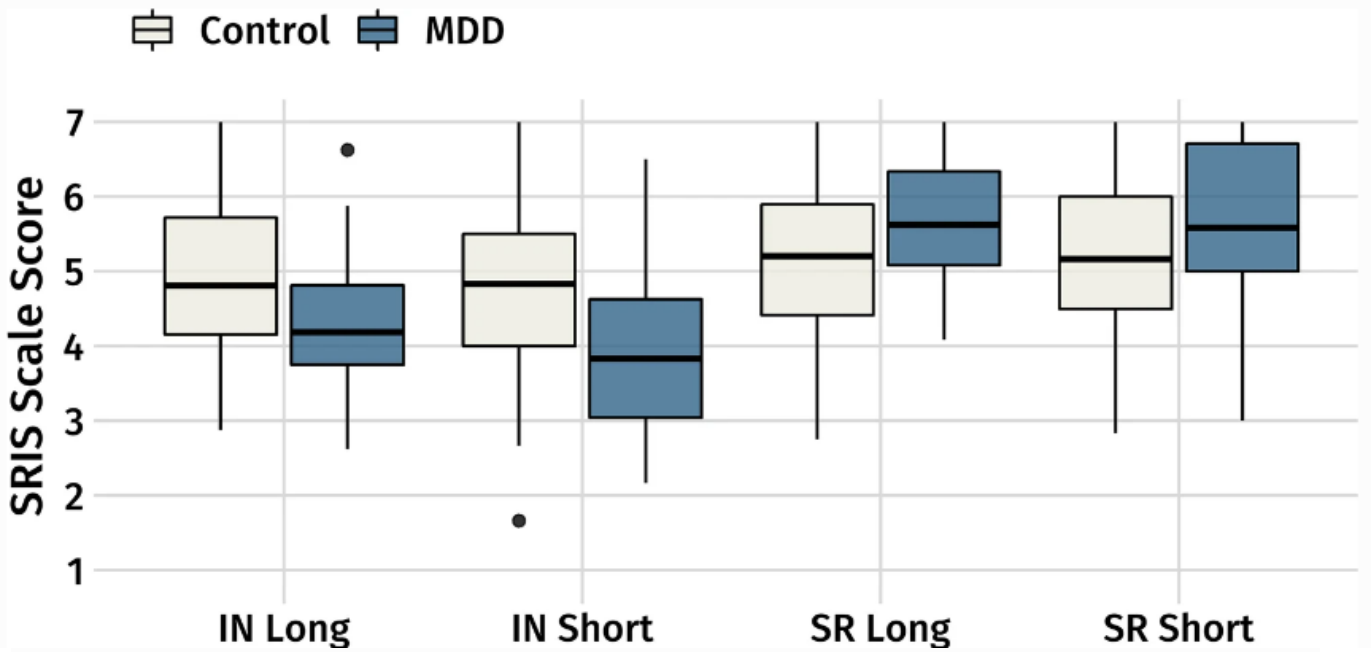

Fig. 2 Self-reflection (SR) and insight (IN) boxplots for the control and MDD conditions. Note. The boxplot lines depict the median score for the respective SRIS scale; dots depict outlying scores.

Discussion

The Self-reflection and Insight Scale (SRIS; Grant et al., 2002) has emerged as a popular tool for measuring individual differences in two distinct facets of self-focused attention. In the present research, we appraised the relative validity of the refined, 12-item short form of the scale (Silvia, 2021). Taken together, the two studies offered good evidence for the validity of the short SRIS. Despite being considerably shorter (12 vs 20 items), the short SRIS appeared to perform about as well as the long SRIS. In Study 1, the short and long SRIS scores had highly similar correlations

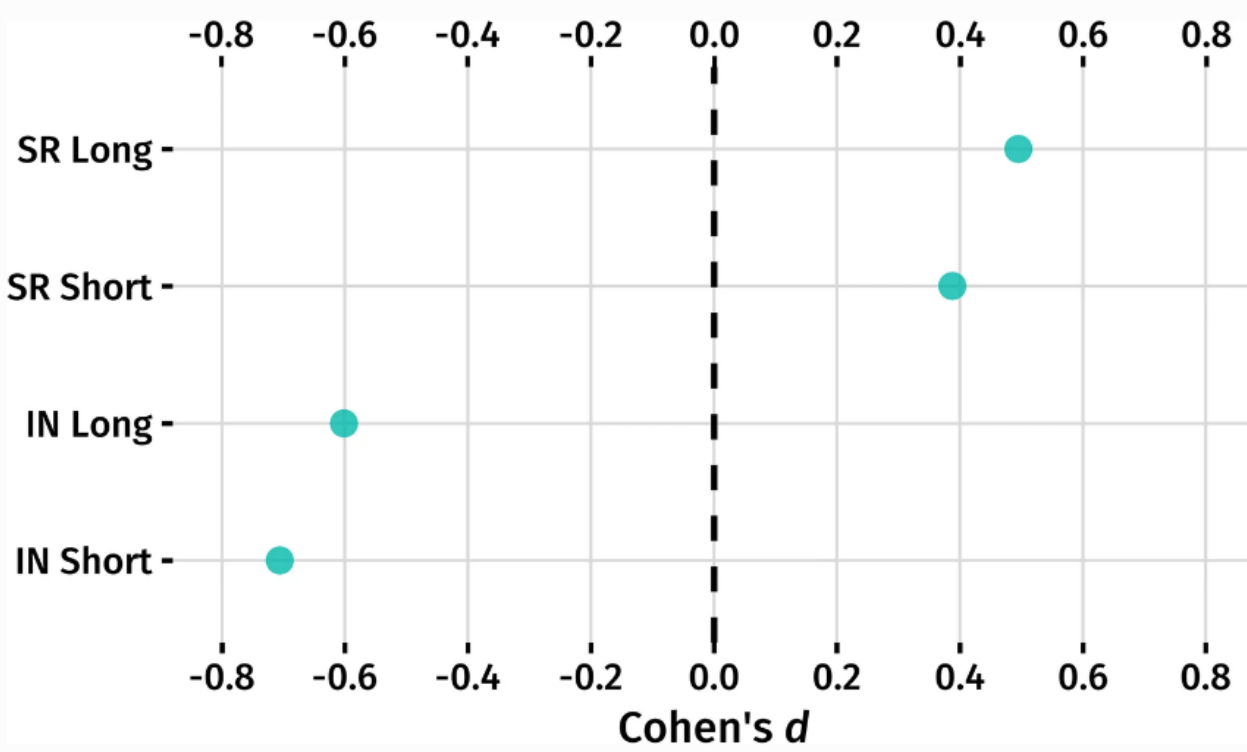

Fig. 3 Effect sizes (Cohen's d) for the difference between the control and MDD conditions in SRIS scores

with dimensional measures of depression, anxiety, and stress symptoms as well as with neuroticism, a broader proneness to negative emotions (Widiger, 2009). In Study 2, using interview-based classifications of participants into MDD and Control groups, we found that the short and long forms had similar profiles of group differences.

Whenever a self-report scale is abbreviated, a natural concern is whether the meaning or scope of the underlying construct was inadvertently changed. The present studies provided important evidence for the similarity of the short and long scales based on the similarity of their relationships with external criteria. The short forms appeared to effectively recover the effect sizes of the long forms. In Study 1, for nearly all the outcomes, the short forms yielded correlations with the key outcomes that were at least as large as the long SRIS's correlations. In Study 2, the effect size for the insight scale was larger for the short SRIS than for the long SRIS. This pattern suggests that researchers can use the short forms of the SRIS with confidence when studying similar kinds of outcomes. We recognize, however, that this project is only a first step toward understanding the relative validity of the short and long SRIS. Emotional and mental health outcomes are prominent in the SRIS literature, but many studies have explored how the SRIS performs with other constructs (e.g., self-focused attention and metacognitive processes; Silvia & Phillips, 2011), contexts (e.g., coaching; Grant, 2003), and populations. In keeping with the view of validity as an ongoing process of inquiry (Messick, 1995), we encourage researchers to explore the relative validity of the short and long forms in their own data and to examine a broader range of psychological domains, contexts, and populations.

The IRT-based refinement of the SRIS emphasized retaining items with high discrimination levels and omitting items that contributed relatively little information, so even though the short scale is shorter, it consists of the most informative items. Nevertheless, it is reasonable for researchers to consider using the longer, 20-item SRIS in cases where participant

time and survey space are not constrained. The longer SRIS has a larger evidence base, and it contains facet scales for self-reflection that are not available in the briefer form. But when time and survey space are tight, or when a brief scale would be more easily integrated into applied settings and practices, the short form of the SRIS appears to be a solid option.

In addition to supporting the use of the brief, 12-item SRIS, the present research adds to the substantive body of work on the links between self-reflection, insight, and markers of mental health and psychological well-being (Cowden & Meyer-Weitz, 2016; Harrington & Loffredo, 2010; Lyke, 2009; Nakajima et al., 2017, 2018, 2019; Silvia & Phillips, 2011; Stefan & Cheie, 2020; Stein & Grant, 2014). Consistent with much past research, self-reflection and insight pointed in different directions. In Study 1's unselected sample, self-reflection was associated with significantly greater depression, anxiety, and stress symptoms, whereas insight was associated with significantly lower depression, anxiety, and stress symptoms. In Study 2's interview-based sample, self-reflection did not differ significantly between the MDD and Control groups, but the MDD group was significantly lower in insight. These findings broadly replicate many past studies and add to growing body of work that supports the metacognitive model of self-consciousness underlying the SRIS (Grant, 2001, 2003).

References

Aşkun, D., & Cetin, F. (2017). Turkish version of self-reflection and insight scale: A preliminary study for validity and reliability of the constructs. Psychological Studies, 62(1), 21–34.

Burnkrant, R. E., & Page, T. J. (1984). A modification of the Fenigstein, Scheier, and Buss self-consciousness scales. Journal of Personality Assessment, 48, 629–637.

Carver, C. S., & Scheier, M. F. (1998). On the self-regulation of behavior. Cambridge University Press.

Chen, S. Y., Lai, C. C., Chang, H. M., Hsu, H. C., & Pai, H. C. (2016). Chinese version of psychometric evaluation of self-reflection and insight scale on Taiwanese nursing students. Journal of Nursing Research, 24(4), 337–346.

Cowden, R. G., & Meyer-Weitz, A. (2016). Self-reflection and self-insight predict resilience and stress in competitive tennis. Social Behavior and Personality, 44(7), 1133–1149.

Cumming, G. (2012). Understanding the new statistics: Effect sizes, confidence intervals, and meta-analysis. Routledge.

DaSilveira, A., DeSouza, M. L., & Gomes, W. B. (2015). Self-consciousness concept and assessment in self-report measures. Frontiers in Psychology, 6, 930.

Duval, T. S., & Silvia, P. J. (2001). Self-awareness and causal attribution: A dual systems theory. Kluwer Academic Publishers.

Fenigstein, A., Scheier, M. F., & Buss, A. H. (1975). Public and private self-consciousness: Assessment and theory. Journal of Consulting and Clinical Psychology, 43, 522–527.

First, M. B., Williams, J. B. W., Karg, R. S., & Spitzer, R. L. (2015). Structured Clinical Interview for DSM-5—Research Version (SCID-5-RV). American Psychiatric Association.

Grant, A. M. (2001). Rethinking psychological mindedness: Metacognition, self-reflection, and insight. Behaviour Change, 18, 8–17.

Grant, A. M. (2003). The impact of life coaching on goal attainment, metacognition and mental health. Social Behavior and Personality, 31, 253–264.

Grant, A. M., Franklin, J., & Langford, P. (2002). The self-reflection and insight scale: A new measure of private self-consciousness. Social Behavior and Personality, 30, 821–836.

Harrington, R., & Loffredo, D. A. (2010). Insight, rumination, and self-reflection as predictors of well-being. The Journal of Psychology, 145(1), 39–57.

Kuhn, M., Jackson, S., & Cimentada, J. (2020). corrr: Correlations in R (version 0.4.3). Available from https://CRAN.R-project.org/package=corrr

Lewinsohn, P. M., Seeley, J. R., Roberts, R. E., & Allen, N. B. (1997). Center for Epidemiologic Studies Depression Scale (CES-D) as a screening instrument for depression among community-residing older adults. Psychology and Aging, 12(2), 277–287.

Lovibond, P. F., & Lovibond, S. H. (1995). The structure of negative emotional states: Comparison of the Depression Anxiety Stress Scales (DASS) with the Beck Depression and Anxiety Inventories. Behaviour Research and Therapy, 33, 335–343.

Lyke, J. A. (2009). Insight, but not self-reflection, is related to subjective well-being. Personality and Individual Differences, 46, 66–70.

McCrae, R. R., & Costa Jr., P. T. (2007). Brief versions of the NEO-PI-3. Journal of Individual Differences, 28, 116–128.

Messick, S. (1995). Validity of psychological assessment: Validation of inferences from persons' responses and performances as scientific inquiry into score meaning. American Psychologist, 50, 741–749.

Naeimi, L., Abbaszadeh, M., Mirzazadeh, A., Sima, A. R., Nedjat, S., & Hejri, S. M. (2019). Validating self-reflection and insight scale to measure readiness for self-regulated learning. Journal of Education Health Promotion, 8(1), 150.

Nakajima, M., Takano, K., & Tanno, Y. (2017). Adaptive functions of self-focused attention: Insight and depressive and anxiety symptoms. Psychiatry Research, 249, 275–280.

Nakajima, M., Takano, K., & Tanno, Y. (2018). Contradicting effects of self-insight: Self-insight can conditionally contribute to increased depressive symptoms. Personality and Individual Differences, 120, 127–132.

Nakajima, M., Takano, K., & Tanno, Y. (2019). Mindfulness relates to decreased depressive symptoms via enhancement of self-insight. Mindfulness, 10, 894–902.

R Core Team. (2021). R: A language and environment for statistical computing. R Foundation for Statistical Computing. https://www.R-project.org

Revelle, W. (2021). psych: Procedures for psychological, psychometric, and personality research (version 2.1.3). Available from https://CRAN.R-project.org/package=psych

Roberts, C., & Stark, P. (2008). Readiness for self-directed change in professional behaviours: Factorial validation of the Self-Reflection and Insight Scale. Medical Education, 42, 1054–1063.

Sauter, F. M., Heyne, D., Blöte, A. W., Widenfelt, B. M., & Westenberg, P. M. (2010). Assessing therapy-relevant cognitive capacities in young people: Development and psychometric properties of the Self-Reflection and Insight Scale for Youth. Behavioural and Cognitive Psychotherapy, 38, 303–317.

Scheier, M. F., & Carver, C. S. (1985). The self-consciousness scale: A revised version for use with general populations. Journal of Applied Social Psychology, 15, 687–699.

Silvia, P. J. (2021). The self-reflection and insight scale: Applying item response theory to craft an efficient short form. Current Psychology. https://doi.org/10.1007/s12144-020-01299-7

Silvia, P. J., & Duval, T. S. (2001). Objective self-awareness theory: Recent progress and enduring problems. Personality and Social Psychology Review, 5, 230–241.

Silvia, P. J., & Eddington, K. M. (2012). Self and emotion. In M. R. Leary & J. P. Tangney (Eds.), Handbook of self and identity (pp. 425–445). Guilford Press.

Silvia, P. J., Eddington, K. M., Harper, K. L., Burgin, C. J., & Kwapil, T. R. (2020). Appetitive motivation in depressive anhedonia: Effects of piece-rate cash rewards on cardiac and behavioral outcomes. Motivation Science, 6(3), 259–265. https://doi.org/10.1037/mot0000151

Silvia, P. J., Eddington, K. M., Harper, K. L., Burgin, C. J., & Kwapil, T. R. (2021). Reward-seeking deficits in major depression: Unpacking appetitive task performance with ex-Gaussian response time variability analysis. Motivation Science. https://doi.org/10.1007/s12144-020-01299-7

Silvia, P. J., Eichstaedt, J., & Phillips, A. G. (2005). Are rumination and reflection types of self-focused attention? Personality and Individual Differences, 38, 871–881.

Silvia, P. J., & Phillips, A. G. (2011). Evaluating self-reflection and insight as self-conscious traits. Personality and Individual Differences, 50(2), 234–237.

Smári, J., Ólason, D., & Ólafsson, R. P. (2008). Self-consciousness and similar personality constructs. In G. J. Boyle, G. Matthews, & D. H. Saklofske (Eds.), The SAGE handbook of personality theory and assessment (1st ed., pp. 486–505). Sage.

Stefan, C. A., & Cheie, L. (2020). Self-compassion and social anxiety in late adolescence: Contributions of self-reflection and insight. Self and Identity.

Stein, D., & Grant, A. M. (2014). Disentangling the relationships among self-reflection, insight, and subjective well-being: The role of dysfunctional attitudes and core self-evaluations. The Journal of Psychology, 148(5), 505–522.

Trapnell, P. D., & Campbell, J. D. (1999). Private self-consciousness and the five-factor model of personality: Distinguishing rumination from reflection. Journal of Personality and Social Psychology, 76, 284–304.

Widiger, T. A. (2009). Neuroticism. In M. R. Leary & R. H. Hoyle (Eds.), Handbook of individual differences in social behavior (pp. 129–146). Guilford Press.

Funding This research was supported by the National Institute of Mental Health of the National Institutes of Health under award number R15MH079374. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

Data availability The data and R code are publicly available at Open Science Framework: https://osf.io/qsa5w/.

Declarations

Ethics approval This research was evaluated, approved, and monitored by the Institutional Review Board at the University of North Carolina at Greensboro.

Consent to participate All participants included in this research provided written informed consent.

Conflicts of interest The authors have no conflicts or competing interests to declare.