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Self-Criticism and Self-Reassurance as Mediators Between Mental Health Attitudes and Symptoms: Attitudes Towards Mental Health Problems in Japanese Workers

Citation

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Abstract

Japanese workers suffer high rates of mental health symptoms, recognised recently by the Japanese government, which has enacted workplace well-being initiatives. One reason for poor mental health concerns negative attitudes about mental health problems such as shame, which may be mediated by self-reassurance and self-criticism. This study aimed to evaluate shame-based attitudes towards mental health problems, and explore the relationship between mental health attitudes, self-criticism, self-reassurance and mental health symptoms. Japanese workers (n=131) completed three measures; attitudes towards mental health problems, mental health symptoms, and self-criticism/reassurance. A high proportion of workers reported negative attitudes about mental health problems. There were strong relationships between mental health attitudes, mental health symptoms, self-criticism, and self-reassurance. Path analyses revealed that the total and indirect effects (through self-criticism and self-reassurance) of mental health attitudes on mental health were larger than the direct effect alone. Hated-self and family-reflected shame were identified as predictors for mental health symptoms. The findings suggest the importance of self-criticism and self-reassurance in mental health and mental health attitudes. Implications for help-seeking behaviours are also discussed. Interventions aimed at reducing self-criticism and enhancing self-reassurance are recommended to improve mental health attitudes and increase help-seeking in Japanese workers.

Keywords: Japanese workers, mental health attitudes, occupational mental health, self-criticism, self-reassurance, shame

Introduction

Japanese workers have suffered from mental health symptoms for years with the number of diagnosed depressed patients steadily increasing: 441,000 (350 cases per 100,000 people) in 1999, 711,000 (560 cases per 100,000 people) in 2002, 924,000 (730 cases per 100,000 people) in 2005, and 1,041,000 (820 cases per 100,000 people) in 2008 (Ministry of Health, Labour and Welfare [MHLW], 2015). Japan has one of the highest suicide rates among developed countries (Organisation for Economic Co-operation and Development, 2015) and 60% of workers experience intense anxiety and distress (MHLW, 2013). Although the Japanese government in recent years has enacted laws to reduce overtime working to support workers' well-being (Hamermesh, Kawaguchi & Lee, 2017), mental health attitudes among Japanese workers are poor: for example, a review identified that Japanese people think that mental illness is caused by, among other factors, weakness of personality and institutionalism (Ando, Yamaguchi, Aoki, & Thornicroft, 2013; Tanaka, Ogawa, Inadomi, Kikuchi & Ohta, 2003). From a financial perspective, if Japan was able to eradicate suicide and depression, the country would gain an estimated 2.7 trillion Japanese yen per year (27 billion US dollar) (Kaneko & Sato, 2010). Given this, it is important to explore the possible reasons why Japanese people have negative attitudes towards mental health problems. One reason could be a lack of recognition of mental health problems, but previous studies have also linked it to shame and the fear of being identified as belonging to a social group with mental health problems (Kawakami, 2006). A survey of Japanese adults (n=1725) reported that a high proportion of them (43%) would feel shame for seeking help on their mental distress (Kawakami, 2006). However, specific components of their negative attitudes and shame about mental health problems have not been thoroughly examined in Japanese workers; there is a need to evaluate shame about mental health problems and negative mental health attitudes in this population.

Shame and Mental Health Symptoms

Shame does not just deter people from receiving help but also directly relates to mental health symptoms (Corrigan, 2004). Shame in general is an affect that influences people's well-being and mental health (Gilbert, 1998; Kim, Thibodeau, & Jorgensen, 2011; Tangney & Dearing, 2002). Shame is associated with depression (Alexander, Brewin, Vearnals, Wolff, & Leff, 1999; Cheung, Gilbert, & Irons, 2004; Matos & Pinto-Gouveia, 2010), anxiety (Tangney, Wagner, & Gramzow, 1992), paranoia (Matos, Pinto-Gouveia, & Gilbert, 2013), post-traumatic stress disorder (Harman & Lee, 2010), and eating disorders (Skarderud, 2007). Furthermore, in psychotherapy settings, shame in psychotherapists or clients can cause therapeutic rupture (Gilbert & Leahy, 2007), i.e., deteriorations in the quality of the therapeutic relationship leading to client dissatisfaction. Among Japanese unemployed individuals, the shame of being unemployed was associated with mental health problems including depression and anxiety (Takahashi, Morita, & Ishidu, 2015). Unsurprisingly, shame and shame-based negative attitudes towards mental health problems were also predictors of mental health symptoms among UK students (Kotera, Green & Sheffield, 2018c). Moreover, negative self-evaluation about having mental health problems could cause the ‘why try’ effect, causing poor clinical outcomes (Corrigan, Bink, Schmidt, Jones & Rüsch, 2016). However, to date, no study has explored the relationships between shame and negative attitudes towards mental health problems (i.e., mental health attitudes) and mental health symptoms among Japanese workers.

Shame and Japanese Workforce

Shame - an individual's negative emotion of inadequacy caused by failing to meet some standard (Tangney, 1990) - has been divided into external and internal shame (Gilbert 1998). External shame is related to the feeling of being looked down on by others, living negatively in the mind of others and the consequent risk of rejection and disconnection.

Internal shame is linked to our own self-judgments of being an undesired self (Gilbert 1998). External, reputation-based shame is strongly embedded in Japanese culture, which has been described as a shame culture (Benedict, 1946), where social appearances are strongly emphasised (Inoue, 2007). While internal shame can be linked to self-esteem in the West, the avoidance of social sanctions, which relates to external shame, is a driving force of people's behaviours in the East (Muller, 2001). Even people with high self-esteem may avoid certain behaviours because of the fear of shame (Gilbert, 1998). People may act according to how they think they will be judged by others, rather than principles (Benedict, 1946). For example, during the Second World War, to die in combat was seen as a virtue among Japanese soldiers and surviving was associated with shame about returning home alive (Hikita, 2004). Similarly, a popular, classic book describing the way of a samurai, 'Bushido: The Soul of Japan' (Nitobe, 1900), emphasises shame in Japanese culture.

Given the importance of shame in Japanese culture, one of the reasons for Japanese people's negative attitudes towards mental health problems, in spite of their high rates of mental health symptoms (Ando, Yamaguchi, Aoki, & Thornicroft, 2013; Tanaka, Ogawa, Inadomi, Kikuchi & Ohta, 2003; Maekawa, Ramos-Cejudo & Kanai, 2012), is that it is stigmatised and a potential source of shame (Kawakami, 2006). Moreover, Asian students living in the UK also report high levels of shame about mental health problems (e.g., Asian female UK students; Gilbert et al., 2007). Despite this strong relation between Japanese culture and shame about mental health problems, few studies have focused on the role of shame in the mental health of Japanese people (Kasori, 2012; Nagafusa, 2002; Okada, 2003; Okada & Sasaki, 2004). For example, Kasori (2012) found that proneness to shame in academic settings (e.g., making a presentation) was significantly higher in a depressed group of Japanese students (n=56) than in a non-depressed group of Japanese students (n=47). However, these studies did not examine a specific type of shame, i.e., shame about mental health symptoms, which has been found critical to mental health (Kotera, Green & Sheffield,

2018c; Kotera, Conway & Van Gordon, 2018b): to date, no study has reported relationships between shame about mental health symptoms and mental health in Japanese workers. Kawakami (2006) identified shame about mental health symptoms among Japanese adults, however it did not focus on workers.

Self-Criticism and Self-Reassurance

Shame, self-criticism and difficulties with being self-supportive and reassuring (i.e., self-reassurance) are significantly related to each other and to mental health symptoms (Gilbert et al., 2010). Shame and self-criticism can stimulate the threat system, while low self-reassurance inhibits well-being: both are linked to mental health symptoms (Gilbert, 2007a, 2009). Gilbert, Clarke, Hempel, Miles, and Irons (2004) measured two forms of self-criticism. One is related to self as feeling inadequate and inferior, while the other is related to self-disgust and self-hatred. The functions of self-criticism include a desire for self-correction and to avoid making mistakes (i.e., inadequate-self), in contrast to a desire to hurt or for punishment (i.e., hated-self). Inadequate-self and hated-self were negatively related to self-reassurance. Shame and mental health symptoms have both been related to self-criticism and self-reassurance (Gilbert et al., 2010). Those four constructs were strongly related to each other, and self-criticism was a significant predictor of mental health symptoms in a non-psychotic clinical population (n=73) who had moderate to severe mental health difficulties (Gilbert et al., 2010). Kotera, Green, and Sheffield (2018c) recently investigated these relationships among 87 UK social work students and found that shame about mental health symptoms and mental health were positively related to inadequate-self and hated-self, and negatively related to reassured-self. Thus, how people treat themselves mentally, i.e. being self-critical or self-reassuring, is important to their mental health. Accordingly, the impacts of self-criticism and self-reassurance on the relationship between mental health attitudes and mental health symptoms should be explored.

The three emotion regulatory systems (threat, drive, and soothing systems), the focus of compassion focused therapy (CFT, Gilbert, 2009), underpins self-criticism and self-reassurance. In the soothing system, our parasympathetic nervous system, which modulates rest, acquiescence and digestion, is activated; we feel safe and content, which contributes to better mental health (Gilbert, 2009). In contrast, high degrees of self-criticism and shame can activate our threat system, increasing feelings of anger, disgust, and anxiety. It is theorised that activating the threat system, involving the fight-or-flight response of our sympathetic nervous system, inhibits the soothing, parasympathetically-driven system and makes it harder for individuals to accept love and safety, even though self-criticism aims to protect us from losing social acceptance and love (Gilbert, 2009). This can lead to mental health symptoms (Gilbert, 2007a, 2009). The drive system runs by excitement and vitality, and seeks incentives and resources (Gilbert, 2009). Continued activation of this system can also be problematic, as not achieving or acquiring what was desired can cause us to question our efficacy, increase self-criticism and cause depression (Gilbert, 2009). A good example is addiction. When an addict does not gain their desired object or experience, they feel a lack of control, leading to self-criticism derived from rage and fear of disappointment (Gilbert, 2009). Similarly, shame can hinder our ability to accept our imperfections, i.e., self-reassurance (Duarte et al., 2017), which mediates the relationship between shame and mental health symptoms (Marta-Simões, Ferreira & Mendes, 2017), and feelings of contentment through the soothing system (Gilbert, 2009). In conclusion, self-reassurance is benign as it relates to our soothing system, whereas self-criticism can be malignant as it activates our threat and drive systems, which are related to mental health (see Figure 1). Because the central theme in this study was the relationship between mental health attitudes and mental health symptoms, mental health attitudes were positioned as a predictor, and mental health symptoms were positioned as an outcome, and self-criticism and self-reassurance were hypothesised mediators.

[Insert Figure 1]

Aims

This study sought to evaluate mental health attitudes among Japanese workers. We hypothesised that they would have poor attitudes about mental health; specifically, more than half of them would have over the midpoint scores for negative attitudes towards mental health problems and shame about having mental health problems (H1). We also explored the relationship between mental health attitudes, mental health symptoms, self-criticism, and self-reassurance: mental health attitudes would directly and indirectly predict mental health symptoms - self-criticism and self-reassurance would serve as indirect pathways from mental health attitudes to mental health symptoms (H2).

Method

Participants

A total of 143 Japanese workers agreed to participate of which 131 (73 male, 58 female) completed three self-report measures, satisfying the required sample size of 115 based on statistical power calculations (Faul, Erdfelder, Buchner, & Lang, 2009). Participants were recruited through opportunity sampling via personal contacts and snowball sampling, using an online consent form and online survey. No incentives were given for participation. The age range was 22–73 years (M=40.31, SD=11.17); 51% of them worked in major urban prefectures (Tokyo, Kanagawa, and Osaka) that have more than eight million people; and 21%, 16%, and 15% worked in the service, manufacturing, and education industry, respectively; 12%, 11%, and 10% were team leaders in a section, presidents and section chiefs, respectively; and 36% worked at a company with more than 1,000 employees.

Measures

[Insert Table 1]

Table 1 summarised the details of the measures in this study including their subscales and measured constructs.

Attitudes Towards Mental Health Problems comprises 35 items evaluating negative attitudes towards mental health problems in general and three kinds of shame for having a mental health problem; external, internal and reflected shame (Gilbert et al., 2007). The total score indexes the level of mental health attitudes. The negative attitudes towards mental health problems in general are assessed by two subscales: community attitudes and family attitudes (four items each) assess one's perception of how their community and family see mental health problems *in general* (e.g., 'My community sees mental health problems as something to keep secret' for community attitudes; 'My family see mental health problems as personal weakness' for family attitudes). External shame is assessed by two subscales: community external shame and family external shame (five items each) assess one's perception of how their community and family would see them, *if they had a mental health problem* (e.g., 'I think my community would look down on me' for community external shame; 'I think my family would see me as inferior' for family external shame). Internal shame (five items) considers the degree of shame one experiences if they have a mental health problem (e.g., 'I would see myself as inferior [if I suffered from mental health problems]'). Reflected shame is assessed by two subscales: family-reflected shame (seven items) considers how one's family would be seen if one had a mental health problem (e.g., 'I would worry about the effect on my family'), and self-reflected shame (five items) considers fears of shame on oneself associated with a close relative having a mental health problem (e.g., 'I would worry that my own reputation and honour might be harmed'). All of the subscales had good internal consistencies (α=.85-.97; Gilbert et al., 2007).

Depression Anxiety and Stress Scale (DASS21) is a short-form version of the DASS42 (Lovibond & Lovibond, 1995) with 21 items, measuring levels of depression ('I felt

that I had nothing to look forward to'), anxiety ('I felt I was close to panic') and stress ('I found it difficult to relax'). Participants are asked to score how much each statement applied to them over the past week, on a four-point scale (from 0 being 'Did not apply to me at all' to 3 being 'Applied to me very much, or most of the time'). The DASS21 subscales have good reliability ($\alpha \geq .87$; Antony et al., 1998). The Japanese version of DASS was available (The University of New South Wales, n.d.). For the purpose of this study, the total score was used to indicate the level of their mental health symptoms (Lovibond & Lovibond, 1995).

Forms of Self-Criticising/Attacking & Self-Reassuring Scale identifies how people think and feel about themselves when things go wrong for them (Gilbert, Clarke, Hempel, Miles, & Irons, 2004), comprising 22 items with three components; two forms of self-criticalness (inadequate-self and hated-self), and one form of self-reassurance (reassured-self). Inadequate-self relates to a sense of personal inadequacy ('I am easily disappointed with myself'), hated-self to a desire to hurt or persecute the self ('I have become so angry with myself that I want to hurt or injury myself'), and reassured-self to a sense of self-support or compassion for the self ('I am able to remind myself of positive things about myself'). Each item is marked on a five-point Likert scale (from 0 being 'Not at all like me' to 4 being 'Extremely like me'). Cronbach alphas were .90 for inadequate-self, .86 for hated-self, and .86 for reassured-self (Gilbert et al., 2004).

The Attitudes Towards Mental Health Problems and Forms of Self-Criticising/Attacking & Self-Reassuring Scale were translated into Japanese by the first, third and fourth authors, who were all Japanese-English bilinguals and had completed the introductory training of Compassion-Focused Therapy (which was where those two scales were derived). Then, back-translation was completed by a licenced psychotherapist who was fluent in Japanese and English, and a meeting was conducted among the four to ensure the original meaning was captured in the Japanese version. Ethics approval was obtained from the University of Derby Psychology Research Ethics Committee (Ref: 88-14-YK).

Results

Analysis was conducted using IBM SPSS version 24.0. The data were screened for normality of the distributions and for outliers. No outliers were identified. Skewness values ranged from –.07 to 2.14 and Kurtosis values from –.94 to 5.37. All the subscales and scales yielded a high Cronbach alpha, indicating high internal consistency ($\alpha \geq .78$; see Table 1). More than half of the Japanese workers scored over the midpoint in community attitudes, community external shame, internal shame, and family-reflected shame subscales. H1 was supported.

As none of the subscales and scales were normally distributed as assessed by Shapiro-Wilk's test ($p < .05$), they were square-root-transformed to satisfy the assumption of normality. Pearson's correlations were used to examine relationship between mental health attitude, mental health symptoms, self-criticism, and self-reassurance (Table 2).

[Insert Table 2]

Significant correlations were identified between most of the subscales for mental health attitudes, self-criticism and self-reassurance, and mental health symptoms.

Self-Criticism and Self-Reassurance as Indirect Pathways

Secondly, path analysis was conducted (H2), using model 4 in the Process macro version 3 (parallel mediation model; Hayes, 2017, to examine whether self-criticism and self-reassurance mediated the relationship between mental health symptoms (outcome variable) and mental health attitudes (predictor variable). Self-criticism was calculated by combining the scores in inadequate-self and hated-self. Mental health attitudes were calculated by

totalling the subscale scores of the Attitudes Towards Mental Health Problems scale (Gilbert et al., 2007).

[Insert Figure 2]

There was a significant indirect effect of mental health attitudes on mental health symptoms through self-criticism and self-reassurance, *b*=.23 (self-criticism=.09; self-reassurance=.14), BCa CI [.14, .32], which explained 21% of the variance in mental health symptoms, and accounted for 68% of the total effect, indicating a large effect. The direct effect of mental health attitudes on mental health symptoms, controlling for self-criticism and self-reassurance, was also significant, *b*=.10, *t*(127)=1.99, *p*=.049, implying that mental health attitudes directly predicted the variance in mental health symptoms and that mediation was partial. The total effect of mental health attitudes on mental health symptoms, including self-criticism and self-reassurance, was significant, *b*=.34, *t*(129)=7.34, *p*<.001. Controlling for self-criticism and self-reassurance, 29% of the variance in mental health symptoms was explained by mental health attitudes. H2 was supported.

Predictors of Mental Health Symptoms

Lastly, standard multiple regression analysis was conducted to explore the relative contribution of the subscales in the Attitudes Towards Mental Health Problems and the Forms of Self-Criticising/Attacking & Self-Reassuring Scale to mental health symptoms (Table 3). Gender and age were entered first to statistically adjust for their effects (step one), and the subscales for these two scales were entered (step two). Because of the many predictor variables, the adjusted coefficient of determination (Adjusted R^2) was reported. Multicollinearity was not a concern (all the VIF values ≤ 10).

[Insert Table 3]

The subscales for the Attitudes Towards Mental Health Problems and the Forms of Self-Criticising/Attacking & Self-Reassuring Scale predicted 47% of the variance in mental health symptoms, indicating a medium effect size (Cohen, 1988), after adjustment for gender and age, with family-reflected shame and hated-self as predictors: both positively predicted mental health symptoms.

Discussion

The aims of this study were to evaluate attitudes towards mental health problems among Japanese workers and to explore the relationship between mental health attitudes, mental health symptoms, self-criticism, and self-reassurance. The results showed that a high proportion of Japanese workers had high shame about mental health problems, and their mental health attitudes, mental health symptoms, self-criticism, and self-reassurance were significantly correlated with each other. Mental health attitudes directly predicted the variance in mental health symptoms and self-criticism and self-reassurance were partial mediators of this relationship. Moreover, mental health attitudes, self-criticism, and self-reassurance predicted 47% of variance in mental health symptoms; hated-self and family-reflected shame were significant predictors for mental health symptoms.

The high proportion of shame about mental health problems in Japanese workers was aligned with the emphasis of shame in Japanese culture. In particular, their community external shame and internal shame were high: more than 75% of them scored over the midpoint of the scale (Table 1), and the mean scores in those two subscales were higher than UK worker and student samples (Kotera, Adhikari & Van Gordon, 2018a; Kotera et al., 2018b; Kotera et al., 2018c). This may suggest that Japanese workers were particularly concerned about how their colleagues would perceive them if they have a mental health

problem (i.e., community external shame), and how they see themselves (i.e., internal shame). Japanese workers' high community external shame may be related to their perceived loss of face or the perception that mental health problems might damage positive social impressions (Lin & Yamaguchi, 2011). Japanese workers are sensitive to losing their reputation at work (i.e., their work community), and thus may feel a great degree of shame for having mental health problems. This may be related to the strong masculinity of Japanese culture (Hofstede, Hofstede & Minkov, 2010), where objective success (e.g., climbing up the organisational or socioeconomic ladder) is respected more than the quality of life (e.g., doing a job that one loves). Japan's masculinity score is the highest among 76 researched countries (Hofstede et al., 2010). Indeed, similar results were found in the UK, another country with a masculine culture (11th of 76 countries; Hofstede et al., 2010). The fear of negative perceptions towards mental health problems in a workplace was also reported among UK workers (Kotera et al., 2018a; Waugh, Lethem, Sherring & Henderson, 2017). Future research should explore how these cultural dimensions and factors are related to mental health attitudes in people from different cultures and countries. The high internal shame reported by Japanese workers may be explained by their construal of self (Markus & Kitayama, 1991): Japanese people tend to form their identity from how they believe others see them. If they have a mental health problem, Japanese workers may likely believe that their colleagues will perceive them as weak (community external shame), which leads them to think they are weak (internal shame). This helps to understand the high level of relational concerns in Japanese culture highlighted in a recent study by Ishii, Mojaverian, Masuno and Kim (2017). They found that relational concerns, such as shame, were the primary decision-making factor for help-seeking among Japanese Americans, who preferred implicit support (e.g., receiving emotional comfort without disclosing their problems), whilst self-esteem was the primary decision-making factor among European Americans, who preferred explicit support (e.g., concrete advice). Japanese people's external formation of their identity (as

opposed to Western people's internal formation of their identity; Markus & Kitayama, 1991) may be captured by the high levels of community external shame and internal shame reported here.

Furthermore, internal shame was more strongly correlated with the community subscales (community attitudes and community external shame) than with the family subscales (family attitudes and family external shame) (Table 2). This may be related to the notion of uchi/soto (in-/out-group) in Japanese culture: people's behaviours and attitudes change distinctively when they are inside the group and outside of it (Burt, Bachnik, & Quinn, 1995). Again, relating to the external construal of self (Markus & Kitayama, 1991), it is possible that Japanese workers consider their community as soto, and family as uchi. Therefore, what soto (community, i.e., workplace) is perceived to think matters more to their internal shame than what uchi (family) is perceived to think (Burt, Bachnik, & Quinn, 1995).

Mental health symptoms were linked to all the shame subscales of the Attitudes Towards Mental Health Problems (Table 2). This supports findings from other studies in the UK and Portugal that relate mental health symptoms to shame (Cheung et al., 2004; Matos & Pinto-Gouveia, 2010). All the subscales of Forms of Self-Criticising/Attacking & Self-Reassuring Scale and mental health symptoms were correlated with each other (Table 2). This suggests that Japanese workers with mental health symptoms may want to disparage themselves and focus on their inadequacy; accordingly, they may find it hard to reassure themselves. These relationships were similar to those in other cultures (e.g., Gilbert et al., 2007).

Our path analyses demonstrated that while the direct effect of mental health attitudes on mental health symptoms, controlling for self-criticism and self-reassurance, was significant, the indirect effect was larger than the direct effect. Consistent with previous findings (Kotera et al., 2018b), mental health attitudes were predictors for mental health symptoms in Japanese workers, implying that the aforementioned educational training about

mental health to reduce shame and negative attitudes towards mental health problems may be useful for their mental health. The larger indirect effect (than the direct effect) suggests that though negative mental health attitudes and shame predicted the variance in mental health symptoms, self-criticism and self-reassurance were what predicted the greater variance in mental health symptoms. These findings help refine our suggested solutions for mental health symptoms: interventions should target reducing self-criticism and enhancing self-reassurance (i.e., compassion training and collaborative reframing), instead of solely focusing on reducing shame and negative mental health attitudes in Japanese workers.

Finally, hated-self and family-reflected shame were predictors for mental health symptoms (Table 3). This suggests that reducing this type of self-criticism and family-reflected shame may reduce mental health symptoms among Japanese workers. Hated-self is the desire to mentally hurt themselves in times of difficulty. Compassion mind training would be useful to reduce hated-self; by practicing compassion for themselves, the soothing system will be activated (see Figure 1), and this type of self-criticism should be reduced. Similarly, collaborative reframing, attempting to perceive their and their colleagues' challenging situation and internal qualities positively in their work team (Kotera & Van Gordon, 2018), may also be particularly effective in the collective culture of Japanese workers.

Family-reflected shame is about a degree of worry one has about one's family if they were looked down on because of one's mental health problems (Gilbert et al., 2007). In order to reduce this type of shame, for example, educational training about the heritability of depression, which is about 35% (Matsumoto, Kunimoto, & Ozaki, 2013), or aetiology of mental health problems considering a wide range of potential causes (not only familial factors but also other environmental or psychological factors) may be useful for workers. This type of training would educate Japanese workers that their family members' mental health problems are not always passed onto other family members and that there are numerous external factors that could cause mental health problems. Alternatively, helping people cope

with shame by practicing compassion may be useful (Gilbert, 2009). Such alternative approaches to the mental health of Japanese workers would be valuable to explore in the future.

These results suggest the need for a closer analysis of self-criticism related to mental health symptoms. Exploring the motivations and processes (i.e. why and how) underpinning Japanese workers criticism of themselves (including shame-related criticism, as elucidated in this study), particularly when they suffer from mental health symptoms, would be useful. A cross-cultural study reported that motivation for happiness was linked to higher well-being in collective cultures, whereas it was linked to lower well-being in individualistic cultures (Forb et al., 2015). Moreover, Japanese people tend to accept criticism of themselves more than positive feedback, while Western people do the reverse (Kurman & Sriram, 2002). This difference was linked with Japanese virtue of modesty (Kurman & Sriram, 2002), which has not been explored in relation to self-criticism among Japanese workers to date. Future research should examine the effects of those interventions on self-criticism and self-reassurance, and its impact on mental health of Japanese workforce.

There are several limitations to this study. First, Japanese workers are not used to disclosing their mental issues, due to greater concerns about confidentiality than non-Asian populations (Gilbert et al., 2007), and so may have under reported here. Developing a shorter version of the Attitudes Towards Mental Health Problems scale would be helpful for data collection and may mean that more participants complete it. Further, cross-cultural or cross-industrial comparisons of the Attitudes Towards Mental Health Problems scores would be helpful for capturing the characteristics of mental health attitudes in each culture and industry. This study failed to do this because only available data at the time of the study were UK students and hospitality workers, who would not make meaningful comparison with our sample. Additionally, relating to a limitation of path analysis (Gelfand, Mensinger & Tenhave, 2009), there may be a third unmeasured variable in our theoretical model, for

example self-compassion or social support, which could reduce mental health symptoms and self-criticism (Harandi, Taghinasab & Nayeri, 2017; Kotera et al., 2018b; Kotera et al., 2018c). Lastly, although the Attitudes Towards Mental Health Problems and Forms of Self-Criticising/Attacking & Self-Reassuring Scale were translated into Japanese by the bilingual researchers, validation of these scales into Japanese is needed.

In summary, a high proportion of Japanese workers reported shame and negative attitudes about mental health problems. In line with previous Western studies, significant correlations were found between mental health attitudes, mental health symptoms, self-criticism, and self-reassurance in a sample of Japanese workers. Self-criticism and self-reassurance served as indirect paths linking mental health attitudes and mental health symptoms. Moreover, hated-self and family-reflected shame were identified as predictors of mental health symptoms. Accordingly, interventions that target reduction of self-criticism and enhancement of self-reassurance were recommended for Japanese workers' challenging mental health.

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Table 1: The sub/scales used, their measured constructs, and descriptive statistics (131 Japanese workers)

Measured Constructs		Scales	Subscales (Range)	M ± SD	α	% over midpoint
Negative Attitudes Towards Mental Health Problems	Mental Health Attitudes	Attitudes Towards Mental Health Problems	Community Attitudes (0-12)	7.45±2.59	.78	59.54
			Family Attitudes (0-12)	5.84±2.26	.85	32.82
Shame about Mental Health Problems			Community External Shame (0-15)	10.62±4.30	.95	76.34
			Family External Shame (0-15)	6.85±2.96	.96	27.48
			Internal Shame (0-15)	11.14±4.29	.93	77.10
			Family-Reflected Shame (0-21)	12.60±4.25	.86	64.89
			Self-Reflected Shame (0-15)	9.69±2.82	.91	31.30
Mental Health Symptoms (0-42)		Depression Anxiety and Stress Scale (DASS21)	Depression Anxiety Stress	21.00±6.21	.93	
Self-Criticism		Forms of Self-Criticising/Attacking & Self-Reassuring Scale	Inadequate-Self (0-36)	22.20±7.42	.86	
			Hated-Self (0-20)	8.84±3.94	.85	
Self-Reassurance			Reassured-Self (0-32)	25.54±7.07	.88	

Table 2. Correlations between mental health attitudes, mental health symptoms, self-criticism, and self-reassurance in 131 Japanese workers

	1	2	3	4	5	6	7	8	9	10	11	12	13
1 Gender	-												
2 Age	-.06	-											
3 Community Attitudes	-.07	-.02	-										
4 Family Attitudes	.02	-.04	.23**	-									
5 Community External Shame	-.002	.06	.73**	.24**	-								
6 Family External Shame	-.003	-.14	.17	.62**	.32**	-							
7 Internal Shame	.01	-.04	.43**	.28**	.49**	.27**	-						
8 Family-Reflected Shame	.08	.01	.30**	.43**	.43**	.48**	.63**	-					
9 Self-Reflected Shame	.02	-.01	.24**	.07	.33**	.32**	.23**	.38**	-				
10 Mental Health Symptoms	-.08	-.27**	.39**	.25**	.40**	.31**	.39**	.44**	.33**	-			
11 Inadequate-Self	-.14	-.28**	.39**	.35**	.43**	.40**	.59**	.48**	.40**	.62**	-		
12 Hated-Self	-.12	-.26**	.33**	.23**	.38**	.37**	.47**	.41**	.38**	.70**	.79**	-	
13 Reassured-Self	.09	.29**	-.21*	-.10	-.24**	-.29**	-.27**	-.28**	-.18*	-.51**	-.42**	-.60**	-

Gender (M=1, F=2); **. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed).

Table 3. Multiple regression: Mental health symptoms for mental health attitudes, self-criticism and self-reassurance in 131 Japanese workers

	Mental Health Symptoms		
	B	SE_B	β
Step 1			
Gender	-.13	.11	-.10
Age	-.02	.01	**-.28****
Adjusted R^2		.07	
Step 2			
Gender	-.03	.08	-.03
Age	-.01	.004	-.11
Community Attitudes	.17	.13	.13
Family Attitudes	.08	.12	.06
Community External Shame	.02	.10	.02
Family External Shame	-.12	.11	-.09
Internal Shame	-.11	.09	-.11
Family-Reflected Shame	.22	.10	**.21***
Self-Reflected Shame	.05	.10	.04
Inadequate-Self	.05	.09	.07
Hated-Self	.48	.11	**.47****
Reassured-Self	-.11	.07	-.12
Δ Adjusted R^2		.47	

Gender (M=1, F=2); B=unstandardised regression coefficient; SE_B=standard error of the coefficient; β=standardised coefficient; *p<.05; **p<.01.

Figure 1. Theoretical model based on the three emotion regulatory systems

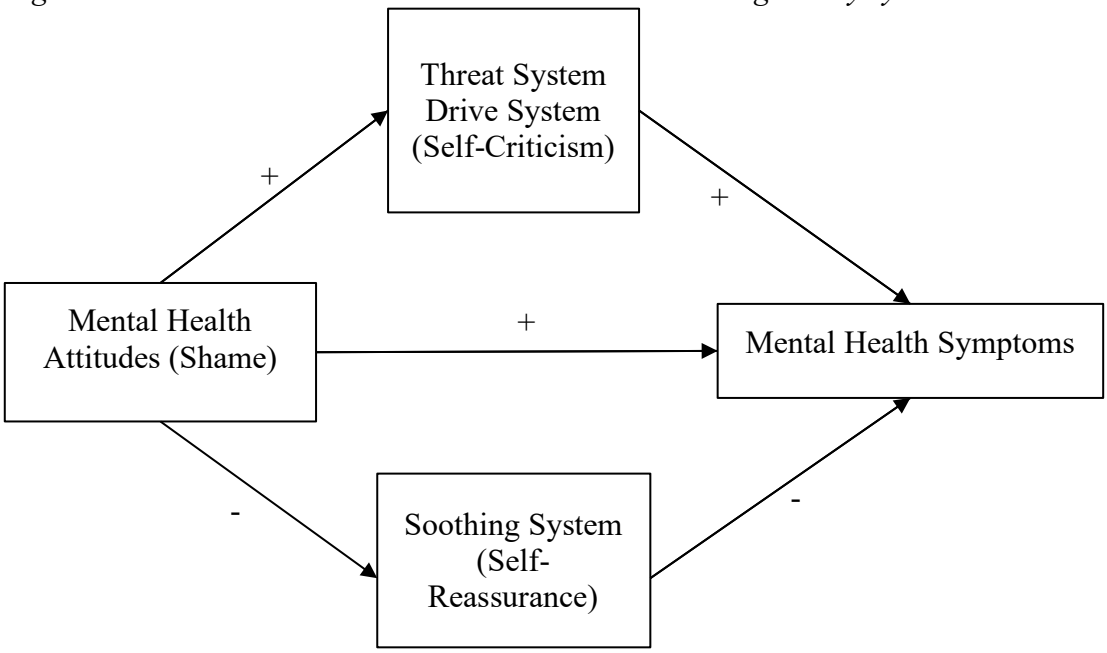
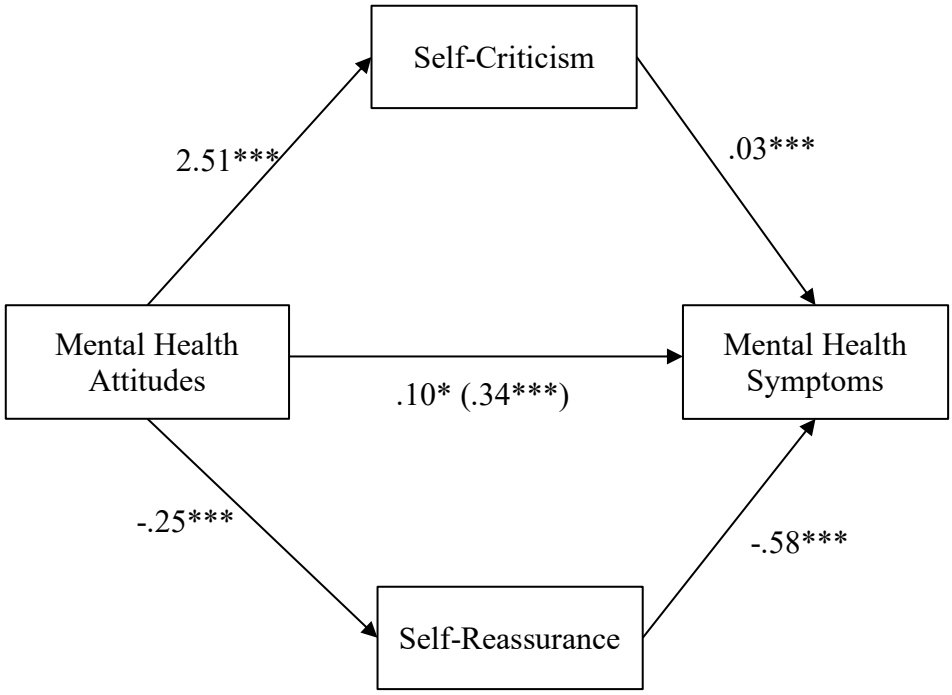


Figure 2. Parallel mediation model: Mental health attitudes as a predictor of mental health symptoms, mediated by self-criticism and self-reassurance. The confidence interval for the indirect effect is a BCa bootstrapped CI based on 5000 samples.



*p<.05; **p<.01; ***p<.001. Direct effects (Total effects)