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# Comparative analysis of integrative self-knowledge, mindfulness, and private self-consciousness in predicting responses to stress in Iran

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Previous research has established that awareness of self-experience is a stress resistance resource. The present study conducted an analysis of measures that record different aspects of self-awareness (private self-consciousness, mindfulness, and integrative self-knowledge) to explain this stress-resistance effect in a sample of Iranian university students ( $N = 186$ ). These students responded to Mindfulness Attention Awareness, Private Self-Consciousness, Integrative Self-Knowledge, and Perceived Stress Scales just before the stress of a 20-day final examination period, and they then responded to Symptom Checklist and Vitality measures at four-day intervals during the final examinations. Prior to final examinations, the three self-awareness variables correlated positively with each other and negatively with perceived stress. Regression analyses of the data obtained during final examinations identified mindfulness to be a better operationalization of this stress-resistance resource than private self-consciousness. Specifically, mindfulness but not private self-consciousness was a positive predictor of vitality and a negative predictor of symptoms. Hierarchical regression analyses also demonstrated that mindfulness and integrative self-knowledge both explained resistance to physical symptoms, while integrative self-knowledge functioned as a protective factor toward one's vitality. These data confirm the positive impact that self-awareness has during stress and highlight the importance of considering both mindfulness and integrative self-knowledge in understanding stress-resistance processes.

**Keywords:** Integrative self-knowledge; Mindfulness; Private self-consciousness; Stress; Iran.

La recherche passée a établi que la prise de conscience de l'auto-expérience est une ressource de résistance au stress. La présente étude a mené une analyse des mesures qui enregistrent différents aspects de la conscience de soi (l'auto-prise de conscience privée, la pleine conscience ou «mindfulness» en anglais et l'auto-connaissance intégrative) pour expliquer cette résistance au stress dans un échantillon d'étudiants universitaires iraniens ( $N = 186$ ). Ces étudiants ont répondu à des échelles de conscience de soi au niveau de l'attention de la pleine conscience, d'auto-prise de conscience privée, d'auto-connaissance intégrative et de stress perçu juste avant une période d'examens finaux de 20 jours. De plus, suite à cela, ils ont aussi répondu à des mesures d'un inventaire de symptômes et de vitalité («Symptom Checklist and Vitality») à un intervalle de 4 jours pendant les examens finaux. Avant les examens finaux, les trois variables de conscience de soi ont été positivement corrélées entre elles et négativement corrélées avec le stress perçu. Les analyses de régression des données obtenues pendant les examens finaux ont identifié que la pleine conscience constituait une meilleure opérationnalisation de cette ressource de résistance au stress que l'auto-prise de conscience privée. Spécifiquement, la pleine conscience et non pas l'auto-prise de conscience privée était un prédicteur positif de la vitalité et un prédicteur négatif des symptômes. Des analyses de régression hiérarchique ont aussi démontré que la pleine conscience et l'auto-connaissance intégrative ont toutes les deux expliqué la résistance aux symptômes physiques alors que l'auto-connaissance intégrative a agi comme un facteur de protection envers la vitalité. Ces données confirment que l'impact positif de la conscience de soi durant le stress et soulignent l'importance de considérer à la fois la pleine conscience et l'auto-connaissance intégrative dans la compréhension des processus de la résistance au stress.

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*E*studios previos han determinado que la conciencia de la autoexperiencia es una estrategia de resistencia ante el estrés. En el presente estudio se realizó un análisis de mediciones de los diferentes aspectos de la autoconciencia (autoconciencia personal, conciencia plena y autoconocimiento integrativo) con el fin de poder explicar el efecto de resistencia ante el estrés en una muestra de estudiantes universitarios iraníes ( $N=186$ ). Estos estudiantes respondieron exactamente 20 días antes de la estresante fase de los exámenes finales a las siguientes escalas: Atención de la conciencia plena, Autoconciencia personal, Autoconocimiento integrativo y Estrés percibido. Además ellos llenaron una lista de síntomas y evaluaron sus niveles de vitalidad con un intervalo de cuatro días durante los exámenes finales. Antes de los exámenes finales correlacionaron positivamente las tres variables de autoconciencia entre sí. A su vez éstas correlacionaron negativamente con el estrés percibido. Los análisis de regresión de los datos obtenidos durante los exámenes finales identificaron a la conciencia plena como una mejor operacionalización de este recurso de resistencia ante el estrés que la autoconciencia personal. Específicamente fue la conciencia plena y no la autoconciencia personal un predictor positivo de vitalidad y negativo de síntomas físicos. Adicionalmente mostraron los análisis de regresión jerárquicos que tanto la conciencia plena así como el autoconocimiento integrativo estaban relacionados con la resistencia ante síntomas físicos, mientras que sólo el autoconocimiento integrativo funcionaba como un factor protector respecto de la propia vitalidad. Estos resultados confirman el impacto positivo de la autoconciencia en situaciones estresantes y acentúan la importancia de considerar tanto la conciencia plena como la autoconciencia integrativa en el estudio de los procesos de resistencia ante el estrés.

Diverse theoretical perspectives identify awareness of self-experience as a core process of psychological adjustment. For example, research increasingly suggests that “directing attention to subjective mental, emotional, and physical experience is key to healthy self-regulation” and that a “willingness to ‘look inside’ is foundational to the development of self-knowledge from which regulated action proceeds” (Brown, Ryan, & Creswell, 2007, p. 216). Especially prominent, therefore, is a growing consensus that self-awareness and self-knowledge are centrally important in the dynamics of self-regulation (e.g., Baumeister & Vohs, 2004).

Mullen and Suls (1982) and Suls and Fletcher (1985) supplied early evidence of this self-regulatory role when they demonstrated that an internal focus on the self served as a stress resistance resource. Within their theoretical rationale, a feedback loop stabilizes the self-system of an individual by comparing present output with internal standards of functioning and by removing any detected discrepancy. Tendencies to ignore or distort signals of system disequilibrium could have the short-term benefit of alleviating perceived discomfort through a refusal to consciously process what is going on (Pennebaker, 1997). In the long term, however, the result would be lowered physiological and psychological resistance to stress.

Empirical support for this model was obtained through use of the Private Self-Consciousness Scale (Fenigstein, Scheier, & Buss, 1975), a measure with established relevance to processes of self-regulation (e.g., Gibbons, Scheier, Carver, & Hormuth, 1979). Mullen and Suls (1982) found

that stressful life events predicted subsequent illness over a 3-week time span in persons who were low, but not high, in private self-consciousness. Suls and Fletcher (1985) extended this basic finding across a 2-month time frame. These data supported the conclusion that those low in private self-consciousness ignored their psychological and somatic reactions to stressful life events and consequently failed to take the necessary corrective actions. The ultimate effect was reduced body resistance to stress and hence greater susceptibility to physical illness. In contrast, those high in private self-consciousness presumably attended to their internal reactions, made the necessary corrective adjustments, and thus had a stress resistance resource.

Early studies, therefore, emphasized the importance of private self-consciousness in efforts to understand the stress resistance process. Subsequent research, nevertheless, demonstrated that the Private Self-Consciousness Scale contains two factors with contrasting implications for adjustment (Mittal & Balasubramanian, 1987). An internal states awareness factor is a correlate of greater mental health, whereas self-reflectiveness often predicts more maladaptive functioning (e.g., Ghorbani, Watson, & Krauss, 2004; Watson & Biderman, 1993). Observations that the Private Self-Consciousness Scale contains factors with opposite adjustment implications may mean that this measure is less than ideal for research into how awareness of self-experience positively impacts processes of self-regulation.

The Mindful Attention Awareness Scale (Brown & Ryan, 2003) records a flexible, nonjudgmental,

and enhanced receptive attention to and awareness of ongoing self-experience in the present (Brown et al., 2007). In comparison to private self-consciousness, mindfulness reflects a more perceptual or pre-reflective mode of processing and appears to have a more unequivocally positive role in mental and physical health, behavioral regulation, and interpersonal relationships (Brown & Ryan, 2003; Brown et al. 2007; Langer, 1989, 2002; Langer & Moldoveanu, 2000). At least some evidence also suggests that mindfulness might be more noteworthy than private self-consciousness in predicting self-regulatory activity (Creswell, Way, Eisenberger, & Lieberman, 2007; Levesque & Brown, 2007).

Mindfulness reflects one's openness to the psychological dynamics of the self in the present, but self-regulation also seems to require at least some awareness of other temporal dimensions of self-experience. This is apparent in the fact that self-regulatory activity requires a comparison of present output of the self with internal standards of functioning. Internal standards of functioning presumably must be based on past and desired future self-experience. A cross-cultural research program in Iran and the USA recently developed an Integrative Self-Knowledge Scale to assess efforts of the self to integrate past, present, and desired future self-experience (Ghorbani, Watson, & Hargis, 2008). This scale displayed adequate internal reliability and measurement equivalence across Iranian and American samples, along with convergent, criterion, discriminant, and incremental validity. Integrative self-knowledge also correlated positively with both private self-consciousness and mindfulness. Additional evidence of scale validity was obtained in a later finding that peer- and self-reported integrative self-knowledge correlated positively with each other (Tahmasb, Ghorbani, & Watson, 2008).

## THE PRESENT STUDY

In short, research has established awareness of self-experience as a stress resistance resource. In general terms, the present project was designed to address two research objectives related to these issues. The first was to conduct a comparative analysis of the role of private self-consciousness and mindfulness as buffers of the relationship between stress and strain. As highlighted above, Mullen and Suls (1982) and Suls and Fletcher (1985) found private self-consciousness to be a moderator of the stress-strain process, but the

effects of this construct have been inconsistent. This, when considered with the developing literature supporting the positive influence of mindfulness, leads us to expect that:

*Hypothesis 1.* Mindfulness will be significantly and negatively related to measures of strain, while scores from the Private Self-Consciousness Scale will not be as consistently or as strongly related.

Our second research objective was to test our expectation that one's momentary awareness is a more powerful predictor of strain when combined with a measure of self-experience across time, or integrative self-knowledge. In other words, combining integrative self-knowledge with either private self-consciousness or mindfulness was expected to reflect a person's overall awareness of self-experience. Further, we expected this awareness to function as a critical self-regulatory and stress-resistance resource that helps to buffer the relationship between perceived stress and strain. From a self-regulatory perspective, if one has awareness of one's present state (private self-consciousness or mindfulness) and awareness of one's experiences and standards over time (integrative self-knowledge), then one should be more capable of protecting oneself against strains associated with stress. Thus, we expected that these two components of self-awareness would interact to predict strain, such that those with a higher degree of self-awareness across time would be more effective in their self-regulation and therefore more capable of managing the stress process. More specifically:

*Hypothesis 2.* Integrative self-knowledge will moderate the relationship between mindfulness (and/or private self-consciousness) and strain, such that those with lower levels of integrative self-knowledge will experience higher physical symptoms and lower vitality during a period of stress.

## METHOD

### Participants

Participants were 186 undergraduates enrolled in the University of Tehran. These 108 women and 79 men were 21.60 years old on average ( $SD = 1.84$ ). All participation was voluntary, completely anonymous, and in conformity with institutional ethical guidelines.

## Measures

Persian versions of all preliminary assessment scales were included in a single questionnaire booklet. Among other measures in this booklet were the Integrative Self-Knowledge Scale (Ghorbani et al., 2008), and scales for Mindful Attention Awareness (Brown & Ryan, 2003), Private Self-Consciousness (Fenigstein et al., 1975), and Perceived Stress (Cohen, Kamarck, & Mermelstein, 1983). The Symptom Checklist (Bartone, Ursano, Wright, & Ingraham, 1989) and Subjective Vitality (Ryan & Frederick, 1997) scales were administered separately during the final examination period.

Translation of all measures occurred in preparation for the present or previous projects. Persian versions of each item were back-translated into English to ensure the accuracy of translation. Meaningful discrepancies between original and back-translated English statements were rare and easily resolved. Validities of the self-awareness, self-knowledge, and perceived stress measures in Iran were well established from previous investigations (e.g., Ghorbani et al., 2004; Ghorbani et al., 2008; Ghorbani, Watson, & Weathington, 2009). Additional evidence for the validities of these measures in the present study can be found in the intercorrelations summarized in Table 1. Also in Table 1 are the internal consistency reliability estimates for the present set of measures.

Responding to the 12-item *Integrative Self-Knowledge* Scale involved a self-rating of the perceived truth of each item (e.g., “By thinking deeply about myself, I can discover what I really want in life and how I might get it”) on a 5-point Likert scale ranging from “largely untrue” (0) to

“largely true” (4). Higher scores on this measure reflected a higher degree of self-knowledge across multiple dimensions.

*Mindfulness* was assessed with 15 statements expressing a lack of mindfulness (e.g., “I find it difficult to stay focused on what’s happening in the present”) from the Mindful Attention Awareness Scale. Responses to each statement were made along a 5-point scale ranging from “almost always” (0) to “almost never” (4). This response scale was based on one used in a previous study that was performed to examine measurement invariance across cultures (Ghorbani et al., 2009). Higher scores on this measure thus reflected a higher degree of mindfulness or self-awareness.

The 10-item *Private Self-Consciousness* Scale asked participants to respond to items (e.g., “I reflect about myself a lot”) on a 5-point Likert scale from “strongly disagree” (0) to “strongly agree” (4). Higher scores on this scale reflected higher levels of self-consciousness.

The *Perceived Stress* Scale listed 14 symptoms of subjectively experienced stress (e.g., “In the last month, how often have you been upset because of something that happened unexpectedly?”), with participants indicating a frequency of occurrence that varied from “never” (0) to “very often” (4). As in previous Iranian and American samples, one item (“In the last month, how often have you found yourself thinking about things you have to accomplish?”) displayed a negative item-to-total correlation and was eliminated in order to maximize the internal consistency of the scale (e.g., Ghorbani et al., 2008).

With response options stretching from “none” (1) to “very often” (4), the *Symptom Checklist* presented a series of 20 complaints that the

TABLE 1  
Mean, standard deviation and correlation of main study variables

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10
1 Age	21.63	1.84										
2 Sex	1.61		-.15									
3 Marital status	.09		.22**	.01								
4 Years in college	2.64	0.95	.22**	.22**	-.03							
5 Perceived stress	25.25	7.83	.10	.06	-.07	.05	.82					
6 Integrative self-knowledge	31.77	8.80	-.02	-.14	.00	-.03	-.56**	.85				
7 Mindfulness	37.67	10.05	-.14	.19*	-.16*	.06	-.34**	.47**	.80			
8 Private self-consciousness	28.49	5.73	.04	-.04	-.05	-.02	-.25**	.40**	.18*	.72		
9 Vitality (average)	26.81	7.56	.16	.24**	.02	.04	-.39**	.31**	.27**	.17	.85	
10 Physical symptoms (average)	33.57	8.08	.03	-.09	.12	.10	.34**	-.31**	-.37**	-.01	-.55**	.90

*N* ranges from 119 (for correlations involving age) to 177. Sex coded 1 = male, 2 = female; Marital status coded 0 = unmarried, 1 = married. Where applicable, scale internal consistency reliability estimates (alpha) are included along the diagonal. Internal consistencies for the scale-level vitality and physical symptom items were high at all five measurements (alpha > .85); the alpha value reported above is based on the five vitality or physical symptom scores treated as separate items when calculating an average for each. \**p* < .05; \*\**p* < .01.

individual perhaps experienced in the recent past (e.g., “Headaches”, “Upset stomach”). Bartone et al. (1989) defined this state measure in terms of depression/withdrawal, hyper-alertness, generalized anxiety, and somatic complaints, and full scale scores supply a valid overall assessment of physical symptoms.

The *Subjective Vitality Scale* (Ryan & Frederick, 1997) recorded the state of feeling alive and alert with a set of seven items (e.g., “I have energy and spirit”). Using response options extending from “not at all true” (1) to “very true” (7), participants indicated ongoing feelings of energy and vitality that are indicative of eudaimonic well-being (Ryan & Deci, 2001). Higher scores on this measure indicated higher levels of vitality.

## Procedure

Data were collected in classroom settings with groups of 15 to 40 students per session responding to the questionnaire booklet. After self-reporting their levels of self-awareness and self-knowledge, Iranian students responded five additional times during their final course examination period to the Symptom Checklist (Bartone et al., 1989) and Subjective Vitality (Ryan & Frederick, 1997) scales. These five assessments occurred just before the final examinations and at the end of four-day intervals during this period.

## RESULTS

Responses to the two outcome measures of symptoms and vitality were returned immediately on completion. Of the 186 research participants, 66.1% responded to these two outcome measures

on all five of the final examination assessment days, with 4.8% missing one day, 0.5% missing two, 1.6% missing three, 21.5% missing four, and 5.5% missing all five days (and thus being eliminated from further analysis). Approximately 30% of the final sample, therefore, failed to return one or more of the daily Symptom and Vitality self-assessments. To address this limitation and more specifically to focus on our research objectives, we created a composite outcome for vitality and physical symptoms by averaging the scale scores for each obtained measure across the five assessments (all five measures of each variable were intercorrelated,  $r > .40$ ). With one exception, the number of missed assessments failed to correlate with any other variable. The one exception was a small negative relationship with the overall mean number of symptoms ( $r = -.15$ ,  $p < .05$ ). However, the variance explained by this relationship was small, and the lack of relationship with any other measure suggested that number of missed self-assessments had no noteworthy or systematic influence on observed outcomes. Table 1 is a summary of descriptive statistics for all study variables.

Hierarchical regression was used to test Hypothesis 1, that mindfulness would be a stronger and more negative predictor of strain than private self-consciousness. To account for variability in vitality and physical symptom reports due to demographic differences, age, sex, and marital status were included as covariates in this and all other hypothesis tests. Full results of this analysis are summarized in Table 2. These results supported Hypothesis 1 fully, in that of the two measures of self-awareness, only mindfulness was a significant predictor. Equally important is the finding that these relationships were in the

**TABLE 2**  
Regression from vitality and physical symptoms on demographic covariates, private self-consciousness, and mindfulness

Predictors	Vitality $\beta$		Physical symptoms $\beta$	
	Step 1	Step 2	Step 1	Step 2
Age	.21*	.22*	-.08	-.04
Sex	.28**	.24*	-.10	-.03
Marital status	-.03	.01	.12	.07
Mindfulness		.24*		-.37**
Private self-consciousness		.13		.06
$\Delta R^2$	0.10	0.08	0.02	0.12
$\Delta F$	3.92*	5.12**	0.82	7.24**
Adjusted $R^2$	0.07	0.14	0.00	0.10
$F$	3.92*	4.58**	0.82	3.45**

$N = 110$  for vitality,  $107$  for physical symptoms. Sex coded 1 = male, 2 = female; Marital status coded 0 = unmarried, 1 = married.  
\* $p < .05$ ; \*\* $p < .01$ .

TABLE 3

Regression from vitality and physical symptoms on demographic covariates, integrative self-knowledge, mindfulness, and the interaction of integrative self-knowledge and mindfulness

Predictors	Vitality $\beta$			Physical symptoms $\beta$		
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
Age	.21*	.23*	.22	-.01	-.04	-.04
Sex	.27**	.30**	.29	-.10	-.08	-.09
Marital status	-.03	-.02	-.01	.12	.09	.09
Integrative self-knowledge (ISK)		.30**	.30		-.21*	-.21
Mindfulness		.10	.11		-.24*	-.24
ISK $\times$ Mindfulness			.08			.01
$\Delta R^2$	.10	1.31	.01	.02	.15	.00
$\Delta F$	3.92*	8.89**	.91	.82	9.24**	.02
Adjusted $R^2$	.07	.19	.19	.00	.13	.13
$F$	3.92*	6.26**	5.36**	.82	4.27**	3.53**

$N = 110$  for vitality,  $107$  for physical symptoms. Sex coded  $1 = \text{male}$ ,  $2 = \text{female}$ ; Marital status coded  $0 = \text{unmarried}$ ,  $1 = \text{married}$ . All coefficients are standardized estimates. All variables were standardized prior to entry into these analyses and the standardized coefficients reported above are the "correct" standardized estimates from the regression output, following guidelines of Cohen et al. (2003).

\* $p < .05$ ; \*\* $p < .01$ .

direction that would be expected, with mindfulness positively predicting higher levels of vitality and negatively predicting higher levels of physical symptoms.

Hierarchical regression procedures were also used to test Hypothesis 2, that the relationship between current self-awareness and strain would be moderated by a person's integrative self-knowledge. Based on the results from the test of Hypothesis 1, we decided to exclude private self-consciousness from further consideration, choosing to focus our limited statistical power on the relationships involving mindfulness and integrative self-knowledge. Following procedures outlined by Cohen, Cohen, West, and Aiken (2003), all study variables were standardized prior to entry and the cross-product terms for the interaction were computed from these standardized scores. The full results of this analysis are summarized in Table 3.

These results do not support the hypothesized interaction effect between integrative self-knowledge and mindfulness, but they do suggest that integrative self-knowledge may itself be an important main effect predictor of vitality. In addition, there is evidence from Step 2 of these analyses that both integrative self-knowledge and mindfulness independently operate as significant negative predictors of a person's perceived physical symptoms.

## DISCUSSION

The present study considered the potential stress-resistance role that a person's self-awareness may

play within a sample of Iranian university students. In line with our first research objective, our results suggest that the measurement of present awareness may be better accomplished with an assessment of mindfulness as opposed to private self-consciousness. In doing so, our results suggest that students higher in mindfulness may retain a higher degree of vitality and minimize their experiencing of physical symptoms during a stressful period (in this case final exams). These results supported previous suggestions that self-awareness may be important in self-regulatory processes that underlie resistance to stress (Mullen & Suls, 1982; Suls & Fletcher, 1985).

We failed to identify an interactive effect on strain of momentary and temporally expanded awareness (i.e., mindfulness  $\times$  integrative self-knowledge) during a period of stress.

This finding was contrary to our second hypothesis and is somewhat surprising based on the existing theory. Mindfulness focuses on awareness of the self in the present. Integrative Self-Knowledge operationalizes a more temporally comprehensive psychological process involving awareness of past, present, and desired future self-experience. Self-regulation processes supposedly promote resistance to stress through a feedback loop that stabilizes self-functioning by comparing present output with internal standards of functioning. Internal standards must presumably be based on past and desired future self-experience, and the relative superiority of integrative self-knowledge in predicting perceived strain may confirm that possibility.

Mindfulness nevertheless was identified as an important empirical indicator of stress resistance by itself and in conjunction with integrative self-knowledge when predicting physical symptoms. Private self-consciousness proved to be the least central indicator of stress resistance. The basic validity of the scale appeared to be confirmed in its pattern of correlations with perceived stress, mindfulness, and integrative self-knowledge. However, it failed to be a significant predictor of vitality and physical symptoms during the final examination period. Previous studies in Iran (Ghorbani et al., 2004) and the USA (Watson & Biderman, 1993) have demonstrated that the Private Self-Consciousness Scale includes dimensions with ambiguous mental health implications. The relative failure of private self-consciousness to predict stress resistance perhaps reflected that ambiguity.

At the same time, however, emphasis needs to be placed on the fact that Mullen and Suls (1982) and Suls and Fletcher (1985) supported their model of self-regulation through use of the Private Self-Consciousness Scale. The possibility cannot be dismissed that the failure to observe parallel effects in the present study reflected cultural differences between Iranians and Americans. The translation of the Private Self-Consciousness Scale into Persian also was perhaps less than ideal in capturing the stress resistance potential of this measure. Numerous procedural details differed between the present Iranian and the two previous American investigations, and any of these could have been critical as well.

Conclusions based on these data must remain tentative due to limitations inherent in the project. Although we feel strongly that our use of university students is a strength of the present study in terms of its natural realism, we have some concerns that the stressful situation experienced by students may not have been extreme enough to influence the outcomes and allow the predictors to function. Closer consideration of our measure of perceived stress suggests that based on scale scores the sample was not experiencing a very high level of stress. Indeed, based on overall scores only about 25% of respondents reported an average response of “sometimes” to the items asking about experience with stress-inducing conditions.

Analysis of the items of this scale, however, do support our belief that final exams were stressful in their own way—responses to three of the items most likely to be linked to examination experiences were on average responded to as “fairly often” more than any of the other items. These items included: “In the last month, how often have you

been upset because of something that happened unexpectedly?”; “In the last month, how often have you felt nervous and ‘stressed’?”; and “In the last month, how often have you found yourself thinking about things you have to accomplish?” It would, therefore, be interesting to replicate this study in a population going through a stronger stress experience to see if the influence of self-awareness is increased in the presence of a stress situation that requires a more comprehensive personal response.

Among other limitations and opportunities for future research is our decision to measure our outcomes of vitality and physical symptoms across a period of 4 days. Projects assessing stress daily or for longer periods of time could result in different patterns of outcome. In addition, it would also be interesting to review exam grades or other objective performance criteria over an extended period of time and how these variables relate to a person’s self-awareness and stress. Self-report measures of stress-related functioning should also be supplemented in future studies by more objective behavioral and physiological indices of stress. Comparative analysis of these three self-awareness measures should be extended to other cultures. These and many other factors clearly require further analysis, but the present results should nevertheless encourage researchers to explore the role of self-awareness in self-regulation.

In summary, the present study suggests that mindfulness may be a less ambiguous and more centrally influential momentary self-knowledge construct than private self-consciousness. In addition, one’s integrative self-knowledge deserves further consideration for its role as an indication of a person’s self-awareness across an expanded period of time. Most generally and importantly, therefore, the findings of this project suggested that the temporal dynamics of self-knowledge during stress deserve additional research attention.

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