

THE DEVELOPMENT OF THE SELF-REGULATION OF WITHHOLDING NEGATIVE EMOTIONS QUESTIONNAIRE

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Based on the Self-Determination Theory, a questionnaire was developed to measure individual differences in the Self-Regulation of Withholding Negative Emotions (SRWNE). Measurement reliability and validity concerning the scale were examined in three studies. Results in Study 1 demonstrated the distinctiveness of the SRWNE from emotional regulation measures, suggesting that the SRWNE may be appropriate to measure styles of self-regulation and to clarify the negative affect-health relation. In Study 2, test-retest reliability of scores on the SRWNE subscales was examined as was validity of the SRWNE with respect to coping strategies and health. The SRWNE was related to self-reports of health and may be relevant for predicting how people cope with stress. Study 3 compared a Korean sample with the U.S. sample in Study 2 and suggested construct comparability of the SRWNE across cultures and genders.

Research has documented a positive relation between expression of emotion and indices of health (see, e.g., Beutler, Engle, Oro-Beutler, Daldrup, & Meredith, 1986; Friedman & Booth-Kewley, 1987; Watson & Pennebaker, 1989). Accordingly, the relation of individual differences to the extent to which people withhold expression of emotion and various health outcomes has been extensively examined.

Bonanno, Davis, Singer, and Schwartz (1991) and Weinberger (1990) identified a repressive personality style, and studies found that repressors rel-

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ative to nonrepressors were more likely to develop cancer (Cox & Mackay, 1982) and had a shorter period of being recurrence free (Jensen, 1987). Further studies have related repressing, denying, or inhibiting negative emotions to asthma, cancer, coronary heart disease, and suppressed immune functioning (Goldstein, Edleberg, Meier, & Davis, 1988; Schwartz, 1990) and to lower survival rates after diagnosis (Dattore, Shontz, & Coyne, 1980).

However, the link between emotional expression versus withholding and health outcomes has been challenged by more complex findings. For instance, facial emotional expression has been found to attenuate arousal (Buck, 1984) as well as augment arousal (Lanzetta, Cartwright-Smith, & Eleck, 1976); cardiovascular disease has been related to emotional expression (Hecker, Chesney, Black, & Frautschi, 1988) as well as to inhibition of emotional expression (Haynes, Feinleib, & Kannel, 1980; King & Emmons, 1990). Furthermore, studies have found that conflict between a personal goal to express emotions and social norms against it was related to negative health symptoms (King & Emmons, 1991; Pennebaker & Lightner, 1988) and that inconsistency between people's personal styles and situationally prompted behaviors led to poor physiological indicators (Engebretson, Matthews, & Scheier, 1989; Richman, 1988).

Such results suggest the necessity of considering other individual differences as well as situational factors in the regulation of emotional expression. One example is King and Emmons's (1990) proposal that ambivalence about not expressing emotion, rather than inexpressiveness per se, is what fosters ill-being, and findings showed that ambivalence was positively associated with self-reported physical symptoms, the number of visits to health care providers, and depression (Katz & Campbell, 1994; King & Emmons, 1990). It thus appears that individual differences in emotional regulation, including the tendency to express negative emotions and ambivalence about expressing negative emotions, may influence health, although the process underlying the relations remains unclear. To help clarify the processes, self-determination theory (SDT) was employed for developing a scale to measure individual differences in emotional regulation.

Internalization of Emotional Regulation

SDT (Deci & Ryan, 1985a) distinguishes between two classes of intentional behavior: autonomous and controlled. Autonomous behavior is regulated through the process of choice and has an internal perceived locus of causality (deCharms, 1968). Controlled behavior is pressured or coerced by interpersonal or intrapsychic forces and has an external perceived locus of causality.

Internalization concerns the process of taking in an *external regulation*, and SDT distinguishes between types of internalization, which result in dif-

ferent types of regulation that can be ordered along the controlled-to-autonomous continuum (Ryan & Connell, 1989).

One type of internalization is referred to as introjection. It represents only a partial internalization and results in *introjected regulation*. This type of regulation, in which people pressure and coerce themselves to behave in particular ways, involves the implicit expectation of self-approval for compliance and self-derogation for noncompliance. Introjected regulation, which is essentially self-control, is phenomenally still closely anchored to external forces and is often prompted by the desire to avoid guilt or shame. When people withhold expression of negative emotion because they think they should and would feel ashamed if they did not, the regulation is introjected. Both external and introjected forms of regulation are considered relatively controlled and thus low in autonomy.

When people identify with a regulation and its value, the resulting regulation is called *identified regulation*. As members of a group or society, people may volitionally self-regulate in ways that are valued by that collective. For example, they may freely withhold a negative emotion because they personally value not disrupting a group process.

Finally, when internalization is complete, people will have integrated the identification with other aspects of their self and will be autonomous in the subsequent behavior. *Integrated regulation* of emotions involves being aware of one's emotions and regulating their expression with a full sense of choice. The goal of emotional integration is not to comply with social norms by suppressing strong inner urges; rather, it is to assimilate emotions and utilize inner experiences flexibly in acting autonomously. When an emotional regulation has been integrated, individuals experience little inner conflict about it and thus may evidence better health. Both identified and integrated regulations are considered relatively autonomous forms of internalized regulation.

The regulation for withholding expression of negative affect is broadly defined as the way in which individuals manage the experience and withholding of negative emotions and impulses. For example, when an event stimulates a negative emotion such as anger or fear, people might either express or not express that feeling through words or actions. According to SDT, having healthy outcomes associated with the inexpression of negative emotions requires the full internalization and integration of the regulation of the relevant emotional withholding. The withholding would be autonomous, and people would choose to withhold because it feels personally right to do so in that situation. In contrast, when controlled, people would suppress the feelings because they believe it is bad to have such feelings and/or to express them. They would experience conflict and tension, so less healthy outcomes would follow.

Autonomous self-regulation has been associated with well-being and other positive outcomes in a variety of settings including education

(Grolnick, Ryan, & Deci, 1991), institutions for the aged (Kasser & Ryan, 1999), close relationships (Blais, Sabourin, Boucher, & Vallerand, 1990), political attitudes (Koestner, Losier, Vallerand, & Carducci, 1996), religious behavior (Ryan, Rigby, & King, 1993), and health care (Williams, Grow, Feedman, Ryan, & Deci, 1996).

The concept of individual difference in regulatory style for withholding negative affect is considered a relatively stable aspect of personality. That is, it is not a state that fluctuates easily as a function of the situation, but neither is it a stable trait that cannot be affected over time. Rather, it is relatively stable over time but can be influenced by factors such as therapeutic interventions.

Overview

Study 1 was intended to develop an SDT-based measure of individual differences in people's motivation for withholding expression of negative affect. The scale assesses the degree to which people have internalized the rationale for withholding negative affect. The validity of the proposed scale was examined to determine the extent to which it is related (a) to other measures of emotion and emotion management (Study 1), (b) to measures of coping (Study 2), and (c) to global social contexts such as culture and gender (Study 3). The use of samples from different cultures was done to increase the generalizability of the proposed scale's reliability and validity.

Study 1: Development of the Self-Regulation of Withholding Negative Emotions Questionnaire (SRWNE)

In this study, four SRWNE subscales (two controlled and two autonomous) were developed and validated. We used several validated measures of (a) constructs from SDT, (b) constructs concerning interpersonal styles, (c) emotion and emotion management constructs, and (d) general well-being constructs. The strategy involved conducting a factor analysis on all constructs and then relating the factor scores to the four SRWNE subscales and three indices. Scale validity would be supported by the controlled subscales and indices correlating negatively with positively toned factors (e.g., optimism) and correlating positively with negatively toned factors (e.g., social anxiety), whereas the autonomous subscales and indices correlated positively with the positively toned factors and correlated negatively with the negatively toned factors.

Method

PARTICIPANTS

Participants were 168 college students (88 men, 79 women, 1 unspecified) who received course credit in a psychology course at the University of Rochester. Participants worked in small groups of as many as 20 to complete a packet of questionnaires. Participants were fully debriefed.

THE SRWNE

An initial pool of 33 items represented the four self-regulatory styles (Ryan & Connell, 1989): external regulation (7 items), introjected regulation (9 items), identified regulation (7 items), and integrated regulation (10 items). The number of items was relatively small for a scale construction project. However, the items were all adapted from self-regulation questionnaires that used the SDT framework and were validated in different domains, so we assumed we would be able to select a subset of these items that would yield adequate reliability coefficients.

The scale was constructed to assess the motivational reasons for withholding expression of negative emotions using two stems: "Why do you not express your negative emotions to other people?" (17 items) and "Why do you sometimes act like everything is all right, even though you are upset?" (16 items). Participants responded to the randomly ordered 33 items on a 7-point scale anchored by 1 = *strongly disagree* and 7 = *strongly agree*. A composite score for each of the four subscales was obtained by averaging the relevant items in that subscale across the two stems.

Sample items are the following: for external regulation, "I'm afraid that people wouldn't like me if I expressed my feelings"; for introjected regulation, "I don't think I have the right to bother other people with my negative feelings"; for identified regulation, "It is important for me personally not to be hurtful to others"; and for integrated regulation, "I find it personally satisfying to be able to feel my emotions without letting them be disruptive."

To improve the internal consistency of each subscale, one item was dropped from the introjected pool, three items were moved from the integrated subscale to the identified subscale based on correlations among the two subscale items (the identified and integrated subscales share a theoretical boundary on the self-determination continuum), and two items were dropped from the initial identified pool and two from the integrated pool due to low item-total correlations.

The resulting 28-item SRWNE scale appears in the appendix, and Table 1 shows descriptive statistics for the scale. The four SRWNE subscales were shown to have adequate reliabilities ($.67 < \alpha_s < .78$). The simplex structures of the SRWNE were supported by the pattern of correlations in Table 2, in

Table 1
Means and Standard Deviations for the Self-Regulation of Withholding Negative Emotions Questionnaire Subscales (Study 1, Final 28-Item Scale)

	Number of Items	<i>M</i>	(<i>SD</i>)	α	Men	Women	<i>t</i> (165)
External regulation	7	3.69	(1.04)	.75	3.69	3.68	.05
Introjected regulation	8	3.48	(1.05)	.78	3.58	3.36	1.37
Identified regulation	8	4.53	(0.81)	.67	4.48	4.58	-.79
Integrated regulation	5	4.29	(1.17)	.73	4.44	4.13	1.78
Controlled index		0.00	(1.86)	.85	.09	-.13	.77
Autonomous index		.00	(1.73)	.78	.07	-.08	.55
Relative autonomous index		.00	(1.79)	.88	-.02	.05	-.26

Table 2
Pearson Correlation Coefficients Among the Self-Regulation of Withholding Negative Emotions Subscales and Indices (Study 1 and Study 3)

	1	2	3	4	5	6	7
1. External regulation	—	.64	.49	.34	.91	.48	-.47
2. Introjected regulation	.69	—	.56	.26	.91	.47	-.48
3. Identified regulation	.32	.51	—	.49	.58	.86	.26
4. Integrated regulation	.35	.34	.50	—	.33	.86	.52
5. Controlled index	.92	.92	.46	.37	—	.53	-.52
6. Autonomous index	.38	.49	.87	.87	.47	—	.45
7. Relative autonomy index	-.56	-.46	.37	.45	-.55	.45	—

Note. All correlation coefficients are significant at $p < .001$. Correlation coefficients above the diagonal are for Study 1 and below the diagonal are for Study 3. All correlation coefficients reported in this table were significant with the Bonferroni procedure (Rosenthal & Rosnow, 1991).

which subscales were more strongly correlated with others that are theoretically adjacent than with those that are more distant.

Subscale scores were standardized, and the standardized scores for external and introjected regulation were added to form a controlled index (CI) for withholding emotions. The standardized scores for identified and integrated regulation were added to create an autonomy index (AI), and a relative autonomy index (RAI) for withholding expression was created by subtracting the CI from the AI. Table 2 shows the correlations of the four SRWNE subscales with the three indices.

T tests were performed to examine gender differences on each subscale and index. As shown in Table 1, there were no significant gender differences on the subscales or indices, although men scored marginally higher than women on integrated regulation, $t(1, 165) = 1.78$, $p = .09$. At the item level, men scored higher than women on Items 3, 24, and 28.

OTHER MEASURES

General Causality Orientations Scale. This 36-item scale (Deci & Ryan, 1985b) assesses individual differences in general motivational orientations: autonomy orientation, control orientation, and impersonal orientation. Only the autonomy and control orientations were used.

Self-Determination Scale. This 10-item scale (Sheldon & Deci, 1996) assesses a general tendency to be in contact with oneself and to feel a sense of choice in one's actions.

Attachment style. Four prototypic attachment patterns are described that result from a combination of people's positive and negative concepts of themselves and close others (Bartholomew & Horowitz, 1991). The four styles differ in their degree of attachment security, and participants get a score on each.

Self-Consciousness Scale. Developed by Fenigstein, Scheier, and Buss (1975), the 23-item scale measures three aspects of self-consciousness: private self-consciousness, public self-consciousness, and social anxiety.

Trait Meta-Mood Scale. This scale (Salovey, Mayer, Goldman, Turvey, & Palfai, 1995) measures individuals' ability to identify feelings and regulate these feelings adaptively. The short form has 24 items to measure individual differences in attention to mood, discriminating among feelings, maintaining positive moods, and repairing negative moods.

Negative Mood Regulation. Catanzaro and Mearns (1990) developed a 30-item measure of generalized beliefs that behaviors or cognitions can alleviate a negative mood state.

Ambivalence Over Emotional Expressiveness Questionnaire. This 28-item scale (King & Emmons, 1990) measures ambivalence about revealing versus hiding emotions.

Emotional Expressiveness Questionnaire. King and Emmons (1990) also developed a 16-item scale to measure the tendency to express a variety of positive and negative emotions.

Weinberger Adjustment Inventory–Short Form. This 35-item measure assesses socioemotional adjustment for nonclinical populations (Weinberger, 1990).

Life Satisfaction. This 5-item scale (Diener, Emmons, Larsen, & Griffin, 1985) measures global cognitive-judgmental aspects of subjective well-being.

Center for Epidemiological Studies Depression Scale (CES-D). This 20-item measure assesses depressive symptoms within the general population (Radloff, 1977).

Cohen-Hoberman Inventory of Physical Symptoms (CHIPS). The 36-item scale measures physical ailments and excludes psychological symptoms (Cohen & Hoberman, 1983).

Results

CORRELATIONS AMONG MEASURES

The higher-order factor analysis of the emotion measures (with varimax rotation) examined the underlying structural relationship among the measures. Using the rule of eigenvalue greater than 1.0, five meaningful factors emerged, accounting for 60.7% of the variance of the original measures.

The first factor (eigenvalue = 6.35) was labeled *optimism*, with negative mood regulation, repair, life satisfaction, self-determination, restraint, and clarity as its positive indicators and CES-D, distress, and CHIPS as its negative indicators. The second factor (eigenvalue = 2.25) was labeled *social anxiety*. It has ambivalence about emotional expressiveness, social anxiety, and preoccupied attachment as its positive indicators and emotional expressiveness as its negative indicator. The third factor (eigenvalue = 1.56), named *awareness*, has attention, private self-consciousness, and autonomy orientation as its positive indicators. The fourth factor (eigenvalue = 1.36) was labeled *mistrust of others*, and it has the fearful and dismissing attachment styles as its positive indicators and the secure attachment style as its negative indicator. Finally, the fifth factor (eigenvalue = 1.23) was called *external focus*, with the control orientation and public self-consciousness as its positive indicators.

The five factor composites were subjected to Pearson correlational analyses with four SRWNE subscales and three indices (upper half of Table 3). As expected, controlled SRWNE (i.e., external and introjected regulation and CI) was positively associated with negative indicators of affect status. The controlled SRWNE related to pessimism, social anxiety, mistrust of others, external locus of causality, and lack of emotional awareness. Also, as expected, the autonomous SRWNE (i.e., identified and integrated regulation and autonomous index) related negatively to negative indicators of affect status. However, autonomous SRWNE also related positively to social anxiety and mistrust of others, which suggests that no matter what one's reasons for

Table 3
Pearson Correlation Coefficients Between Self-Regulation of Withholding Negative Emotions Subscales and Indices and the Higher-Order Factors of the Emotion Measures (Study 1) and the Coping/General Health Measures (Study 2)

	ER	JR	DR	TR	CI	AI	RAI
Study 1							
Factor 1:							
optimism	-.39****	-.34****	.02	.09	-.40****	.06	.48****
Factor 2:							
social anxiety	.61****	.51****	.29****	.09	.60****	.22***	-.41****
Factor 3:							
awareness	-.10	-.23***	.00	.08	-.18**	.04	.23***
Factor 4:							
mistrust of others	.26****	.28****	.20***	.24***	.29****	.26***	-.05
Factor 5:							
external focus	.31****	.16**	.02	.01	.26***	.01	-.25***
Study 2							
Factor 1:							
psychosomatics	.36****	.32****	.08	-.01	.37****	.04	-.34****
Factor 2:							
problem-focused	-.23****	-.20****	.07	.23****	-.23****	.17***	.40****
Factor 3:							
support seeking	-.13**	-.27***	-.13**	-.08	-.22****	-.12**	.11*
Factor 4:							
denial	.34****	.26****	.04	.11*	.32****	.08	-.25****
Factor 5:							
rumination	.33****	.31****	.16***	.16***	.34****	.18***	-.18***
Factor 6:							
acceptance	-.03	-.03	.11*	.22****	-.03	.19****	.21****

Note. ER = external regulation; JR = introjected regulation; DR = identified regulation; TR = integrated regulation; CI = controlled index; AI = autonomous index; RAI = relative autonomy index. $N = 168$ (Study 1); $N = 305$ (Study 2). With the Bonferroni procedure, correlation coefficients for Study 1 may be due to chance if the significance level fails to reach $p < .01$, and correlation coefficients for Study 2 may be due to chance if the significance level fails to reach $p < .009$.

* $p < .10$. ** $p < .05$. *** $p < .01$. **** $p < .001$.

withholding negative emotion, the withholding is related to social anxiety and mistrust. Finally, RAI was related to optimism, emotional awareness, internal locus of causality, and lack of social anxiety.

In general, the controlled SRWNE subscales showed stronger correlations with emotion measures than did the autonomous subscales. This suggests that the emotion measures may be reflecting aspects of emotional regulation that are controlled to varying degrees by interpersonal or intrapersonal forces, rather than reflecting characteristics that involve choice by the self.

In sum, Study 1 provided preliminary reliability and validity evidence with regard to the SRWNE scale. Two additional studies were performed to further examine the validity of the SRWNE.

Study 2: Validity and Reliability

Emotional self-regulation involves coping with stress, and the types of emotional regulatory processes one employs may result in different mental and physical consequences. Thus, the extent to which the SRWNE relates to measures of coping and general health was explored in Study 2.

Method

PARTICIPANTS

A total of 305 psychology students (96 men, 209 women) completed a questionnaire packet (including the SRWNE) at the beginning of a semester (Time 1) and completed the SRWNE questionnaire again approximately 8 weeks later (Time 2).

MEASURES

The questionnaire packet included the 28-item SRWNE and the following measures.

General affect. A 20-item Positive and Negative Affect Schedule (Watson, Clark, & Tellegen, 1988) assessed general feelings using a 5-point Likert-type response format. Scores for the 10 positive and 10 negative adjectives were averaged within subscales to form composite scores for general positive affect and general negative affect.

Coping. A 72-item revised COPE (Zuckerman & Gagne, 2000) measured 18 coping strategies: 10 original COPE subscales (Carver, Scheier, & Weintraub, 1989), 1 revised subscale, and 7 additional ones. A 4-point Likert-type response format was used. Coping strategies were active coping, planning, suppression of competing activities, restraint coping, instrumental support seeking, positive interpretation, acceptance, denial, behavioral disengagement, emotional support seeking, mental disengagement, expressing emotion, understanding emotion, repairing emotion, other blame, replacement, self-focused rumination, and self-blame.

General health. A 28-item General Health Questionnaire (Golberg & Hillier, 1979) assessed mental and physical health status concerning anxiety, depression, social dysfunction, and somatics using a 4-point Likert-type response format. Participants rated the extent to which they experienced each symptom during the previous 3 weeks. A general health composite was formed by reversing and averaging the four subscale scores. Higher scores indicate better health.

Table 4
Means, Standard Deviations, and Alphas of Self-Regulation of Withholding Negative Emotions Subscales (Study 2 and Study 3)

	Study 2								
	Time 1			Time 2			Study 3		
	<i>M</i>	<i>SD</i>	α	<i>M</i>	<i>SD</i>	α	<i>M</i>	<i>SD</i>	α
External regulation	3.55	1.21	.79	3.48	1.27	.83	4.83	1.40	.79
Introjected regulation	3.30	1.20	.83	3.24	1.21	.85	4.86	1.12	.71
Identified regulation	4.48	1.03	.77	4.55	0.99	.76	5.96	1.05	.68
Integrated regulation	4.38	1.29	.76	4.38	1.30	.80	4.33	1.44	.70
Controlled index	0.00	1.87	.89	0.00	1.87	.90	0.00	1.84	.85
Autonomous index	0.00	1.79	.84	0.00	1.79	.85	0.00	1.73	.78
Relative autonomy index	0.00	1.81	.91	0.00	1.77	.92	0.00	1.83	.87

Results

Means, standard deviations, and alphas for the SRWNE subscales at Time 1 and Time 2 are reported in Table 4. Scores were adequately reliable (α s > .75), and 8-week test-retest reliability coefficients were also adequate (r s > .61, p s < .001). The SRWNE subscales yielded a simplex structure at both times (not presented in the table), and a series of t tests revealed no gender differences on the subscale scores.

RELATIONS AMONG CONSTRUCTS

The subscale scores of the coping and general health measures were subjected to a higher-order factor analysis with varimax rotation to examine underlying structure among the measures. The analysis extracted six factors with eigenvalues greater than 1 (64.8% of the variance explained). The first factor (eigenvalue = 5.50), labeled *psychosomatics*, has general health composite, anxiety, somatics, depression, negative affect, and dysfunction as its indicators. The second factor (eigenvalue = 4.38), labeled *problem-focused coping*, has active coping, planning, positive interpretation, positive affect, and repairing as its indicators. The third factor (eigenvalue = 1.95), labeled *support seeking*, has emotional support seeking, expressing emotion, instrumental support seeking, and understanding emotion as its indicators. The fourth factor (eigenvalue = 1.81), labeled *denial*, has behavioral disengagement, denial, other blame, mental disengagement, and replacement as its indicators. The fifth factor (eigenvalue = 1.44), labeled *self-blame*, has self-blame and self-focused rumination as its indicators. The sixth factor (eigenvalue = 1.34), labeled *acceptance*, has acceptance and restraint coping as its indicators. Factors 2, 3, and 5 are positive factors, whereas 1, 4, and 6 are negative.

The six factor composites were then subjected to Pearson correlational analyses with four SRWNE subscales and three indices (the lower half of Table 3). Controlled SRWNE subscales and index were expected to be positively related to the negative factors and negatively related to the positive ones. They related as predicted to all except Factor 6, acceptance. Autonomous SRWNE subscales and indices were expected to be negatively related to negative factors and particularly related to positive factors. These relations were weaker than the ones for controlled regulation. Further autonomous regulation was positively associated with rumination and negatively associated with support seeking, which suggests that no matter what one's reasons for withholding negative emotion, the withholding is related to self-focused rumination and avoiding social support.

The results in Study 2 showed acceptable test-retest reliability for scores on the SRWNE and demonstrated that the SRWNE construct was related to various coping styles and health outcomes in the theoretically expected directions. The SRWNE subscales were also associated with mental and physical adjustment measures as would be expected.

Study 3: Comparability Test of the SRWNE

Emotional self-regulation requires internalizing values and regulatory processes, resulting in individual differences in the regulation of emotions. SDT posits that the internalization process is universal but that cultures may differentially facilitate or inhibit individuals' internalization process. For example, collectivistic cultures, such as in Korea, compared to individualistic cultures, such as in the United States, emphasize collective identity, emotional dependence, and behavioral regulation by in-group norms (Bond, 1998; Kim, 1994; Triandis, McCusker, & Hui, 1990). Such emphasis on establishing an interpersonal harmony and considering in-group members' well-being as they deal with their own emotions, may be perceived as pressure or external control and could result in individuals in Korean culture engaging in more controlled emotional regulation than those in the U.S. culture. This study examined these issues. In addition, in this study, we also examined the influence of gender on the internalization of the value of emotional withholding by Americans and Koreans (Cross & Madson, 1997).

Method

PARTICIPANTS

A total of 326 college students (153 men, 173 women) at Yonsei University, Seoul, South Korea, volunteered to complete the 28-item SRWNE.

Table 5
Unstandardized Estimates of Construct Means and Standard Deviations for the Self-Regulation of Withholding Negative Emotions Subscales and Correlations Among the Subscales

Group	ER	JR	DR	TR
Mean				
Korean men	0.00	0.00	0.00	0.00
Korean women	-0.04	0.20	-0.04	-0.05
U.S. men	-1.24****	-1.37****	-1.10****	-0.11
U.S. women	-1.26****	-1.56****	-1.18****	-0.14
Standard deviation				
Korean men	1.00	1.00	1.00	1.00
Korean women	1.20	1.05	0.93	1.16
U.S. men	0.84	0.93	0.91	0.78
U.S. women	0.98	1.03	0.98	0.83
Correlation				
		Korean Women		
Korean men				
ER	—	.99	.55	.45
JR	.97	—	.42	.43
DR	.51	.65	—	.63
TR	.61	.75	.83	—
		U.S. Women		
U.S. men				
ER	—	.93	.64	.41
JR	.99	—	.74	.49
DR	.56	.68	—	.71
TR	.50	.41	.84	—

Note. ER = external regulation; JR = introjected regulation; DR = identified regulation; TR = integrated regulation. The group of Korean men was a reference group ($M = 0$, $SD = 1$). All SDs were significantly different from the reference group at $p < .001$.

**** $p < .001$.

Results

Means, standard deviations, and alphas for the SRWNE subscale scores are reported in Table 5. Correlations among SRWNE subscales, which are below the diagonal in Table 2, support the simplex structure. A series of t tests revealed no gender differences on SRWNE subscales.

TEST FOR MEASUREMENT COMPARABILITY OF THE EMOTIONAL SELF-REGULATION CONSTRUCT

A confirmatory factor analysis was conducted to examine the equivalence of measurement structure of the SRWNE questionnaire (construct comparability) across two cultures and two genders, comparing Study 2 and Study 3 data sets. To examine the mean level relations across two cultures and two

genders, multiple-group mean and covariance structures analysis with AMOS 4.0 (Arbuckle & Wothke, 1999; Little, 1997) was used. Two questions could be answered: (a) whether the same underlying structure exists across multiple groups (i.e., measurement equivalence of the constructs) and (b) whether the different cultural groups have the same means on the latent constructs. We used four fit indices: root mean squared error of approximation (RMSEA), normed fit index (NFI), Tucker-Lewis Index (TLI), and comparative fit index (CFI). Adequate fit of a specified model to the data is indicated when the RMSEA has a value less than .05 (Browne & Cudeck, 1993) and the NFI, TLI, and CFI have values greater than .9 (Marsh, Balla, & McDonald, 1988; Tanaka & Huba, 1989).

Model specification. For each construct of SRWNE, multiple indicators were created by averaging two to four items within each relevant subscale. For external regulation (ER), introjected regulation (JR), and integrated regulation (TR), two observed indicators were created for each construct (er1 and er2 for ER, jr1 and jr2 for JR, and tr1 and tr2 for TR), and for identified regulation (DR), three observed indicators (i.e., dr1, dr2, dr3) were created. Creating multiple observed indicators for each construct allows for measurement error, thus improving the fit of the measurement model. The four constructs were allowed to correlate with each other, reflecting the simplex structure of the SRWNE scale. Each observed variable was constrained to be the indicator of one construct only. Elements in the error matrices of the observed variables were freed to correlate diagonally. In addition, measurement error variances between er2 and tr2, jr2 and dr1, jr2 and dr2, jr2 and dr3, and dr3 and tr1 were freed to correlate with each other to improve the model fit. All other off-diagonal elements in the error matrices were fixed to zero. These specifications were equated across two cultures and two gender groups.

The fit of the specified model with no cross-group equality constraints showed satisfactory fit (RMSEA = .03, NFI = .96, TLI = .99, and CFI = .98), indicating that the general structure is tenable. To test for measurement equivalence, invariance of the factor pattern coefficients was enforced. The overall model fit was still quite satisfactory (RMSEA = .04, NFI = .95, TLI = .99, and CFI = .97). Then, invariance of the intercepts was added and the overall model fit was marginally acceptable (RMSEA = .10, NFI = .96, TLI = .94, and CFI = .96). The results indicate that the SRWNE constructs have equivalent measurement properties and are comparable across culture and gender groups examined here (see Little, 1997).

TESTS FOR SOCIOCULTURAL DIFFERENCES ON AUTONOMOUS REGULATION OF WITHHOLDING

Because construct comparability was tenable, equality of the latent means and equality of the latent covariance structures were tested across the four

groups. All corresponding parameters (viz., factor pattern coefficients, intercepts, and error variances of observed variables) were freed for the first group and set to be invariant for the other groups. The estimated latent factor means were fixed to 0 and standard deviations were fixed to 1 in the first group and freed in the subsequent groups; thus, a given construct's mean and standard deviation could be identified and estimated as a relative difference from the reference point estimated in the first group (McArdle & McDonald, 1984). The covariances among factors were freed in the first group and estimated in the subsequent groups using the same pattern and starting value with the first group.

The fit of the specified model for both cultures and genders without equal constraints on construct means and variances was satisfactory, $\chi^2(158) = 644.32$, RMSEA = .07, NFI = .96, TLI = .97, and CFI = .97. When only the construct means were specified as invariant, the fit of the model was satisfactory but significantly worsened, $\chi^2(170) = 932.21$, RMSEA = .09, NFI = .95, TLI = .95, and CFI = .95; $\chi_{\text{diff}}^2(12) = 287.89$, $p < .01$. When only the covariance structure was specified as invariant without equality constraint on construct means, the fit of the model was again satisfactory, but the difference was statistically significant, $\chi^2(170) = 680.25$, RMSEA = .07, NFI = .96, TLI = .97, and CFI = .97; $\chi_{\text{diff}}^2(12) = 35.93$, $p < .01$.

As shown in the upper portion of Table 5, differences in construct means were found between cultures but not between genders. The construct means for external regulation, introjected regulation, and identified regulation were significantly higher for Koreans than for Americans, whereas the construct mean for integrated regulation was not significantly different by gender group ($ps > .27$). The construct variances for all four constructs, shown in the middle portion of Table 5, were significantly different for all three comparison groups from the reference group of Korean men. Correlations among four latent variables across the groups are reported in the bottom portion of Table 5. Correlation between introjected and integrated regulation was greater for the group of Korean men than for other groups. Correlations between identified and integrated regulation and between introjected and identified regulation of Korean men were greater than those of Korean women.

In sum, the measurement of autonomous emotional regulation was comparable across countries and genders, but the means were different between cultures and the variances were different among culture-gender groups. Correlations between subscales seemed greater for Korean men than for the other groups.

General Discussion

Three studies presented initial evidence for the reliability and validity of individual difference scores for people's motivation to withhold expression

of negative affect. The scale is intended for use in studies examining issues concerning the relation of negative affect to health.

The SRWNE as an Emotion Regulation Measure

The studies showed validity evidence for the SRWNE scale. For example, the SRWNE subscales were correlated with various emotion management scales and with various coping strategies in the expected directions. In particular, expressing emotions and repairing emotions related to the SRWNE subscales in a way that provided convergent validity while showing that different SRWNE subscales predicted different coping strategies.

Measurement Equivalence of the Autonomous Emotional Regulation Constructs

The structure of the SRWNE appears comparable across cultures and genders, although the construct means were different in the two cultures. Koreans scored higher than Americans did on controlled emotional regulation (i.e., external and introjected regulation) and on identified regulation. The neo-Confucian theory of emotion (see Hahn & Chon, 1994), which has been embedded in Koreans' psychological characteristics, emphasizes a balance between personal and social appropriateness in emotional regulation. "We-ness" (Choi & Choi, 1994), viewed as Koreans' indigenous psychology, reflects both the synthetic collectivism based on genuine concern for others over the self and an unconditional emotional bond with the collective based on pursuing social interest that is in harmony with personal fulfillment (Hahn & Chon, 1994). We-ness regarding emotional regulation in Korea seems to be perceived as pressure or external control, resulting in Koreans' being more controlled in emotional regulation than are Americans. However, Koreans also scored higher on identified regulation, suggesting that Koreans, relative to Americans, are also more characterized by believing it is personally important to regulate their negative emotions for the good of the collective group.

Future Research and Conclusions

Because chronic dysfunctional emotional regulation has been associated with physical illnesses such as arthritis, asthma, breast cancer, and coronary heart disease (see Pennebaker, 1995), it is necessary to examine styles of emotional self-regulation and physical health using a longitudinal format and diverse populations to ascertain whether more autonomous styles of regulation can buffer the adverse effects of stress on health. If it does, an interven-

tion to foster more autonomous emotional regulation may help ameliorate serious long-term physical risks.

All three studies were based on self-report data, which is a limitation; therefore, behavioral and physiological data should be included in future work.

In sum, reasonable reliability and validity were obtained concerning the SRWNE Questionnaire in three studies using college students from two cultures, indicating that the style of regulating the expression of negative emotions does seem to make a difference regarding coping and health.

Appendix
Self-Regulation of Withholding
Negative Emotions (SRWNE) Questionnaire

There are a variety of reasons **when I do not express my negative emotions to other people**. Please read over the questions and indicate how much you agree or disagree with each reason using the scale provided.

Strongly Disagree	Moderately Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Strongly Agree
1	2	3	4	5	6	7

The reason I do not express my negative emotions to other people is because:

- ER 1. I think others would be upset with me, if I expressed these feelings.
- JR 2. I would feel guilty if I let my bad feelings come out.
- TR 3. I find it personally satisfying to be able to feel my emotions without letting them be disruptive.
- JR 4. Expressing negative emotions would just hurt others, and a person shouldn't do that.
- DR 5. There are some situations where it is useful to express my feelings and others where it's not.
- JR 6. I would feel like a bad person if I expressed my bad feelings to my friends.
- ER 7. My parents and friends expect me to control myself.
- TR 8. I enjoy being aware of my feelings but I also find it satisfying to maintain a positive outward appearance.
- DR 9. It is important to me personally not to be hurtful to others.
- JR 10. I don't think I have the right to bother other people with my negative feelings.
- DR 11. As a caring person, I do not want to upset others with my negative feelings.
- ER 12. I'm afraid that people wouldn't like me if I express my feelings.
- DR 13. It is important to be aware of my negative feelings, but if I keep them to myself it is to maintain emotional stability.

There are a variety of reasons **why I sometimes act like everything is all right, even though I am upset**. Please read over the questions and indicate how much you agree or disagree with each reason using the scale provided.

Strongly Disagree	Moderately Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Strongly Agree
1	2	3	4	5	6	7

Sometimes when I am upset, I act like everything is all right, because:

- JR 14. I'd be ashamed of myself if I let my bad feelings come out.
 DR 15. The important thing is to understand my own upset, but it may not be useful to tell others about it.
 ER 16. I think it could ruin my relationships if I am always talking about what bothers me.
 DR 17. It is important to me not to burden others with my problems.
 TR 18. It is gratifying to be able to keep my upset from interfering with my goals.
 ER 19. I want others to think I'm mature.
 TR 20. It is an interesting challenge to remain calm and not always be getting upset.
 JR 21. I would be embarrassed if I let others see what was bothering me.
 DR 22. I feel that it is mature to maintain a positive attitude.
 TR 23. It is fulfilling to be able to achieve my goals even when I am upset.
 JR 24. I believe people should keep their upset to themselves.
 ER 25. I'm afraid people won't like me if I let on what is wrong.
 DR 26. I choose to keep my bad feelings to myself so I can accomplish important projects.
 ER 27. I think I have to follow the social norms.
 JR 28. I want others to think I'm a good person.

ER = external regulation; JR = introjected regulation; DR = identified regulation; TR = integrated regulation.

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