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HEALTH PSYCHOLOGY | RESEARCH ARTICLE

Contingent self-esteem structures related to cardiac, exhaustive, and immunological disease: A comparison between groups of outpatients

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Abstract: Hostile resentful contra repressive avoidant behaviors, widely associated with different health processes, are considered to arise from people's specific contingent self-esteem strategies. The present study examines competence-based self-esteem (CBSE), referring to self-critical strivings, and relation-based self-esteem (RBSE), referring to rejection sensitivity and compliance, in three groups of outpatients ($n = 85$) and healthy controls ($n = 37$). Patients diagnosed with exhaustion syndromes displayed significantly higher CBSE and RBSE than all other groups. Patients diagnosed with cardiac type of disease showed significantly higher CBSE than those with immunological type of disease and healthy controls, whereas the immunological group reported significantly higher RBSE than the cardiac group and healthy controls. Further, cardiac patients displayed significantly higher CBSE than RBSE, whereas immunological patients reported significantly higher RBSE than CBSE. A discriminant analysis, incorporating the theoretical constituents of the contingent SE scales, showed that the four groups could be predicted by their SE profiles. The systematic patterns found in the present results shed light on the role of self-esteem contingency for differential psychosocial coping and health processes.

ABOUT THE AUTHORS

Maarit Johnson is an associate professor at Stockholm University conducting research on self-esteem, personality, and well-being. Her work emphasizes dynamic view of self-esteem functioning, with importance for vulnerability and resilience. A major interest in her research project has been developing and validating reliable measurement tools and integrated personality-health models providing deeper understanding of psychosocial health processes. Other interests include psychometric studies of response bias. Shahnaz Rasouli has completed her master's degree at Stockholm University.



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PUBLIC INTEREST STATEMENT

When everyday situations trigger early founded emotional structures, related to self-value, we react habitually to defend or protect our own worth. Compulsive, hostile strivings result if self-value is staked on performances, whereas passive repressive behaviors, to avoid rejection, result if self-value is attached to emotional security. These two types of behaviors are widely discussed for their role in disease processes linked to heart versus immune function, but the motivational implications of these chronic patterns have not been examined. This study found systematic and distinctive patterns of relations between contingent self-esteem types and different groups of outpatients. High competence-dependent self-esteem appears related to cardiac (e.g. heart condition) and exhaustive (e.g. burnout) types of problems, whereas high relation-dependent self-esteem appears related to immunological type of disease (e.g. arthritis). The results increase awareness of the nature and mechanisms of differentially unhealthy habitual behaviors important for developing relevant prevention and treatment practices.

Subjects: Health Psychology; Personality; Self & Social Identity

Keywords: self-esteem contingency; habitual behaviors; cardiac disease; immunological disease; burnout

1. Introduction

Harsh competence strivings, widely associated with cardiovascular disease (Blatt, Cornell, & Eshkol, 1993; Chida & Steptoe, 2009; Smith, Cundiff, & Uchino, 2012) and exhaustive syndromes (Blom, 2011; Hallsten, 2005; Johnson, Paananen, Rahinanti, & Hannonen, 1997), are considered to be driven by one's concerns of self-worth (Martin, Kuiper, & Westra, 1989). Other kinds of behaviors reflecting self-doubts, such as dependency and compliance (Blatt et al., 1993), have been associated with immune malfunction and passive coping with illness (Kneier & Temoshok, 1984; Walker, Littlejohn, McMurray, & Cutolo, 1999; Wood et al., 2006). The cognitive-motivational implications of these differentially vulnerable modes of behavior are still mysterious. A promising frame for addressing this issue is to consider the nature of people's self-esteem contingency reflecting specific motivational and behavioral patterns when adjusting to self-relevant social evaluative threats (Blatt et al., 1993; Johnson & Blom, 2007; Kemeny, 2009; Zoccola, Dickerson, & Lam, 2012).

As maintaining one's self-esteem is an important psychological need in humans (Leary, 1999), an impoverished sense of self-regard impels the individual to seek approval in relational or competence issues (Johnson & Blom, 2007; Sheldon, Elliot, Kim, & Kasser, 2001). Accordingly, the habitual adjustment strategies people develop for self-esteem maintenance depend on the significance of the perceived threat for one's self-esteem contingency. Johnson (2011) found a link between competence-based self-esteem (CBSE) and cardiac/tension complaints that was mediated by hostile strivings and perfectionism, whereas the link found between relation-based self-esteem (RBSE) and immunological type of disease was mediated by emotion suppression and dependency (see also Blatt et al., 1993; Johnson, 2010).

To complement previous research (Blatt et al., 1993; Johnson, 2011; Johnson et al., 1997; Smith et al., 2012), the present study set out to explore further the role of two types of contingent self-esteem for differential health in a clinical setting.

1.1. Contingent self-esteem—two vulnerable dispositions

Self-esteem level was long considered an important factor behind disease risk and resiliency (Diener & Lucas, 1999). However, due to its trait character and strong association with other positive personality factors, dynamic self-esteem strivings have gained increasing attention when studying mechanisms of well-being (Crocker & Park, 2004; Johnson & Patching, 2013). It is widely agreed that people's psychological needs guide their behavioral responses in social interactions (Leary, 1999; Sheldon et al., 2001). The context triggers the person's specific cognitive-motivational structures, founded in early interactions, and precipitates certain emotional and physiological states (Cole, Kemeny, Weitzman, Schoen, & Anton, 1998; Segerstrom & Miller, 2004; Smith, Baron, & Grove, 2014).

Johnson and Blom (2007) developed constructs and measures of CBSE and RBSE, where the core of vulnerability is considered an impoverished basic sense of self-esteem (Forsman & Johnson, 1996) impelling the individual to seek reassurance from either relational or achievement issues (Crocker & Park, 2004; Johnson, 2010; Sheldon et al., 2001). CBSE arises from early experiences of being accepted conditionally upon parental standards, fostering a conviction that competence, status, and perfection define one's self-worth (Deci & Ryan, 1995; Johnson & Blom, 2007). Therefore, receiving criticism or facing failure entails frustration and aggression that elevates blood pressure (Blom, Johnson, & Patching, 2011; Johnson & Patching, 2013). In contrast, RBSE develops given experiences of insecure attachment and emotional neglect in early years, entailing compliance, appeasing others, and repressing one's own needs in order to avoid rejection (Johnson & Blom, 2007; Pincus & Wilson, 2001), behaviors linked to impaired immune function (Gross & John, 2003; Petrie, Booth, & Pennebaker, 1998). These behaviors triggered by relevant daily encounters are automatic responses

to maintain self-esteem (Bargh & Williams, 2006). They may appear rewarding for the moment but are dysfunctional in the long run (Blatt et al., 1993; Johnson, 2011; Klinnert, 2003).

1.2. Differential vulnerability to disease

It is widely agreed that self-worth staked on competence precipitate cardiovascular and tension problems such as migraine and musculoskeletal pains (Blom et al., 2011; Higgins, Vookles, & Tykocinski, 1992; Johnson, 2011; Johnson et al., 1997; Smith et al., 2012). However, other evidence links burnout and pain syndromes in women to emotional rumination and excessive relational concerns (Nolen-Hoeksema & Jackson, 2001; Pines, 1993).

The evidence of behavioral factors' role for diseases of immunological origin, such as some types of cancer, rheumatoid arthritis, and asthma, derives from both clinical observations (Kneier & Temoshok, 1984; Sharma & Nandkumar, 1980; Solomon, 1981) and empirical findings (Baltrusch, Stangel, & Waltz, 1998; Luecken & Compas, 2002; Wood et al., 2006) indicating that behavioral modes, such as dependency, rejection sensitivity, and emotion suppression, play a role in immune malfunction. These kinds of passive modes appear to rise from relation-dependent self-esteem structure, maintained to protect the self-value (Blatt et al., 1993; Johnson, 2011; Pincus & Wilson, 2001).

There is also evidence that high rejection sensitivity contra hostile resentment together with subsequent habitual behaviors activate different brain regions (Kross, Egner, Ochsner, Hirsch, & Downey, 2007; Shapiro et al., 2000) and different pathways in physiological systems (Cole et al., 1998; Kemeny, 2009). Subsequently, it can be thought that these cognitive-behavioral modes inherent in the two types of contingent self-esteem play a role in the progress of different physiological insults of cardiac, exhaustive, or immunological origin (Blatt et al., 1993; Cole et al., 1998; Van Houdenhove, 2000).

The aim of the present study is to shed light on the cognitive-motivational implications of disease processes by examining patterns of CBSE and RBSE structures in outpatients suffering from various types of disease. Main interest concerns the differences between and within the patient groups; healthy controls were used as a reference point for these comparisons. For the purpose of the present study, diseases such as asthma and rheumatoid arthritis were classified as referring to immune malfunction, whereas high blood pressure and heart condition were taken to refer to disturbances in cardiac/coronary system, in line with recommendations of the World Health Organization (WHO, 2011). Stress-related syndromes such as burnout and fibromyalgia are more difficult to classify but are referred to exhaustion and emotional distress (Pines, 1993; Van Houdenhove, 2000).

Hypotheses

- (i) Patients diagnosed with cardiac/tension disorders and exhaustion syndromes have higher CBSE than the immunological patients and healthy controls (Blatt et al., 1993; Blom, 2011; Chida & Steptoe, 2009; Higgins et al., 1992; Johnson, 2011; Johnson et al., 1997).
- (ii) Patients diagnosed with immunological type of disease have higher RBSE than the cardiac/tension patients and healthy controls (Blatt et al., 1993; Gross & John, 2003; Johnson, 2011; Klinnert, 2003).
- (iii) Patients with cardiac/tension type of disorders have higher CBSE than RBSE, whereas those suffering from immunological disease have higher RBSE than CBSE (Blatt et al., 1993; Johnson, 2010, 2011).

2. Method

2.1. Participants

The participants were 85 outpatients diagnosed by medical specialists for different types of disease, and 37 healthy controls. The patients were recruited by convenience sampling following a routine interview at the National Insurance Agency ("Försäkringskassa") in Sweden, aimed at providing

support and job coaching after a sick leave period during the last three years. At the time of data collection, all patients were judged, according to their medical specialists, sufficiently recovered to continue their normal occupation. For the present study, the patients were grouped to cardiac, immunological, and exhaustive types of disorders (WHO, 2011). The cardiac/tension group comprised 32 patients (high blood pressure, $n = 16$, heart condition $n = 8$, neck pain, $n = 8$), the immunological group comprised 25 patients (gastric or skin cancer, $n = 8$, rheumatoid arthritis, $n = 7$, asthma, $n = 10$), and the exhaustion group consisted of 28 patients (burnout, $n = 13$, fibromyalgia, $n = 15$). None of the patients had a multiple diagnosis. The healthy controls, representing normal population, were not clinically examined but none of them were known to suffer from the types of problems which the patients were diagnosed for or other diseases. The participants, of which 85% were women, aged from 28 to 71 years ($M = 45.6$, $SD = 9.3$). By ethnicity, 70% were Swedish or Nordic, 27% were East-Europeans, and 3% were non-Europeans; all had lived in Sweden most of their lives. The demographic variables were reasonably matched in the four groups.

2.2. Measures

2.2.1. Contingent self-esteem

The competence aspect of contingent self-esteem was measured using the CBSE Scale (Johnson & Blom, 2007) comprising 12 items with a verified theoretical structure referring to two factors: (i) self-worth conditional on competence (e.g. "I feel worthwhile only when I have performed well") and (ii) exaggerated self-criticism coupled with a feeling of insufficiency in one's own accomplishments (e.g. "It is hard for me to forgive myself when I fail in an important task"). The relationship aspect of contingent self-esteem was measured using the RBSE Scale (Johnson & Blom, 2007) comprising 14 items with a verified theoretical structure reflecting three factors: (i) fear of rejection (e.g. "My self-esteem fluctuates easily with signs of acceptance and rejection from others"), (ii) self-esteem contingent on others' love and support (e.g. "It is important for my self-esteem to feel loved"), and (iii) compliance to avoid disapproval of others (e.g. "I am inclined to be submissive and defer to others in an attempt not to lose their acceptance and regard"). The scales have shown high indices of reliability, gained good convergent and discriminant validities, and they have shown unique variance beyond neuroticism and global self-esteem (Blom et al., 2011; Johnson, 2011; Johnson & Blom, 2007).

2.2.2. Negative affect

Negative affect was measured by five items from the negative affect subscale of the Positive and Negative Affect Scale (PANAS; Watson, Clark, & Tellegen, 1988). The response format for all scales in the study was a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

2.3. Procedure

The patients completed the questionnaires in a quiet environment after attending the National Insurance Agency for their routine interview. The healthy controls completed the questionnaires at home or at their workplaces. All participants gave informed consent and all procedures of data collection were carried out in accordance with Declaration of Helsinki, to insure the patients' integrity and privacy. The study was conducted independently of the Swedish National Insurance Agency.

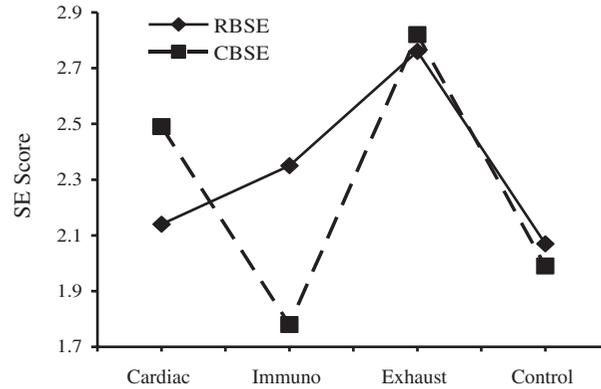
2.4. Statistical analysis

A mixed model analysis of variance and a discriminant analysis (Klecka, 1980) were employed to compare the contingent self-esteem structures between the patient groups and healthy controls. Data analysis was conducted using IBM SPSS version 21.0.

3. Results

In the present study, Cronbach's alpha for CBSE was .82, for RBSE .81, and for negative affect .72. As gender, age, and ethnicity were not significantly ($p > .05$) related to either type of contingent SE, they were not considered in further analyses. Negative affect correlated significantly with both CBSE ($r = .29$, $p < .05$) and RBSE ($r = .37$, $p < .01$) and was, therefore, controlled in the analysis of variance.

Figure 1. CBSE and RBSE as a function of patient group.



3.1. Analysis of variance

A mixed model ANOVA, with self-esteem type (CBSE, RBSE) as a within-participant factor and group (cardiac, immunological, exhaustion, controls) as a between-participants factor, was performed. The results (Wilks' Lambda) showed a statistically significant effect within the groups $F_{1,117} = 5.20, p < .05$, partial $\eta^2 = .07$, a significant effect between the groups $F_{3,117} = 15.71, p < .0001$, partial $\eta^2 = .31$, and a significant interaction between self-esteem type and patient groups $F_{3,117} = 9.45, p < .001$, partial $\eta^2 = .12$. Figure 1 shows the within and between group differences in CBSE and RBSE.

Subsequent post hoc tests (Tukey HSD, $p < .05$) revealed that both cardiac ($M = 2.49, SD = .42$) and exhaustion patients ($M = 2.82, SD = .54$) reported significantly higher CBSE than immunological patients ($M = 1.78, SD = .51$) and healthy controls ($M = 1.99, SD = .47$). These tests showed further that exhaustion patients ($M = 2.76, SD = .68$) reported significantly higher RBSE than cardiac patients ($M = 2.11, SD = .48$) and healthy controls ($M = 2.07, SD = .58$). Further, the immunological group reported higher RBSE ($M = 2.35; SD = .41$) than the control group and the cardiac group. Paired *t*-tests were conducted to examine differences between RBSE and CBSE scores within the groups. These analyses showed that immunological patients' RBSE was significantly higher than their CBSE, ($t_{24} = -5.61, p < .001$) whereas cardiac patients' CBSE was significantly higher than their RBSE ($t_{31} = 3.18, p < .01$). The within group differences in CBSE and RBSE were not statistically significant ($p > .05$) in the exhaustion (both high) and control groups (both low).

3.2. Dimensional analysis

The scores of the constituent components of RBSE Scale (SE contingent upon love, fear of rejection, compliance) and CBSE Scale (SE contingent upon competence, self-criticism) were submitted to a discriminant analysis to determine whether the group membership could be predicted from the participants' SE profiles.

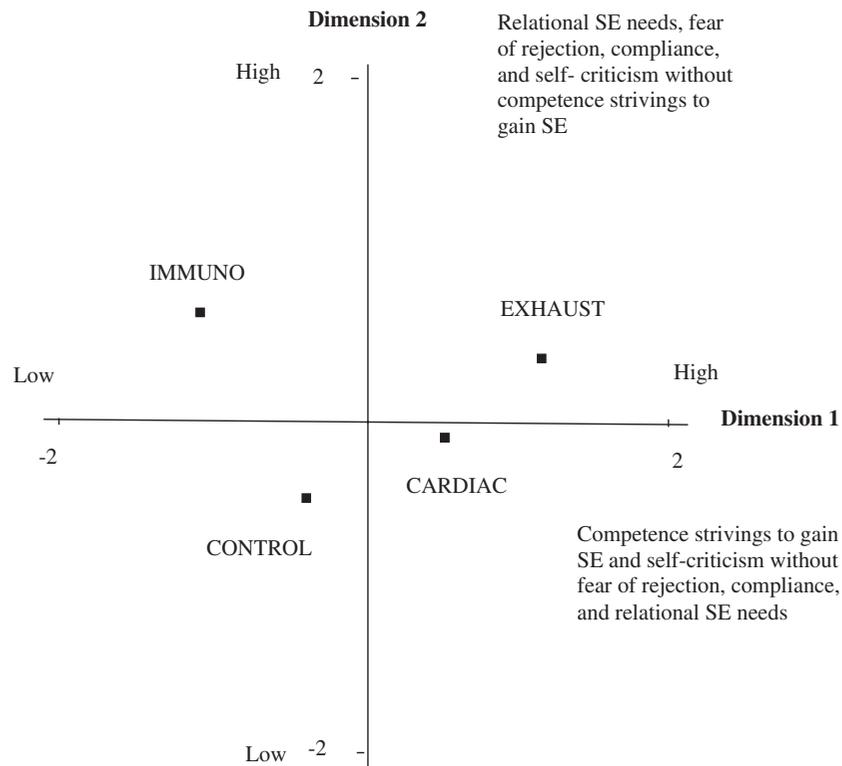
Table 1 shows standardized canonical discriminant function coefficients and pooled within-groups structure coefficients for discriminant analysis on the four groups (Tabachnick & Fidell, 2006). The

Table 1. Standardized canonical discriminant function coefficients and pooled within-groups structure coefficients for discriminant analysis of the four groups

Variable	Function coefficients		Structure coefficients	
	Function		Function	
	1	2	1	2
Conting. comp	1.78	-.68	.90	-.37
Self-criticism	.53	.39	.78	.54
Conting. love	-.21	.40	-.28	.36
Compliance	.16	1.03	.18	.87
Fear of rejection	-.14	.58	-.31	.61

Notes: Conting. comp = SE contingent on competence; Conting. love = SE contingent on love.

Figure 2. Positions (group centroids) of the patient groups and healthy controls in the two discriminant dimensions, comprising constituents of the CBSE and RBSE scales.



analysis yielded two significant dimensions, i.e. classification functions, which separated the groups from each other. The character of the dimensions is detailed in Table 1. Function 1 ($\chi^2 = 65.23$, $p < .001$), explaining 78% of the variance, was strongly and positively associated with SE contingent on competence and self-criticism but weakly or negatively associated with compliance, fear of rejection, and relational SE contingency. Function 2 ($\chi^2 = 18.75$, $p < .01$), explaining 17% of the variance, was substantially and positively associated with high compliance and fear of rejection and moderately to high self-criticism but negatively associated with SE contingent on competence. There were no violations of the assumptions of multivariate normality or homogeneity of variance-covariance matrix. Mahalanobis D^2 s showed that there were no outliers within the groups.

The positions of the groups (group centroids) in a multidimensional space are plotted in Figure 2. The psychological content of Dimension 1 and Dimension 2 is described in terms of the characteristics of the classification functions in Table 1. Figure 2 shows that the patients suffering from exhaustion syndromes showed a stronger tendency to self-critical self-esteem strivings by competence (Dimension 1) as compared to the immunological group and control group. The exhaustion group also showed higher fear of rejection and compliance (Dimension 2) coupled with self-criticism as compared, in particular, to healthy controls. Moreover, Figure 2 shows that the immunological group displayed a higher position in fear of rejection and compliance than the other groups, in particular healthy controls. The cardiac group's position reveals a higher need of self-critical competence strivings, to be valued, but lower compliance and fear of rejection than the position of the immunological group.

4. Discussion

The results concerning cardiac/tension patients emphasizes the competitive and critical attitude and high demands toward oneself, precipitating coronary proneness and tension syndromes (Blom et al., 2011; Higgins et al., 1992; Smith et al., 2012). Their self-esteem seems more attached to performing well than to emotional security, indicating that a backdrop for these conditional strivings may be the self-validation patterns arising from early socialization experiences (Deci & Ryan, 1995; Johnson & Blom, 2007). It appears that even people suffering from fibromyalgia or burnout exhibit

the same demanding and self-critical attitudes as those suffering from cardiac/tension complaints, but they also need relational reassurances to feel valued (Nolen-Hoeksema & Jackson, 2001). Striving for acceptance in both work and relational areas of life may explain the fatigue and diffuse pains they experience. However, it should not be ruled out that depressive states, associated with both conditional self-value (Blatt et al., 1993; Johnson, 2010) and exhaustive syndromes (Johnson et al., 1997), might as such precipitate these symptoms. Moreover, that fibromyalgia and burnout are traditionally more prevalent in females than heart disease may mirror different kinds of responsiveness to stress than that of males (Lash, Gillespie, Eisler, & Southard, 1991; Nolen-Hoeksema & Jackson, 2001). A potential moderator of stress response could be the relational self-esteem concerns of exhaustion patients, providing social support (Johnson, 2010; Priel & Shahar, 2000).

The results concerning the group classified as immunological patients, suffering from asthma, rheumatoid arthritis, or cancer, were in line with previous research (Blatt et al., 1993; Johnson, 2011; Klinnert, 2003; Luecken & Compas, 2002; Walker et al., 1999). Clearly, the self-esteem concerns of people suffering from immunological types of disease appear more relation oriented, mirroring fear of rejection and compliance, than competence oriented and demanding. Indeed, Johnson et al. (1997) showed that of pain patients, those with fibromyalgia, but not those with rheumatoid arthritis, display high competence-dependent self-esteem. In addition, in their study, rheumatic patients exhibited particularly low self-assertiveness. In the present study, this was further indicated by the dimensional analysis performed on the sub-factors of the two contingent self-esteem scales. The results of this analysis show that the immunological group was clearly separated from the other patient groups by an utterly low position in the dimension mirroring competitive self-esteem striving and the highest position in the dimension mirroring rejection sensitivity and compliance.

The particularly low level of CBSE, reported by the immunological patients, may signify early founded patterns where relational and emotional acceptance is decisive for one's perceived self-value (Mikulincer, Gillath, & Shaver, 2002). This kind of relational dependency may lead to emotion suppression, conflict avoidance, and denying one's own needs, known to precipitate immunological disease (Blatt et al., 1993; Johnson, 2011; Petrie et al., 1998). On first glance, it seems paradoxical that the immunological patients showed even less competence needs for gaining self-esteem than healthy controls. However, it may reflect the disadvantage of the overly passive and non-assertive mode, typical of immunological vulnerability (Blatt et al., 1993); even though an excessive competence orientation can damage health, a complete lack of this active drive might not be optimally adaptive (see also Johnson et al., 1997). Though the results from the immunological group, with the seemingly most heterogeneous disease profile, need to be interpreted with forethought, they nonetheless conform to earlier findings that suggest that the onset and progression of cancer and rheumatoid arthritis are linked to passive coping, relational losses, and emotional difficulties (Solomon, 1981; Walker et al., 1999).

Overall, the present results revealed a systematic pattern of relations between self-esteem structures and different types of disease that are in line with the present hypotheses and previous findings. However, the results should be considered tentative and interpreted with caution. No causal links can be inferred based on this cross-sectional study. In particular, patients with cancer or rheumatism may, at least momentarily, detach themselves from achievement-related concerns, preferring emotional security. It should also be kept in mind that contingent self-esteem is not directly related to disease but is considered an underlying motivational factor whose potential effects on health are mediated by social behaviors and attitudes triggered by self-relevant context (see Johnson, 2011). In this respect, the contingent self-esteem structures are considered to filter and modulate responses to congruent social threats and, in the long term, facilitate the translation of stressors to different physiological responses (Cole et al., 1998; Kemeny, 2009). In addition, there may be common physiological and genetic underpinnings of both personality and illness (Ekselius, Bengtsson, & von Knorring, 1998; Svedberg et al., 2014). However, as this study focuses on self-esteem structures and their motivational and behavioral implications for differential vulnerability, the biological aspects of personality are outside the scope of the present paper.

One methodological limitation in the present study is that the groups examined were relatively small. Moreover, due to practical reasons, the time available for recruitment of patients to the present study contributed to limited gender balance of participants. Though some of the included diseases are more prevalent in women, this limits the validity of the overall results to mostly female patient populations. In forthcoming research, the tentative findings of the present study should be examined further using larger gender-balanced patient groups and a longitudinal design.

To conclude, the distinctive patterns of relations found between two types of contingent self-esteem and patient groups with cardiac, immunological, and exhaustive complaints potentially shed light on the health relevance of habitual behaviors, adopted to maintain self-esteem in daily interactions. For understanding psychosocial implications of differential coping and health processes, it is important to elucidate the role of cognitive-motivational patterns, underlying our daily behaviors. This knowledge suggests tools for prevention and rehabilitation practices to modify unhealthy modes of behavior in patients. Cognitive behavioral therapy is needed to adjust cognitive motivational structures and habitual behaviors. However, as the active resentful and passive self-repressive behaviors are considered to arise from the individual's need of self-validation (Johnson, 2011), it is equally crucial to increase peoples' basic self-acceptance via acceptance-oriented therapies, such as mindfulness. As the core of vulnerability is the automatic nature of the behaviors, the counseling should entail responding with awareness to one's daily circumstances rather than just habitually reacting to them (Bargh & Williams, 2006; Logan, 1988). Further research is encouraged to address psychosocial behaviors' role for differential health.

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Competing Interests

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