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Developing a Self-Regulation Scale for Negative Emotions in the Workplace (SRS-NEW): Exploring the Psychological Onset of New-Type Depression

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Abstract

Introduction: New-type depression (NTD), identified in the 2000s, is characterized by blaming others and not being motivated to work, develops at a young age, and is difficult to treat with antidepressant medications. The onset of NTD is related to the regulation of negative emotions in the workplace. However, as there is no scale to measure this regulatory behavior, this study aimed to develop the Self-Regulation Scale for Negative Emotions in the Workplace (SRS-NEW). **Methods:** The SRS-NEW, consisting of 38 items, was developed and administered via an Internet survey of 400 Japanese employees working in companies with at least 300 employees. Moreover, scales measuring coping in the workplace and the psychological features of NTD were also administered to test the validity of the SNS-NEW. **Results:** Factor analysis of the scale was performed, and six theoretically postulated factors were identified. Correlations between the six factors of the SRS-NEW and two other scales showed the validity of the SRS-NEW. **Discussion:** The results suggest that self-regulation to negative emotions in the workplace is related to the development of NTD. **Conclusions:** This study developed the SRS-NEW and identified six key factors. We expect that research using the SRS-NEW will further reveal the psychological mechanisms underlying the role of emotion regulation in NTD, which in turn will have clinical implications for discussing the development of prevention and intervention programs for NTD.

Keywords

Depression, Office Workers, Measurement, Self-Regulation, Negative Emotions

1. Introduction

Psychiatrists have reported new types of depression that differ significantly from melancholic-type depression, a typical form of depression in Japan. These new types of depression include *Gendai-gata utsu-byo* (Matsunami & Yamashita, 1991), *Dysthymia-gata utsu-byo* (Tarumi, 2005), *Mizyuku-gata utsu-byo* (Abe, 2011), and modern depression (Kato et al., 2016). Although each type has unique characteristics, they share many common features; therefore, they are collectively referred to as *Shin-gata utsu* in Japan. A previous study (e.g., Sakamoto et al., 2021) showed that these types comprise "new-type depression (NTD)," as opposed to traditional type depression (TTD), which is depression with melancholic features according to the Diagnostic and Statistical Manual of Mental Disorders, fourth edition (American Psychiatric Association, 2013). NTD has been reported in other countries, including Australia, India, South Korea, and the United States (Kato et al., 2011). Although its prevalence lacks clarity, NTD is more widespread than TTD and is particularly common among young office workers (Saito, 2011), as summarized in **Table 1**.

Although NTD is a concept raised by psychiatrists, contributions from psychology are expected for interventions and prevention, partly because antidepressants have shown limited efficacy for NTD, unlike TTD (Saito, 2011). In other words, pharmacotherapy is less likely to be effective in treating NTD because several psychosocial factors are involved in its onset (e.g., Tarumi, 2005). Psychological approaches to NTD include Nakano (2016) and Sakabe and Yamazaki (2013); however, the present study approaches it from the perspective of Interpersonal Sensitivity/Privileged Self (Yamakawa et al., 2015), which has produced several empirical studies.

Two psychological characteristics of NTD, that is, interpersonal sensitivity (IS) and privileged self (PS), have been identified as psychological factors related to the onset of NTD (Yamakawa et al., 2015). IS refers to the tendency to be excessively worried about others' negative evaluations and to react excessively (i.e., overreact) to these evaluations. IS comprises three subordinate factors: evaluation apprehension, overreaction to negative feedback, and avoidance. PS refers to the tendency to pursue pleasure and satisfaction for oneself at the expense of maintaining harmony with others. PS also comprises three subordinate factors: sense of victimization, self-righteousness, and dependence on results. IS and PS were coined based on the descriptions of NTD by psychiatrists to explain its onset from a psychological perspective, which has been reported to occur in company employees (Muranaka et al., 2015). However, as stated later, the association between

Table 1. Differences between melancholic depression and new-type depression in Japan.

	Melancholic depression (Traditional type depression)	New-type depression (NTD)
Ages	Mainly in middle age	Mainly in 20s and 30s
Characters	Attachment to rules	Attachment to self without roles
	Love for order, models	Negative feelings toward order or model
	Sympathetic, honest, obsessive	Vague sense of almighty
	Hard worker	Not a hard worker
Consciousness or awareness of being ill	Little recognition of the disease	Emphasis on being ill
Symptoms	Agitation or retardation	Fatigue and not feel good enough
	Exhaustion and guilt	Avoidance and blame others
	Well-prepared suicide	Impulsive suicidal action
Temporal changes in depressive symptoms	Depression continues on weekends and holidays	Energetic on weekends and holidays
Therapeutic relationship	Resist to diagnosis of depression	Cooperate with diagnosis of depression
	When recovered, learn from experience of depression	Tend to check depressive symptoms
		Hard to depart from diagnosis (like to stay in depression)
Drug response	Usually good	Partial response
Prognosis	Good response to rest and antidepressants	Become chronically ill only with rest and antidepressants

Note. Cited and adapted from Kato et al. (2011), Muranaka et al. (2019), and Tarumi (2005).

high IS and PS and interpersonal maladjustment is not limited to office workers. For example, people with high IS may feel depressed and anxious because they are concerned about negative evaluations from others. People with high PS may become isolated from others, as they seek their own pleasure without regard for relationships with others.

Previous studies have shown that IS and PS are associated with depression in both office workers and undergraduates. For example, in longitudinal studies, IS and PS at baseline increased depression at follow-up, after controlling for baseline depression mediated by interpersonal stressors at follow-up (office workers; Muranaka et al., 2023; undergraduates; Muranaka et al., 2019). Furthermore, in an undergraduate sample, Fujiwara et al. (2024) demonstrated that PS was related to an increase in subsequent experiences of negative events after controlling for negative events experienced at baseline and that PS was associated with an increase in subsequent depressive symptoms via experiences of negative interpersonal dependent events. In addition, some studies showed that IS and PS are associated with NTD-like characteristics in company employees and undergraduates (office workers; Sakamoto & Yamakawa, 2022; undergraduates; Sakamoto et al., 2022). For example, in an office worker sample, Sakamoto and Yamakawa (2022) showed

that the differences between distress during working hours and distress outside of working hours were greater when IS and PS were higher. Specifically, the difference was greatest when both IS and PS were high. Although evidence is not yet complete, the results suggest that high IS and PS negatively affect interpersonal adjustment in both office workers and college students.[3] However, since the nature of others with whom college students and company employees interact in daily life is different, the present study focused on company employees. Based on the psychological model (Sakamoto & Yamakawa, 2020) that explains the onset of NTD in the workplace, we developed a scale to measure self-regulation, which is mentioned in the model but for which no measurement tool has been developed. Sakamoto and Yamakawa (2020: p. 123) assumed that NTD and TTD are the result of dysfunction in the adjustment process of healthy people to their environment due to predisposing and environmental factors. The next section discusses the work environment related to the onset of NTD.

To the best of our knowledge, no empirical studies have been conducted on the work environment involved in the occurrence of NTD; however, media reports indicate that it occurs among employees of large companies and public officials (e.g., "Patients' Are All Office Workers", 2012). In the magazine article, a psychiatrist explained the reason: "The bigger the company or the public employee, i.e., the better the system of recuperation, the more likely there is to be NTD. For example, if you take a leave of absence, you get 100% of your salary for a few months. For several years after that, about 80% of the salary is paid in some form. In many cases, after a certain period of time after returning to work, the leave track record is cleared once and the employee can take another long leave of absence, so the reality is that the employee can receive a salary for almost no work." Thus, in a company with a well-developed sick care system, an employee suffering from depression can recover without worrying about income while on leave, as long as the employee submits a medical certificate for depression to the company and is recognized as sick. Thus, a company that has the financial resources to implement such an extensive medical treatment system (i.e., a "large company") can be considered an environment that promotes the onset of NTD.

Indeed, NTD is more likely to be observed in a larger number of employees. Kurabayashi et al. (2015) examined the percentage of Human Resource Management personnel in companies with 300 or more employees who had experienced confusion in dealing with NTD-like conditions and found that there was a relationship between the percentage and the total number of employees (four levels: 300 - 499, 500 - 999, 1000 - 4999, and greater than 5000 employees). As a result, the larger the number of employees, the greater the number of cases that had characteristics of NTD, such as "another leave of absence immediately after returning to work," "enthusiasm for hobbies and fun instead of focusing on rest and recuperation during leave," and "not knowing whether the employee was sick or skipping work." However, the rank correlation coefficients between the number of employees and the percentage of personnel experiencing confusion were low at

0.214, 0.157, and 0.092. Kurabayashi et al. (2015: p. 78) explained that the reason for limiting the number of employees to 300 or more was that they expected companies with fewer than 300 employees to have fewer mental health problems.

There are two major ways to define a "large company" in terms of the number of employees. One is to define a "large company" as one with more than 1000 employees, as shown in the Basic Survey on Wage Structure published by the Ministry of Health, Labor and Welfare. The other is to use the Small and Medium-sized Enterprise Basic Act's definition of small and medium-sized enterprises (SMEs) and define "large enterprises" as those larger than SMEs. Although details are omitted, the definition of SMEs is based on both capitalization and the number of full-time employees for each industry, with "less than 300 employees" being the largest criterion in the definition of SMEs. Therefore, an organization with more than 300 employees can be considered a "large company." In this study, we adopted the latter as the definition of large companies, referring to Kurabayashi et al. (2015).

In the next section, to create a scale to measure self-regulation related to the onset of depression, we described the assumed self-regulation based on Sakamoto and Yamakawa (2020) (**Figure 1**) and theoretically predicted its relationship with IS and PS.

As stated above, IS and PS are useful concepts for explaining the psychological onset of depression, including TTD and NTD. However, one missing element is self-regulation. Referring to self-awareness theories (Carver & Scheier, 1981; Duval & Wicklund, 1972) and theoretical models explaining the onset of depression from self-focus (Pyszczynski & Greenberg, 1987; Sakamoto, 2000), Sakamoto and Yamakawa (2020) proposed a model to explain the onset of NTD/TTD by incorporating IS and PS. This model, the "Self-Regulation Model for Negative

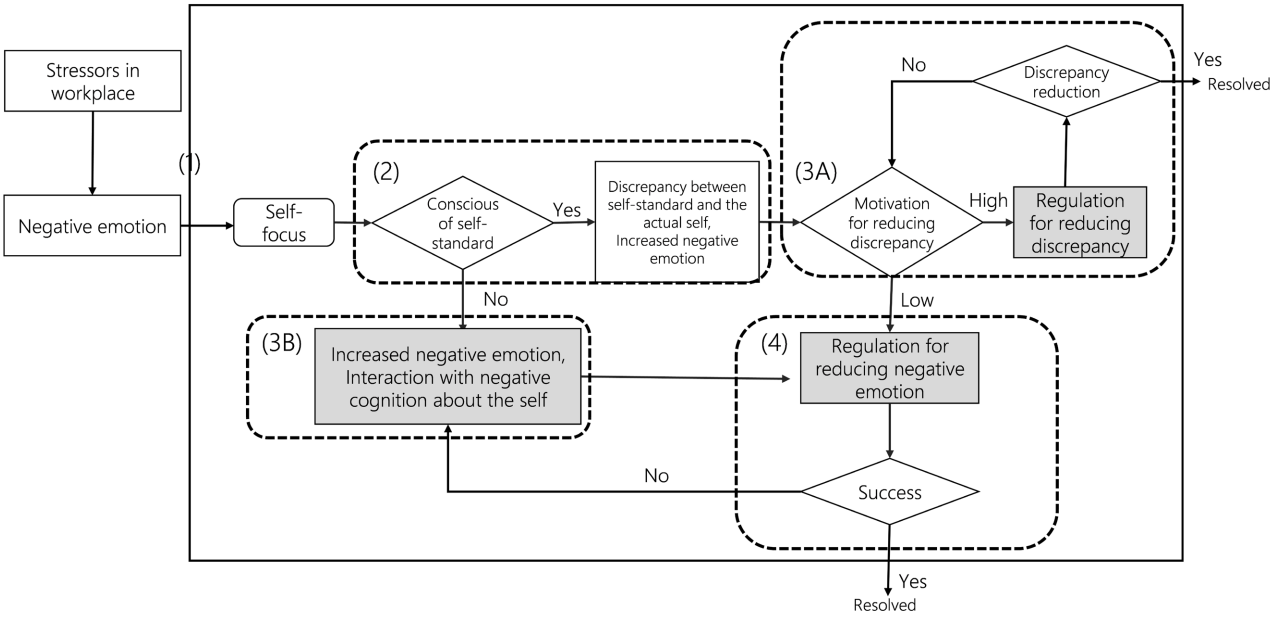

Figure 1. Self-regulation process model for negative emotions in workplace.

Emotions in the Workplace," describes how individuals self-regulate their negative emotions triggered by interpersonal stressors in the workplace. Self-regulation may vary depending on the IS and PS levels. According to this model, TTD is more likely to occur when IS is high and PS is low, while NTD is more likely to occur when both IS and PS are high (Sakamoto & Yamakawa, 2020: p. 124).

This study proposed a modified model of Sakamoto and Yamakawa (2020). Two modifications were made. First, the arrow on the right side of the figure showing the self-regulation model (in (3A) in this paper) that starts with "Discrepancy reduction" was passed through "Motivation for reducing discrepancy" in (3A), instead of through "Conscious of self-standard" in (2). The reason for this is that Carver and Scheier (1981), whom Sakamoto and Yamakawa (2020) referred to when formulating their model, did not set up an arrow that feeds back from "Discrepancy reduction" to "Conscious of self-standard," and no positive reason or evidence can be found to assume this arrow. Second, in Sakamoto and Yamakawa (2020), the numbers indicating the squares enclosed by dotted lines are (2), (3), (4), and (5), whereas in this study, they are (2), (3A), (3B), and (4). In this study, as in Sakamoto and Yamakawa's (2020) study, it was assumed that both processes can run in parallel when the appropriateness criterion is conscious and when it is not. However, to clarify this assumption, (3A) and (3 B) were used instead of (3) and (4), which imply an order. As shown in **Figure 1**, the modified model illustrates the five stages of the self-regulation process caused by negative emotions in the workplace:

1. Experiencing workplace stressors that lead to self-focus. Workplace stressors cause negative emotions, which increases self-focus (Salovey, 1992; Wood et al., 1990).

2. Awareness of self-standards. Increased attention to the self can lead to awareness of self-standards (Carver & Scheier, 1981). In this context, self-standard refers to one's standards as an employee or office worker because attention or self-focus is directed toward the self in one's workplace. Any discrepancy between self-standards and the actual self is recognized, which increases negative emotions (Carver & Scheier, 1981; Duval & Wicklund, 1972).

3A. Self-regulatory processes may be activated to resolve the discrepancy between self-standards and the actual self. Various strategies can be adopted to self-regulate unpleasant situations. If negative emotions are regulated successfully and the discrepancy is resolved, the loop of self-regulation ends and negative self-evaluation and emotions disappear. However, if one fails repeatedly, the expectation of reducing the discrepancy may become lower, and the motivation to resolve the discrepancy would decrease. Subsequently, to diminish negative emotions, one may proceed to (4).

3B. When self-standards are not recognized, self-attention processes information about the self (Carver & Scheier, 1981; Sakamoto, 2000). Negative emotions are amplified (Duval et al., 1972) and information about the activated negative self is processed (Bower, 1981), eliciting even stronger negative emotions (Sakamoto,

2000). As this state is unpleasant, emotion-focused coping is used to proceed to (4).

4. Activation of self-regulation of negative emotions or emotion-focused coping. Carver and Scheier (1981) and Sakamoto (2000) described a strategy for ending self-regulation initiated by self-attention, which can be achieved by distracting attention from oneself. For example, leaving a situation that forces self-attention (Duval et al., 1972) or distracting self-attention through exercise (Nolen-Hoeksema, 1991; Stathopoulou et al., 2006) may reduce negative emotions. If this strategy is successful, then self-attention decreases, thereby reducing negative emotions. However, if unsuccessful, negative emotions become stronger, an individual becomes more conscious of negative information about themselves, returning to the interaction phase with negative emotions and cognitions depicted in (3B).

In summary, individuals experience negative emotions owing to interpersonal stressors that lead to self-attention. Subsequently, various self-regulations to reduce negative emotions occur, resulting in recovery from negative emotions or, conversely, an increase in negative emotions and delayed recovery. Self-regulation of negative emotions varies depending on IS and PS. In the next section, we discuss this possible link between IS and PS and self-regulation.

This section describes the relationship between IS/PS and self-regulation in the three stages (i.e., 3A, 3B, and 4).

Stage 3A and IS. IS should be associated with self-regulation independent of PS levels. Given the high correlation between IS and public self-consciousness (cf. Sakamoto et al., 2017), a higher IS would lead to the perception of paying more attention to the public self, that is, the self observed by others. Being observed by others around them at work (i.e., peers and superiors), attention would be focused on the self as a company employee, and the discrepancy between the standards of appropriateness as a company employee and the actual self would be perceived. When attempting to reduce the perceived discrepancy between the self-standard (e.g., being perceived as a competent colleague) and the actual self in (3A), people with high IS may try to enhance evaluation from others (e.g., I will work hard to meet my company's interests and expectations). If such self-regulation does not come to fruition soon, the expectation of discrepancy reduction diminishes. However, according to the expectation-value theory of motivation (Atkinson, 1957), motivation to achieve a goal is maintained if the value of achieving the goal is increased. Thus, to eliminate the discrepancy, they will seek to increase the value of discrepancy reduction, that is, the value of their workplace and the value of working there (e.g., I think the time I have spent at my workplace is rewarding for my life). Thus, self-regulation, or valuing work, is thought to occur.

Stage 3A and PS. PS should also be associated with self-regulation independent of IS levels. When PS is high, greater attention is focused on the self. Because PS is negatively correlated with taking the perspective of others (cf. Suzuki et al., 2023), people with high PS are less likely to pay attention to the public self. Instead, when they turn their attention to the self, they may think about themselves from their own perspective (Froming et al., 1982). Because PS contains a component of

self-righteousness, they think about themselves in terms of their own criteria and think highly of themselves. However, in reality, others evaluate them less highly, and people with high PS are aware of the discrepancy between high self-evaluation and low evaluation by others. To reduce this discrepancy, they take actions that (i) directly demonstrate their competence, (ii) assert that their competence is not correctly evaluated by others, or (iii) assert that there are factors that prevent them from demonstrating their competence (Sakamoto & Yamakawa, 2020: p. 128).

However, many Japanese office workers recognize that they work in a culture in which group work and harmony are coordinated (Hechter & Kanazawa, 1993); thus, it may be rare for them to actively engage in the above three behaviors that could disrupt harmony in the workplace. To detect self-regulation by means of a questionnaire, it is more appropriate to ask about the frequency of recognition or intention, that is, for (i), the perception of self-competence behind behaviors indicating their competence (feeling self-trust, e.g., I feel that I can get through anything if I do it my own way), and for (ii), the perception of their competence not properly evaluated (demanding to be more respected, e.g., I have felt that my workplace should respect what I had to say more). As for (iii), although there are various reasons for not being able to demonstrate competence, depression or physical and mental distress may be used as an excuse often found in patients with NTD (Saito, 2011). Thus, Complaining of Not Feeling Well (e.g., I could not focus on my work because of my poor physical and mental conditions) is adopted as an indicator of self-regulation.

Stage 3B and IS. According to Sakamoto and Yamakawa (2020), when one is unaware of self-standards, one experiences negative emotions due to self-focus and is thus more likely to be aware of negative self-information. This can be described as a state of rumination (Nolen-Hoeksema, 1991) or self-preoccupation (Sakamoto, 2000).

When IS is high, individuals are considered to have low self-esteem and a negative self-concept because they are overly concerned about what others think of them. These individuals are more likely to process the negative self-information of which they are aware in (3B) because of their self-verification motive (Swann, 2012). In other words, they are thought to remain in a state of worry and rumination, which confirms their negative self-concepts.

It is not possible to theoretically describe the relationship between PS and positive/negative self-concepts. Therefore, no special hypotheses can be formulated.

Stage 4 and IS. As stated above, people with high IS are thought to remain in (3B). However, when the appropriateness criterion becomes conscious (3A), individuals with high IS may experience negative emotions. Given that IS includes avoidance, avoidance-type emotion-focused behavioral coping (Takamoto & Matsui, 2012) can be considered self-regulation. Specifically, detaching from work (attempting to detach oneself physically or psychologically from the workplace) may occur. However, as people with high IS are thought to stay in (3B) when they are unaware of self-standards, the number of cases in which a person with high IS

tries to lower negative affect in (4) will be limited. Thus, the link between IS and detaching from work could not be clearly observed.

Stage 4 and PS. If PS is high, individuals will try self-regulation in (3A) and (3B) and may experience strong negative emotions; therefore, they will actively implement regulations aimed at reducing negative emotions. Consequently, they directly express their emotions (Uchida & Yamasaki, 2008) to a third party not involved in the workplace, typically a social networking service (SNS) (Expressing Emotions via SNS). They will also attempt to physically and psychologically detach themselves from the workplace, a place that makes them aware of the self as an office worker (detaching from work) (e.g., I wish that I do not have to get closer to my workplace so I do not feel stressed). Here, negative emotions are stronger if they admit that staying away from the workplace is due to their inability to do so. Therefore, they may refer to their illness (complaining about not feeling well) as an often-experienced and uncontrollable cause.

Once again, the hypothesized relationship between self-regulation and IS/PS is presented. However, given that IS and PS are significantly correlated (e.g., Muranaka et al., 2021), the expected correlation between IS (PS) and self-regulation is described after statistically controlling for PS (IS).

Valuing work (appeared in 3A among workers with high IS). To resolve the discrepancy between their standards of appropriateness as company employees and their actual self, those with high IS in (3A) will make efforts to gain recognition from people at work. They will also try to increase the value of the workplace to maintain their motivation to resolve the discrepancy even if their attempts to do so fail. Therefore, valuing work is significantly correlated with IS.

Worrying and ruminating (appeared in 3B among workers with high IS). When the criterion of the self is not conscious, negative self-information is present. Individuals with high IS are likely to have a negative self-concept and more likely to remain in a state of rumination (Nolen-Hoeksema, 1991) or self-preoccupation (Sakamoto, 2000), where negative self-information is made conscious due to self-verification. Thus, worrying and ruminating are significantly correlated with IS.

Feeling Self-Trust, Demanding to be More Respected, and Complaining of Not Feeling Well (appeared in 3A among workers with high PS). To resolve the discrepancy between their evaluation that they meet the standard of adequacy and low evaluation by others, individuals with high PS in (3A) are convinced of their competence or want more respect for themselves because of the unfairly low evaluation by others. They also believe that they cannot demonstrate competence because of their illness. Therefore, feeling self-trust, demanding to be more respected, and complaining of not feeling well are significantly correlated with PS.

Detaching from Work, Complaining of Not Feeling Well, and Expressing Emotions through SNS (appeared in 4 among workers with high PS). In order to avoid a sense of self as an employee, people with high PS will detach themselves from their workplace. As they fear that workplace detachment is attributed to their

incompetence, they may appeal to their illness as an excuse. They may also express their emotions via SNS to reduce negative emotions. Thus, detaching from work, complaining of not feeling well, and expressing emotions through SNS are significantly correlated with PS.

Hypotheses regarding the relationship between self-regulation and (IS + PS). IS and PS should have a combined effect on self-regulation. The combined effect is likely to occur with the three types of self-regulation involved in (4), which focus on reducing negative emotions: *detaching from work, complaining about not feeling well, and expressing emotions through SNS*. It has been argued that these three types of self-regulation are more likely to occur when PS is high, but they are also likely to occur when IS is high for the following reasons.

Of the three types of self-regulation described above, we begin with *detaching from work*. In Stage (4), people with high both IS and PS may experience more negative emotions than others, as they may face two types of discrepancies in (3A), which are difficult to diminish: one is the discrepancy between the standard of appropriateness as an employee and the actual self (in case of high IS), and the other is the discrepancy between high self-evaluation and low evaluation by others (in case of high PS). Originally, since the recognition of the discrepancy is the result of self-focusing in their workplace, they may be motivated to avoid their workplace. Thus, self-regulation of detaching from work is significantly correlated with the total IS + PS scores.

Next, *complaining of not feeling well* and *expressing emotions through SNS* are discussed. When IS is high, people are concerned about what others think of them; thus, they are motivated to reduce criticism from others when regulating negative emotions. Here, those with high IS may think that claiming that they are unwell is an excuse for not being able to fulfill their obligations as company employees (cf. Yamakawa & Sakamoto, 2017) and they can mitigate criticism from others. Those with high IS may also believe that emotional displays directed toward people unrelated to the workplace (i.e., SNS) are less likely to be criticized by colleagues in the workplace. Thus, self-regulation of complaining about not feeling well and expressing emotions through SNS is significantly correlated with the total IS + PS score.

So far, hypotheses regarding the relationship between IS and PS were proposed to test the validity of the self-regulation scale. Because self-regulation overlaps with coping behavior toward stressors, the present study also tested the validity of the SRS-NEW in relation to coping using the Workplace Coping Scale (WCS: Shoji & Shoji, 1992). The WCS consists of three subscales: positive action and cognition (i.e., controlling and positive coping behaviors and a positive strategy to make positive sense of the stressor and re-evaluate it), avoidant action and cognition (i.e., avoidant and passive coping behaviors and a strategy to deny the stressor), and symptom management (i.e., coping to improve physical and mental discomfort resulting from the stress response). The authors hypothesized that positive action and cognition would be positively correlated with feeling self-trust

and valuing work, whereas detaching from work and worrying and ruminating would be positively correlated with avoidant action and cognition.

This study aimed to develop and validate a scale to measure self-regulation of negative emotions in the workplace (SRS-NEW) that would allow researchers to primarily measure the three shaded boxes shown in Figure 1. To examine the validity of the self-regulation scale, correlations between self-regulation and IS, PS, and their total scores were examined to test the hypotheses described above. However, because significant correlations between IS and PS were reported (e.g., Muranaka et al., 2021), we also examined partial correlations.

2. Materials and Methods

2.1. Participants

The sample consisted of 400 full-time non-managerial employees working in a company with at least 300 employees (200 men and 200 women aged 23 - 59 years, M_{age} = 41.77, SD = 9.84). The participants were recruited through an Internet research firm, where they registered as monitors. Participant characteristics are presented in Table 2. Because the scale developed in this study was based on a model explaining the occurrence of (NTD/TTD) depression, it was intended that NTD/TTD would be more likely to be present in the sample. As previously mentioned, NTD, which is more important for this study, is more likely to occur in large companies. Therefore, to embody "full-time employees working in large companies," the authors set the following three sampling conditions: "working in a company with more than 300 employees," "full-time regular employees," and

Table 2. Information on the attributes of the sample of this study.

	alternative	*n*	%
Gender	Male	200	50.0
	Female	200	50.0
Age	23 - 29	52	13.0
	30 - 39	118	29.5
	40 - 49	113	28.3
	50 - 59	117	29.3
Education	University	340	85.0
	Graduate school	60	15.0
N of employee	$N > 1000$	279	69.8
	$300 \leq N < 1000$	121	30.3
Marital status	Unmarried	207	51.8
	Married (inc. divorce, widowed, and common-law marriage)	193	48.3
Children	Having a child/children	132	33.0
	No child	268	67.0
Total		400	100.0

"non-managerial employees." It should be noted that the sample in this study was intentionally biased and was not a representative sample of Japanese company employees.

2.2. Measurements

2.2.1. Self-Regulation Scale for Negative Emotions in the Workplace (SRS-NEW)

Items of the SRS-NEW were primarily developed by three psychologists (SS, MM, and YI) who developed the concepts of IS and PS. Seven theory-based self-regulation aspects and definitions were considered when generating the items. A total of 38 items were created (**Table 3**). As this scale was designed to measure self-regulation for negative emotions caused by daily workplace stressors, the SRS-NEW used "the past month" as the timeframe. The instruction read as follows: "We would like to ask you about how you have been feeling and thinking during the past month. Please indicate the extent to which you have experienced each of the following during the past month." The participants responded on a five-point scale, including the response options of "not at all/never," "a little," "sometimes," "usually," and "always."

2.2.2. Interpersonal Sensitivity/Self-Privileged Scale, Version 2 (IPS-2)

IS and PS were measured using IPS-2 (Muranaka et al., 2021), which consists of 11 items for IS and PS each. Responses were provided on a five-point scale ranging from 1 (very unlike me) to 5 (very like me). Examples of an IS and PS item were "I worry that I may be criticized for my words and actions" and "I get in a bad mood if things do not go my way," respectively.

2.2.3. Workplace Coping Scale (WCS)

The WCS (Shoji & Shoji, 1992) was used with some modifications to identify coping in the workplace. Unlike the original WCS, we did not ask the participants to identify a particular stressor. Rather, we asked, "How do you deal with problems in the workplace? Below is a list of the 41 ways to cope with these problems: Please indicate the degree to which you usually use each of these coping strategies by choosing a response from "1: I don't use them" to "4: I use them quite a bit." Sample items for positive action and cognition, avoidant action and cognition, and symptom management are "Try to see the problem as a chance of a lifetime," "Give up to solve it," and "Take rest," respectively.

2.3. Ethical Considerations

The participants agreed to the terms and conditions set forth by the company regarding the handling of response data and personal information when registering with the survey company. At the commencement of the survey, an overview of the research and data handling methods was presented, and it was explained that only those who agreed to these methods would respond. Approval was obtained from the Research Ethics Committee of the first author's institution (approval number 30 - 68).

Table 3. Items of self-regulation scale for negative emotions in workplace, results of factor analysis, and inter-correlations among its subscale scores.

	Factors and items	F1	F2	F3	F4	F5	F6	h^2
	F1: Detaching from Work							
26	In my current job, I am not doing the work I really wanted to do in the first place.	**0.97**	−0.01	0.07	0.02	−0.07	−0.22	0.76
27	I do not feel like the work I'm currently doing is something I'm supposed to do.	**0.85**	−0.07	0.13	0.03	−0.06	−0.07	0.70
16	I've felt that my current workplace does not allow me to show my potential.	**0.63**	−0.02	0.04	0.28	0.03	−0.08	0.65
31	I have avoided work because the job and workplace are boring.	**0.60**	−0.21	−0.05	−0.03	0.18	0.16	0.63
39	I had not wanted to do anything I was not good at even though it was necessary.	**0.57**	0.11	−0.06	−0.08	0.14	0.17	0.49
11	I've felt that the work would be meaningless if there were no benefits for myself.	**0.53**	0.06	−0.01	0.20	0.07	−0.03	0.47
5	I've wished that I don't have to get closer to my workplace so I don't feel stressed.	**0.44**	−0.16	−0.08	−0.04	0.34	0.13	0.53
15	I had not cared about how I should work as a member of my company.	**0.41**	0.05	−0.09	−0.03	0.16	0.24	0.40
23	I have had zero interest in how others would evaluate my performance at my workplace.	0.41	0.01	0.19	−0.14	−0.09	0.03	0.15
	F2: Valuing Work							
29	There are people in my workplace who I respect as persons.	0.11	**0.97**	−0.16	−0.14	−0.06	0.06	0.87
30	There are people in my workplace who I respect as colleagues.	0.22	**0.93**	−0.13	−0.17	−0.01	−0.02	0.79
32	I have considered the time I have spent at my workplace rewarding for my life.	−0.23	**0.63**	0.16	0.05	0.05	0.09	0.59
28	I've felt that the work I've been assigned to do is important for me.	−0.28	**0.59**	0.12	0.09	0.16	0.07	0.56
25	I've thought that if I worked hard, I would be appreciated by my colleagues.	0.05	**0.50**	0.24	−0.01	0.16	−0.09	0.46
13	I have eagerly worked to meet my company's interests and expectations.	−0.15	**0.44**	0.22	0.22	0.05	−0.04	0.40
24	I wanted my performance to be recognized by my colleagues at my workplace.	0.04	**0.43**	0.07	0.25	0.28	−0.11	0.45
33	I have complained to friends and family about my work.	0.02	0.26	0.07	0.20	0.09	0.15	0.26
	F3: Feeling Self-Trust							
3	I've felt that I could get through anything, if I do it my own way.	0.07	−0.07	**0.88**	−0.15	−0.02	0.02	0.65
2	Regardless of what others would have thought of me, I've believed that I would succeed in the future.	−0.01	−0.07	**0.76**	−0.06	0.00	0.18	0.58
1	I've thought I had something to be proud of, whether others understood it or not.	−0.05	0.08	**0.65**	0.04	0.03	0.01	0.51
14	I've felt I'm competent, whether or not the others would agree with it.	0.14	0.15	**0.61**	0.13	−0.15	0.08	0.57
22	I've felt things are okay because my private life is going well, regardless of whatever things are going on in my workplace.	0.20	0.05	**0.44**	−0.02	−0.12	0.06	0.24
6	I've wanted to be the center of attention.	0.00	0.19	0.38	0.02	0.18	0.16	0.41
4	I've worked and studied diligently so that I can contribute to my company.	−0.21	0.30	0.35	0.17	0.10	−0.15	0.40

Continued

	F4: Demanding to be More Respected							
19	I've felt that my workplace should respect what I had to say more.	−0.05	0.10	−0.06	**0.93**	−0.04	0.10	0.84
20	I've felt that my workplace should care more about how I felt.	−0.01	0.08	−0.11	**0.91**	0.01	0.02	0.79
18	I've felt that my current workplace underestimates my value, unfairly.	0.22	−0.01	0.05	**0.68**	−0.08	−0.03	0.63
17	I've felt that the workplace has an obligation to support me to the best of my ability.	0.01	0.23	0.21	**0.50**	−0.05	0.06	0.48
	F5: Worrying and Ruminating							
7	I had been repeatedly thinking about what I have said or done.	0.00	0.14	0.14	−0.16	**0.82**	−0.18	0.60
8	I could hardly stop thinking about myself.	0.12	0.06	0.12	−0.09	**0.81**	−0.06	0.71
9	I've had a hard time forgetting a bad experience at work.	0.24	−0.02	−0.10	0.03	**0.64**	0.03	0.64
21	I have been worried if I have caused any problems to my workplace.	0.12	0.20	−0.21	−0.13	**0.45**	0.19	0.35
12	I've thought about how I should work as a member of my company.	0.14	0.30	0.08	0.16	0.33	−0.13	0.37
	F6: Attributing to Illness and Using Social Media							
38	I've thought, due to my current conditions, I might be sick.	0.13	−0.03	0.02	0.04	0.03	**0.68**	0.62
36	I was hoping that my assignments to be reduced because of my mental and physical conditions (or in fact my workload has been reduced).	0.09	−0.09	0.04	0.06	0.01	**0.68**	0.58
34	I have posted complaints about my work on the internet.	0.04	0.12	0.09	0.04	−0.25	**0.67**	0.46
37	I couldn't focus on my work because of my poor physical and mental conditions.	0.12	−0.01	−0.04	0.12	0.09	**0.64**	0.65
35	I have had posted something fun about my private life on social media, such as blog, X, and Facebook.	−0.07	0.13	0.24	−0.08	−0.06	**0.50**	0.33
	Inter-factor correlations	F1	F2	F3	F4	F5	F6	
	F1: Detaching from Work							
	F2: Valuing Work	−0.08						
	F3: Feeling Self-Trust	0.16	0.40					
	F4: Demanding to be More Respected	0.56	0.20	0.39				
	F5: Worrying and Ruminating	0.53	0.27	0.19	0.39			
	F6: Attributing to Illness and Using Social Media	0.52	0.15	0.27	0.47	0.44		

Note: The item numbers and factor loadings employed were bolded. For correlations between subscale scores, the item means of the recruited items were calculated as each subscale score.

3. Results

3.1. Regarding Gender and Age Differences

We did not consider gender or age in the factor analysis for three reasons. First, there is no theory regarding the effects of gender and age. Second, gender and age were not quite related to the scale items. For example, when the Bonferroni method was used to test for gender differences for 38 items with a significance level of .05/38 = 0.0013, only two items (Items 24 and 33) reached the significance level. When the correlation between age and each item was examined, only one item (Item 33) had a correlation exceeding the absolute value of 0.20. Third, in

general, a larger number of samples is needed to obtain more stable factor analysis results.

3.2. Factor Analysis of the SRS-NEW

Factor analysis was performed for all the 38 items of the SRS-NEW. After examining the mean and standard deviation of each item, items with floor and ceiling effects were identified using the mean +/− 1*SD* criteria. Although none of the items showed a ceiling effect, 11 showed floor effects. However, as this scale was designed to assess behaviors that occurred in the previous month, some behaviors were less likely to occur. Therefore, we performed factor analysis by treating the items as ordinal scales rather than excluding items that showed floor effects. Spearman's rank correlation matrix was then calculated, and factor analysis was performed using this coefficient matrix as data. The maximum likelihood (ML) method with an independent cluster rotation was used for estimation. In the factor analysis of ordinal scales, when a normal distribution can be assumed for the population, a polychoric correlation matrix is calculated and factor analysis is performed on this correlation matrix. However, in this study, because a normal distribution could not be assumed for the population of scale items, factor analysis of Spearman's rank correlation coefficient matrix was performed, as in Kliemann et al. (2022). Matrix parallel analysis recommended a seven-factor structure, whereas the Minimum Average Partial Correlation (MAP) criterion recommended a six-factor structure. Specifically, the MAP values for factors 1 through 10 were as follows: 0.042, 0.019, 0.017, 0.016, 0.016, 0.013, 0.014, 0.014, 0.015, and 0.0160. Therefore, six factors were extracted, although seven types of self-regulation were assumed when creating the scale.

Items with commonality h^2 greater than .20, and factor loadings of 0.40 or greater, on a single factor were adopted. Consequently, five items were excluded, and 33 items were retained. The factors based on theory were named "detaching from work," "valuing work," "feeling self-trust," "demanding to be more respected," "worrying and ruminating," and "attributing to illness and using social media" based on the items for each factor. All factors exhibited high reliability coefficients (αs > 0.79). **Table 3** presents the results of this study.

3.3. Validation

The scores for the six subscales of the SRS-NEW and the subscales of the scale used in the validity study were calculated. Descriptive statistics are presented in **Table 4**. No substantial distributional skew was observed for any of the scores. Correlations between the six subscales of the SRS-NEW and the two subscales of the IPS-2 (IS and PS) and their total scores (IPS scores) were identified. Given that IS and PS were correlated, partial correlations were examined by controlling for the effects of each other. Correlation coefficients were interpreted as effect sizes, with $r > 0.20$ indicating a meaningful association (Yoshida, 1990: p. 220).

Table 4. Descriptive statistics.

	mean	*SD*	Min	Max	α
Detaching from Work (F1)	18.59	7.58	8	40	0.90 [0.88, 0.91]
Valuing Work (F2)	16.05	5.86	7	35	0.86 [0.84, 0.88]
Feeling Self-Trust (F3)	10.77	4.21	5	25	0.82 [0.79, 0.85]
Demanding to be More Respected (F4)	8.90	4.01	4	20	0.86 [0.84, 0.88]
Worrying and Ruminating (F5)	9.77	3.63	4	20	0.79 [0.75, 0.82]
Attributing to Illness and Using Social Media (F6)	8.24	3.77	5	25	0.81 [0.78, 0.84]
Interpersonal Sensitivity (IS)	33.42	8.44	11	55	0.90 [0.88, 0.91]
Privileged Self (PS)	29.39	7.23	11	55	0.85 [0.83, 0.88]
IS + PS	62.81	14.33	22	110	0.92 [0.91, 0.93]
Positive Action and Cognition	28.78	5.74	11	44	0.86 [0.84, 0.88]
Avoidant Action and Cognition	23.47	5.43	10	40	0.84 [0.82, 0.86]

Note. Min is equal to the number of items because all item scores have a lower limit of 1.

Table 5. Zero-order and partial correlations among scales.

	Patial correlation		Zero-order correlation						
	IS	PS	IS	PS	IP + PS	PAC	AAC	sex [a]	age
Detaching from Work (F1)	0.19	0.23	0.42	0.44	0.47	−0.09	0.31	−0.01	0.01
Valuing Work (F2)	0.01	0.04	0.04	0.06	0.06	0.44	0.14	0.09	−0.08
Feeling Self-Trust (F3)	−0.30	0.23	−0.20	0.03	−0.10	0.31	0.15	−0.02	−0.03
Demanding to be More Respected (F4)	−0.13	0.41	0.21	0.44	0.34	0.07	0.13	−0.04	0.06
Worrying and Ruminating (F5)	0.41	0.09	0.56	0.43	0.55	0.13	0.24	0.14	−0.14
Attributing to Illness and Using Social Media (F6)	0.02	0.27	0.26	0.37	0.33	−0.05	0.17	−0.02	−0.09

Note. Correlation between IS and PS was 0.67. Sex coded 0 for males and 1 for females. IS: Interpersonal Sensitivity, PS: Privileged Self, PAC: Positive Action and Cognition, AAC: Avoidant Action and Cognition; [a]Point biserial correlation coefficient.

As shown in Table 5, after controlling for the PS scores, IS was positively (r = 0.41, $p < 0.001$) correlated with worrying and ruminating, supporting the hypothesis. However, after controlling for the PS scores, IS was not correlated with valuing work (r = 0.01), which did not support the hypothesis. Regarding IS correlations, an additional result was found; after controlling for the PS scores, IS was negatively (r = -0.30, $p < 0.001$) correlated with feeling self-trust. After controlling for the IS scores, PS showed positive correlations with feeling self-trust, demanding to be more respected, detaching from work, and attributing to illness and using social media (r = 0.23, 0.41, 0.23, and 0.27, respectively; all $p < 0.001$), supporting the hypothesis. Moreover, the IPS scores showed positive correlations with detaching from work, and attributing to illness and using social media (r = 0.47, and 0.33, respectively; all ps < 0.001), as predicted. The IPS scores were also correlated with demanding to be more respected and worrying and ruminating (r

= 0.34, and 0.55, respectively; all ps < 0.001).

As shown in Table 5, positive action and cognition scores were positively correlated with feeling self-trust and valuing work (r = 0.31 and 0.44, respectively, ps < 0.001), whereas avoidant action and cognition scores were positively correlated with detaching from work and worrying and ruminating (r = 0.31 and 0.24, respectively, ps < 0.001), supporting the validity of the SRS-NEW. Sex and age were not significantly correlated with all the self-regulation subscale scores.

4. Discussion

This study aimed to develop the SRS-NEW and examine its reliability and validity. As described below in three parts: (1) results of factor analysis of the SRS-NEW, (2) results of correlation analysis between the IPS-2 and six factors of the SRS-NEW, and (3) results of correlation analysis between the WCS and the six factors of the SRS-NEW, the SRS-NEW, consisting of 33 items, was developed with confirmed reliability (i.e., internal consistency) and validity.

4.1. Validation

4.1.1. Results of factor analysis of the SRS-NEW

Based on Sakamoto and Yamakawa's (2020) description, seven types of self-regulation were proposed. In the factor analysis, although matrix parallel analysis recommended a seven-factor structure, the MAP criteria were adopted and six factors were extracted. Five of seven factors were extracted as predicted, while "complaining of not feeling well" and "expressing emotion through SNS" were extracted as one factor, that is, "attributing to illness and using social media." This suggests that those who reduce discrepancies by appealing to their physical and mental illness in (3A) are more likely to diminish negative emotions by appealing to their illness and expressing emotions through SNS in (4). This result is interesting, as this behavioral pattern appears similar to that found in patients with NTD (e.g., Mori, 2012). Thus, although there are some differences between the predictions of Sakamoto and Yamakawa (2020) and the results of the present study, the fact that most of the self-regulation originally hypothesized was found indicates the factorial validity of the SRS-NEW.

4.1.2. Results of Correlation Analysis between IPS-2 and Six Factors of SRS-NEW

Referring to Sakamoto and Yamakawa (2020), we predicted that valuing work and worrying and ruminating were more likely to occur when IS was high, and feeling self-trust, demanding to be more respected, detaching from work, complaining about not feeling well, and expressing emotion through SNS were more likely to occur when PS was high. The results of examining the correlations controlling for PS showed that IS was correlated with worrying and ruminating. In addition, the results of examining the correlations controlling for IS showed that PS was correlated with feeling self-trust, demanding to be more respected, detaching from work, and attributing to illness and using social media. Furthermore, the com-

bined effect of IS and PS was predicted to occur with detaching from work and attributing to illness and using social media, and data analysis showed that IS+PS total scores correlated with self-regulation, as predicted. These results indicate that the five subscales of self-regulation measured by the SRS-NEW, with the exception of valuing work, were consistent with the theoretical predictions and were validated.

4.1.3. Results of Correlation Analysis of the WCS with the Six Factors of the SRS-NEW

Because of the overlap between self-regulation and coping behavior toward stressors, this study also tested the validity of the SRS-NEW by correlating it with the WCS (Shoji & Shoji, 1992). It was predicted that positive action and cognition would correlate with feeling self-trust and valuing work and that avoidant action and cognition would correlate with detaching from work and worrying and ruminating. This hypothesis was supported. Thus, examination using the WCS confirmed the validity of valuing work.

4.2. Generalizability of the Findings of This Study: Effects of Employment Status

How people respond to the SRS-NEW may also be affected by their employment condition, such as whether they are engaged in membership-type or job-type employment. Many of the large companies in Japan have adopted membership-type employment (Hamaguchi, 2009), which expects a long-term or life-time commitment with company-initiated changes in job duties, job contents, or work location. On the other hand, many companies in the Western cultures have adopted job-based employment systems, wherein a company hires personnel who fit the job descriptions that are clearly defined, and does not assume long-term or life-time employment. In companies adopting membership-based employment, employees are more likely to work with diverse colleagues without clearly defined job descriptions. Therefore, employees in membership-based employment need to prioritize maintaining good relationships with their coworkers, because such relationship is expected to last long and their interpersonal connections are beyond job titles or job descriptions. Thus, negative emotional adjustment in the workplace (i.e., responses to SRS-NEW) is expected to show some differences between countries where membership-type employment dominates (e.g., Japan) and the countries where job-type employment dominates (e.g., United States). Thus, caution should be taken to generalize the current findings to another culture or context.

4.3. Limitations

This study had at least four limitations. First, as this was a cross-sectional study, the order of self-regulation could not be examined. It is necessary to examine the order of self-regulation when examining the model shown in **Figure 1**. In the future, longitudinal studies should be conducted, including qualitative studies (e.g.,

thought sampling), to examine the order of self-regulation. Second, following the suggestion that NTD occurs in large companies (Kurabayashi et al., 2015), we intentionally sampled employees working in large companies (i.e., with more than 300 employees). However, how negative emotions are regulated in the workplace may vary depending on the number of employees in the workplace. Therefore, the validity of this measure in workplaces with fewer employees should be examined in future studies. Third, we did not ask the participants about their job categories, partly because an association with job categories could not be assumed at this point. However, the WCS (Shoji & Shoji, 1992), which was used for validation, was administered after ascertaining the job category. As the content and self-regulation of stress may differ depending on the job category, future studies should examine the relationship with job categories. The final limitation is the lack of an assessment of depressive symptoms. Currently, there are no standardized self-reported screening tests or biomarker for NTD and TTD; therefore, it is not possible to recruit individuals with NTD or TTD. However, it might have provided meaningful information if we used a clinical assessment to measure the potential tendencies for NTD and TTD. Future research should evaluate the applicability of the SRS-NEW in clinical populations.

Despite these limitations, the scales developed in this study will facilitate further empirical research to understand the onset of NTD. For example, with the SRS-NEW, it is possible to investigate the strength of the association between IS/PS and self-regulation and examine how the work environment and perceptions of it moderate the relationship between IS/PS and self-regulation. In some countries, such as Japan, where antidepressants are less effective, NTD has become a major mental health problem for employees, and thus a psychosocial approach is expected. Thus, psychological research on the onset of NTD is needed and the SRS-NEW is expected to be used.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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