RESEARCH ARTICLE

The Relationship Between Integrative Self-Knowledge, Mindfulness, Self-Control, and Mental Health Parameters

La Relación Entre el Autoconocimiento Integrativo, la Atención Plena, el Autocontrol y los Parámetros de Salud Mental

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Summary

Background: Self-regulating is a set of processes that controls or alters individuals' behavior, emotion, and performance. We aimed to evaluate the relation between three components of self-regulating including integrative self-knowledge, mindfulness, self-control, and some variables of mental health and self-conscious emotions. **Methods:** A total of 233 Iranian university students voluntarily enrolled in the study. Seven questionnaire forms including Integrative Self-Knowledge Scale (ISKS), Attention Awareness Scale (MASS), Short Self Control Scale (SSCS), Costello & Comrey's Anxiety and Depression Scale, Rosenberg Self–Esteem Scale (RSES), Authentic Pride Scale (APS), and other as sham scale (OAS) were distributed to participants. The correlation between self-regulating variables, mental health, and self-conscious emotions were analyzed using Pearson's correlation coefficient test. **Results:** We found a negative correlation between self-regulating variables, depression, and anxiety. Our data also revealed that self-esteem positively related to integrative self-knowledge, mindfulness, and self-control. Among self-conscious emotions variables, authentic pride had a positive correlation with self-regulating variables whereas feelings of shame appeared a negative relationship with them. **Conclusion:** Integrative self-knowledge, mindfulness, and self-control as self-regulating components correlated to mental health and self-conscious emotions.

Keywords: integrative self-knowledge, mindfulness, self-control, anxiety, depression, self-esteem, authentic pride, shame.

Resumen

Antecedentes: la autorregulación es un conjunto de procesos que controla o altera el comportamiento, la emoción y el desempeño de los individuos. Nuestro objetivo fue evaluar la relación entre tres componentes de la autorregulación, incluido el autoconocimiento integrativo, la atención plena, el autocontrol y algunas variables de salud mental y emociones autoconscientes. **Métodos:** Un total de 233 estudiantes universitarios iraníes se matricularon voluntariamente en el estudio. Siete formularios de cuestionarios que incluyen Escala de autoconocimiento integrador (ISKS), Escala de conciencia de atención (MASS), Escala de autocontrol corta (SSCS), Escala de ansiedad y depresión de Costello & Comrey, Escala de autoestima de Rosenberg (RSES), Escala de orgullo auténtico (APS)), y otros como escala simulada (OEA) se distribuyeron a los participantes. La correlación entre las variables autorreguladoras, la salud mental y las emociones autoconscientes se analizó mediante la prueba del coeficiente de correlación de Pearson. **Resultados:** Encontramos una correlación negativa entre las variables autorreguladoras, depresión y ansiedad. Nuestros datos también revelaron que la autoestima se relacionó positivamente con el autoconocimiento integrativo, la atención plena y el autocontrol. Entre las variables de las emociones autoconscientes, el orgullo auténtico tuvo una correlación positiva con las variables autorreguladoras mientras que los sentimientos de vergüenza aparecieron una relación negativa con ellas. **Conclusión:** Autoconocimiento integrativo, atención plena y autocontrol como componentes autorreguladores correlacionados con la salud mental y las emociones autoconscientes.

Palabras clave: autoconocimiento integrador, mindfulness, autocontrol, ansiedad, depresión, autoestima, orgullo auténtico, vergüenza

Introduction

WHO defined mental health as "A state of well-being in which the individual realizes his or her own abilities can cope with the normal stresses of life can work productively, and can make a contribution to his or her community". Mental health is considered a part of the health and positive state of psychological wellbeing. Wellbeing can be a combination of cognitive elements and affective elements including; meaning, contentedness, life quality, common good, and happiness. Self-regulation as an integral component of mental and physical wellbeing refers to an individual capacity to control behaviors based on situations and both internal and external changes (1). Indeed, self-regulation is the act of altering or exerting control over behaviors, cognitions, and emotions. It is a set of behaviors that conscious, motivational, emotional, goal-directed, deliberative, social, physiologic, and reflective (2). Various terms are defined to explain the concept of self-regulation, including self-control, self-management, behavior management, goal-directed behavior, mood control, etc. Since self-regulating make a critical contribution to our ability to manage life's challenges, many psychologists and educators have suggested that it should be considered in the education and training system (3). Self-regulation is conceived as feedback or a cybernetic system that is consisted of individuals' standards or goals, current state monitoring and comparing with standards, and behaviors changing. Firstly, the individual considers a standard that imposes himself to obtain it. Secondly, they monitor the current state with the standard state. Finally, they alter their behaviors, cognitions, or emotions to reduce incompatibility between the current state and desired state (4). Baumann et al reported, weakness of self-regulatory lead to an intensive individual's emotional reaction to a stressful situation that is associated with impairing wellbeing and increasing psychological symptoms (5). Empowering people to generate positive influencing behaviors or actions as motivating effects can facilitate stress recovery (6). Diehl et al suggested self-regulatory capacities have a positive relation with self-efficacy whereas are negatively associated with depression (7). Self-regulating can be an attaining future goal instrument that facilitates or hinders motivation after some self-conscious emotional experience such as feeling of shame following failed goals. Self-regulatory capacities are related to physical and mental health. Self-consciousness and mindfulness may predict self-regulatory capacity (8). On the other hand, both self-consciousness and mindfulness are positively associated with integrative self-knowledge (9). Self-consciousness is mental and physical awareness of itself and its interactions with others and is considered as an adaptive personality process (10). Mindfulness reflects a perceptual processing mode that plays an important role in mental and physical health, behavioral regulation, and interpersonal relationships. Mindfulness focuses on individuals' awareness of the present (11). Integrative self-knowledge is a set of comprehensive processes that including awareness of past, present, and desired future self-experience. Ghorbani et al reported correlations with perceived stress, mindfulness, and integrative self-knowledge. Their data showed mindfulness is a significant predictor of self-regulation. They suggested that mindfulness positively related to predicting higher levels of vitality and negatively associated with predicting higher levels of stress-induced physical symptoms, whereas had no interaction with integrative self-knowledge. Mindfulness and integrative self-knowledge independently are negatively associated with perceived stress. Generally, self-regulatory processes promote control of stressful status via the feedback loop that improves self-function by comparing the present situation with internal standards (12). Therefore, further studies are required to investigate the

correlation between self-regulation variables and mental health. We aimed to evaluate the correlation of some mental health parameters (depression, anxiety, and self-esteem) and self-regulatory variables including; mindfulness, integrative self-knowledge, and self-control. We are also going to assess the correlation of two self-conscious emotions including shame and pride with self-regulatory variables.

Present Study

The present study applied mindfulness, integrative self-knowledge, and self-control as self-regulation variables. Then, we designed the project to assess the correlation between self-regulation and mental health parameters as well as self-conscious emotions. Three parameters were considered to evaluate mental health including; depression, stress, and self-esteem. Shame and authentic pride were applied as self-conscious emotions. We tested three important hypotheses.

First, self-regulation variables (mindfulness, integrative self-knowledge, and self-control) will negatively correlate with depression, and anxiety.

Second, self-regulation variables will positively correlate with self-esteem.

Third, self-regulation variables will positively correlate with authentic pride whereas will negatively correlate with shame.

Methods

Participants

A total of 233 (134 females, 99 males) students who studied at different universities located in Tehran including; Tehran University, Shahid Beheshti University, Allameh Tabataba'i University as well as Islamic Azad University Central and North Tehran Branches were included in the research sample.

Measures

Participants provided data on self-regulation, anxiety, depression, self-esteem, pride, and shame.

Self-regulation

Three aspects of self-regulation were assessed, including; integrative self-knowledge, mindfulness, and self-control. Integrative self-knowledge was measured using the Integrative Self-Knowledge Scale (ISKS). The ISKS is a scale that yields a single total score of Integrative Self-Knowledge. This self-report measure consists of 12 items that are rated on a five-point scale (largely untrue to largely true). An example item is: "What I have learned about myself from the past has helped me to react better in difficult situations". Brown and Ryan designed a 15-item scale to measure individual differences in mindfulness. Mindful Attention Awareness Scale

(MASS) was used to represent mindfulness in participants. The MASS questionnaire consists of 15 items that are estimated according to a six-point scale (almost always to never).

An example item is: "It's hard for me to focus on what's going on".

This scale yields a single number which higher scores indicate greater mindfulness. To assess self-control property is used Short Self Control Scale (SSCS) that developed by Tangney et al. SSCS is a self-questionnaire with 13 items graded by a five-point scale. An example item is:" it is difficult for me to break habits". SSCS total score is a single measure of self-control.

Anxiety and Depression

Costello & Comrey's Anxiety and Depression Scale (13) were used to assess individuals' anxiety and depression. The questionnaire utilized a 5-point scale (strongly disagree to strongly agree). The scale consisted of 23 items; anxiety scale (9 items), and depression scale (14 items). An example item of depression questionnaire is:" I feel sad and depressed". "I am an irritable and sensitive person" was a representative item of anxiety.

Self-esteem

Participants' self-esteem was assessed according to Rosenberg Self–Esteem Scale (RSES). Rosenberg Scale consists of 10 items rated on a five-point scale (largely untrue to largely true). An example item is:" I am optimistic about situations, interactions, and myself". The scale yields a single number representing a composite measure of self-esteem. The higher score is associated with greater self-esteem.

Pride

Authentic Pride Scale (APS) (14) was employed to evaluate pride. This questionnaire consisted of 7 items that are assessed on a Likert scale ranging from 1 (not at all) to 5 (completely). Half of the items describe authentic pride and another half hubristic pride.

Shame

Shame usually experiences when people have committed a moral transgression. Shame arises out of individual's attention to negative aspects of him/herself. Trait shame was measured using. The other as sham scale (OAS). This self-report assessment includes 8 items graded on a five-point scale (never to almost always). An example item is:" I feel small and insignificant". The scale yields a single score that the higher values indicating higher shame.

Procedure

Seven questionnaire forms were distributed to participants. All participants voluntarily responded to a total of 88 questions. The ethical issues in conducting research were

considered; including informed consent, respect for anonymity and confidentiality, respect for privacy, and communicating the results. Data collection was conducted over 2 months because of high population dispersion. After data collection, all scales were calculated. All analyses were adjusted according to characteristics of age and gender differences. Descriptive analysis was used to describe the percentage, frequency, mean, and standard deviation. The normality of data was analyzed using the Kolmogorov-Smirnov test with the significance level of $\alpha < 0.05$. Pearson's correlation coefficient was employed to measures the statistical relationship between variables. All data analyzed using SPSS software version 8 and P-value of less than 0.05 was considered significant.

Results

As shown in Table 1 Approximately 53% (53.6%) of the participants were female and 39.6% were male. The average age was 27.78 ± 6.29 for females and 29.37 ± 5.59 for males. Academic degree of student was 63.2% bachelor's degree, 28.8% master's degree, 1.2% a doctoral degree. Seventeen participants (6.8%) did not mention their academic degrees.

Table 1. demogheraphic information

Demographic Variables	Frequency (%)
Gender	
• **Female**	134 (53.6%)
• **Male Academic degree**	99 (39.6%)
• **Bachelor**	
• **Master**	158 (63.2%)
• **Doctoral Marital status**	72 (28.8%)
• **Single**	3 (1.2%)
• **Married**	
	154 (61.6%)
	79 (31.6%)

Cronbach's alpha used to measure reliability (Table 2). As shown in Table 2, Cronbach's alpha for all measures was higher than 0.7, indicating all variables' internal consistency and high reliability.

Table 2. Means, standard deviations, and Cronbach alpha values for measures

Measures	Mean ± SD	Cronbach alpha	Items' number
Integrative self-knowledge	41.11±7.24	0.750	12
Self-control	44.07±8.36	0.752	13
Mindfulness	61.92±12.80	0.892	15
Depression	33.08±10.42	0.882	14
Anxiety	24.97±6.24	0.750	9
Self-esteem	35.04±7.04	0.770	10
Authentic pride	22.05±6.06	0.866	7
Shame	18.82±7.50	0.925	8

Table 3. Correlation analysis results of Integrative self-knowledge, Self-control,

Measurement	1	2	3	4	5	6	7	8
Integrative	1							
self - knowledge	0.44**	1						
Self-control	0.30**	0.50**	1					
Mindfulness	-	-	-	1				
Depression	0.41**	0.50**	0.52**	0.05	1			
Anxiety	-	-	-	-0.03	-			
Self-esteem	0.40**	0.37**	0.25**	-	0.63**	1	1	
Authentic pride	0.45**	0.48**	-	0.46**	-	0.48**	-	
Shame	0.23**	0.26**	0.41**	0.36**	0.17**	-	0.13**	1
			0.31**		0.28**	0.37**		
	0.32**	0.33**	-					
			0.20**					

mindfulness and mental health parameters
Note: ** P<0.01

All the variables fully complied with normality criteria. Pearson's correlation coefficient analysis (Table.3) showed integrative self-knowledge positively correlated with self-control ($r= 0.44, p<0.01$) and mindfulness ($r= 0.30, p<0.01$). Moreover, integrative self-knowledge negatively correlated with depression ($r= -0.41, p<0.01$) and anxiety ($r= -0.40, p<0.01$) whereas its relation with self-esteem is positive ($r= 0.45, p<0.01$). A negative correlation detected between depression and anxiety with self-control ($r= -0.50, r= -0.33$, respectively, all $p<0.01$). Depression ($r= -0.52, p<0.01$) and anxiety ($r= -0.25, p<0.01$) are also negatively correlated with mindfulness. Both variables of self-control and mindfulness appeared a positive correlation with self-esteem ($r= 0.48, r=0.41$, respectively, all $p<0.01$). Self-conscious emotions have shown a statistically significant relation with self-regulating variables. Integrative self-knowledge, self-control, and mindfulness had a positive correlation with authentic pride ($r = 0.23, r = 0.26, r= 0.31$, respectively, all $p<0.01$). In contrast, shame revealed a negative correlation with Integrative self-knowledge ($r= -0.32, p<0.01$), self-control ($r= -0.33, p<0.01$), and mindfulness ($r= -0.20, p<0.01$).

Discussion

As mentioned self-regulation enables an individual to reach their goals by adjusting their behaviors through controlling thoughts, emotions, motivations, and function (15). Both experimental and theoretical studies reveal that self-regulation has consisted of three components: self-knowledge including integrative self-knowledge and mindfulness, self-control, and self-compassion (16). Self-knowledge and mindfulness have been reported as key elements of self-regulation by Ghorbani et al (17). The present study employed integrative self-knowledge, self-control, and mindfulness as self-regulating components. Then, we assessed the correlation of self-regulating with anxiety, depression, and self-esteem as mental health parameters as well as authentic pride and shame as self-conscious emotions among Iranian university students. Our results supported all defined hypotheses.

With regard to the correlation analysis, our data showed self-regulation variables had a negative relationship with depression and anxiety that is completely compatible with the first hypothesis. Consistent with our finding, different studies reported a negative correlation between self-regulation and various mental disorders such as neuroticism, depression, anxiety, and stress (18, 19). Valikhani et al also showed depression and stress appeared a strong negative correlation with integrative self-knowledge and a moderate negative correlation with mindfulness and self-control. They also reported a strong negative correlation between anxiety and both integrative self-knowledge and mindfulness whereas self-control had a moderate negative relationship with anxiety (16). As expected, we displayed a positive relation between self-regulating variables and self-esteem. Ghorbani et al revealed that mindfulness, integrative self-knowledge, and self-control are negatively associated with perceived stress, depression, and anxiety whereas their relationship with self-esteem and satisfaction with life are positive (20). A study on a group of 206 adolescents from 16 to 24 years delineated a longitudinal relation between self-esteem and affective self-regulatory efficacy (21). Christopher et al found a direct positive relationship between mindfulness and self-esteem. They experimentally presented increasing mindfulness caused an improvement in self-esteem (22). A review article highlighted that dispositional mindfulness had a significantly positive association with self-esteem (23). Bajaj and colleagues also suggested mindfulness correlated to self-esteem, anxiety, and depression that self-esteem mediated mindfulness-induced effects on anxiety and depression (24). Moreover, findings from a study in 426 university students showed that self-esteem and self-control negatively predicted academic procrastination. They also reported the mediatory role of self-esteem in the association between academic procrastination and self-control (25). Self-conscious emotions correlation analysis indicated that self-regulation variables are positively correlated with authentic pride but negatively correlated with feelings of shame. There are limited studies in the context of linking self-regulating variables, shame, and pride. Tangney et al expressed high self-control individuals had lower feelings of shame. In contrast, poor self-control individuals are predisposed to experience painful shame emotion (26). Investigation on 159 participants has indicated mindfulness and self-compassion had a negative correlation with shame experience. This study also showed non-judgment facet of mindfulness is a main predictor of shame (27). Carver and colleagues have appeared authentic pride had a significant positive (r=0.31, p<0.001) correlation with the self-control scale and is compatible with goal achievement (28). In conclusion, we showed different components of self-regulating had either positive or negative correlation with various aspects of mental health and self-conscious emotions. Additional study on a large scale is required to confirm how the correlation between self-regulating variables alone or in interaction with each other and mental health parameters. In addition, we suggest further studies should conduct to assess the mediator role of integrative self-knowledge and mindfulness, self-control in the relationship between different aspects of mental health or self-conscious emotions.

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