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Title

Is nurses' self-esteem interwoven with patients' achievements? The concept of patient-

invested contingent self-esteem

Running head

Nurses' self-esteem & patients' achievements

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ABSTRACT

Objectives. To explore the notion of Patient-invested Contingent Self-Esteem (Pa-CSE) and

investigate its association to nurses' self-reported engagement in controlling or autonomy-

supportive interactions with chronic care patients.

Background. Considering the high number of patients sub-optimally managing their chronic

condition, nurses might experience a drop and rise in self-worth when patients fail and

succeed, respectively, in managing their chronic condition. This dynamic has not received

prior research attention.

Design. Multivariate analysis employing cross-sectional data according to STROBE guidelines.

Methods. Self-reports among nurses employed in chronic care (*N*=394) from eight randomly selected hospitals in Belgium. Exploratory factor analysis and stepwise linear regression analyses were conducted.

Results. Success-based and failure-based orientations could be distinguished and refer to nurses' tendency to associate, respectively, patients' successes with feelings of professional success and self-worth and patients' failures with feelings of professional failure, shame, and inadequacy. Nurses' self-esteem is fairly interwoven with patients' achievements in the management of their chronic condition. A success-based orientation was positively related to autonomy-supportive care in case a failure-based orientation was low. Nurses with a simultaneous success-based and failure-based orientation interacted in a more controlling way.

Conclusions. The findings of this study suggest that basing one's self-worth on patients' accomplishments may be a double-edged sword. Although tying one's personal glory to the successes of one's patient is related to greater patient participation and support of autonomy, these effects only emerge if nurses' self-worth is not interwoven with patients' failures. In fact, having both success- and failure-oriented contingent self-worth is related to a more pressuring approach.

Relevance to clinical practice. To prevent nurses from developing inferior professional feelings when their patients fail to manage their condition, a reflective stance towards the impact of patients' behaviour on the nurses' professional feeling of (in)adequacy is an important step to deal with such situations.

KEY WORDS

Care relationship, chronic condition, contingent self-esteem, nursing, patient-invested contingent self-esteem, Pa-CSE, professional self-esteem, Self-Determination Theory, self-management.

WHAT DOES THIS PAPER CONTRIBUTE TO THE WIDER GLOBAL CLINICAL COMMUNITY?

- A nurse-patient dynamic that most, if not all, nurses can relate to is the tendency to let their professional self-worth depend upon patients' achievements in managing their chronic condition.

- Basing one's professional self-worth upon patients' accomplishments may be a double-edged sword.

- This dynamic of fragile self-worth may yield a mixture of costs and benefits, both for the nurse and patient.

INTRODUCTION

Nurses are known to be at risk for the negative effects of a stressful workplace (Mark & Smith, 2012; Sarafis *et al*., 2016). Potential work-related stressors include the patient's suffering or death, high workloads, conflicts in interdisciplinary collaborations, and challenging situations with patients or their family. Daily exposure to work-related stressors might affect nurses' mental health, such as their self-esteem and feelings of inadequacy (Sarafis *et al*., 2016).

One such challenging patient situation is the non-adherent behaviour of patients. It is estimated that over 50% of patients living with a chronic illness are non-adherent with the lifestyle advice and instructions they receive (WHO, 2003). Although not the most appropriate perspective (Huber *et al*., 2011), adherence is often treated as an important behavioural indicator to evaluate patients' success in managing their chronic condition. Qualitative research indicates that nurses also rely on their patients' (non)adherent behaviour to benchmark their own professional success (Been-Dahmen *et al*., 2015; Lelorain *et al*., 2017). These interview studies revealed that nurses felt more successful when patients successfully managed their chronic condition. Instead, when nurses focused on patients' mistakes or failures, they admitted feeling themselves inadequate and, in some, way failed. Although informative, there is a paucity of quantitative studies that examine the relationship between patients' achievements and nurses' professional self-esteem. The psychological notion of contingent self-esteem, as defined within Self-Determination Theory (Deci & Ryan, 1995; Ryan & Brown, 2006; Kernis *et al*., 2008), provides a theory-driven inroad to study the dynamic between nurses' professional self-esteem and patients' achievements in managing their chronic condition.

BACKGROUND

Contingent self-esteem (CSE) involves the tendency to validate one's self-esteem upon one's effort-expenditures and obtained accomplishments (Deci & Ryan, 1995; Ryan & Brown, 2006). When contingent, individuals' self-esteem becomes heavily interwoven with their accomplishments or lack thereof. Because rises and falls in one's self-esteem vary with, respectively, one's successes and failures, one's contingent self-esteem is highly fragile (Kernis, 2003). To illustrate, being successful through achieving a specific target at work may boost one's self-esteem, whereas the failure to do so would entail a drop in one's self-esteem. Individuals can value their self-esteem in diverse life domains, including the domain of work (Blom, 2012).

Interestingly, individuals' self-esteem might not only be contingent upon their own accomplishments but also upon the accomplishments of others. It seems very natural for individuals who find themselves in a socializing and motivating role towards others, such as teachers, parents, sport coaches, and healthcare providers, to validate their self-esteem upon the successes and failures of those being motivated and socialized (*e.g.,* pupils, children, sportsmen, and patients; Deci & Ryan, 1995). Such a dynamic may also apply to nurses, who try to motivate patients living with chronic conditions towards self-management and who develop a supportive, and often long-lasting professional relationship with these patients. Consistent with prior conceptualizations in other life domains, such as parenting (Wuyts *et al.*, 2015), we define patient-invested contingent self-esteem (Pa-CSE) as nurses' inclination to validate their professional self-esteem in terms of success or failure of their patients' chronic condition management. It reflects the extent to which nurses' sense of professional self-esteem becomes interwoven with and dependent upon their patients' achievements in the

management of their chronic condition. The more their professional self-esteem is patient-contingent, the more it will peak when their patients put effort in and are successful in the management of their chronic condition. By contrast, when patients fail to successfully handle their chronic condition, nurses with high levels of Pa-CSE would experience a drop in self-esteem, possibly resulting in feelings of professional failure (Deci & Ryan, 1995).

Nurses with elevated Pa-CSE are at risk to approach their patients through a tunnel perspective. Because patients' accomplishments and the lack thereof may backfire on their own self-worth, they may perceive more difficulties to adopt the patients' frame of reference, thereby supporting their needs, preferences and perspective. Rather than acting in an autonomy-supportive way, nurses high in Pa-CSE may start to pressure patients, especially when patients face failure or fail to make sufficient progress. While autonomy-supportive care involves curiously exploring obstacles that prevent patients from making progress, a controlling approach involves being demanding and even domineering, such that patients feel forced to act, think, and behave in certain ways (Duprez *et al*., 2019). Initial evidence for this link comes from studies in the parenting domain. Parents with higher child-invested contingent self-esteem reported adopting a more pressuring and domineering attitude towards their child (Ryan & Deci, 1995; Wuyts *et al*., 2015). Such a domineering interaction may be perceived, albeit not necessarily consciously, as a fast and cost-efficient way to prompt extra effort and eventually promote greater achievement. However, evidence has noted that a controlling parent-child interaction leads to unfavourable developmental outcomes of children, such as fragile self-esteem or feelings of incompetence (Wang *et al*., 2012).

Considering the high number of patients who sub optimally manage their chronic condition (WHO, 2003), nurses are at risk to let their own professional self-worth depend on patients' failures. The present study sought to validate the notion of patient-invested contingent self-esteem (Pa-CSE) among nurses supporting patients towards self-managing their chronic condition and to investigate its association to nurses' self-reported engagement in controlling or autonomy-supportive interactions with chronic care patients.

METHODS

Design

A multivariate analysis employing cross-sectional data. The design and reporting of this study followed the STROBE guidelines for cross-sectional research (von Elm *et al*., 2007; See Supplementary File 1).

Sample

The study used a sample of qualified nurses from eight randomly selected hospitals in Belgium. Nurses were eligible to participate if *(1)* they worked on an internal medicine ward (for example, nephrology or cardiology) or outpatient ward; and *(2)* at least 50% of their job time was spent in the care for people with a chronic condition. To test the factor structure with stable covariation among the items, approximately 300 respondents were recommended (Polit & Beck, 2017). Additionally, the sample size for the regression analysis was determined as 133, considering a significance level of 0.05, an effect size of 0.10 (medium effect) and a statistical power of 95% (GPower software). Considering a response rate of 60% for surveys among healthcare professionals (e.g., Aiken *et al*., 2013), a minimum of 500 nurses needed to be invited to participate.

Hypotheses testing

Based on the body of knowledge in parenting (Ryan & Deci, 1995; Wuyts *et al.*, 2015), we hypothesized that the concept of Pa-CSE would demonstrate a single-factor structure (hypothesis 1). Furthermore, we hypothesized that Pa-CSE is related to the self-reported engagement in controlling or autonomy-supportive interactions with chronic care patients. In line with evidence that self-esteem depending on the accomplishments of others is an internally pressuring factor that may come with a more controlling interaction and leave little room for autonomy (Grolnick, 2003), it is expected that Pa-CSE would relate positively to controlling interactions (hypothesis 2) while being unrelated or even negatively related to autonomy-supportive interactions (hypothesis 3).

Data collection

Procedure

The data were collected between February 2016 and May 2017 using self-reporting paper questionnaires. Eligible nurses received a bundle of self-report questionnaires. Head nurses were verbally informed about the study purpose and format. Participants provided their written consent after being informed on the purpose, anonymity, confidentiality and voluntary participation. Ethical approval was obtained from central and local ethical review committees (B670201526759, B670201526388, B670201422381).

Measures

Patient-invested contingency of self-esteem

The newly developed Patient-invested Contingency of Self-Esteem (Pa-CSE) scale was used to assess the extent to which nurses' professional self-esteem is dependent upon their patients' achievements in chronic condition self-management in particular. The scale consists of 12-items, with a five-point Likert scale ranging from totally disagree *(0)* to totally agree *(4)*. Briefly, the scale was patterned after the child-invested contingent self-esteem scale (Wuyts *et al.*, 2015). Face validity was attained during a two-round procedure by experts (*N*=7) carefully considering the items on their alignment with the concept of contingent self-esteem and the concept of self-management. Clarity and wording ambiguity were pilot-tested among nurses. Construct validity was demonstrated to be good with an expected moderate divergent validity with the nurses' level of self-esteem (*r* = -0.22, p < 0.01) and convergent validity with nurses' contingency of self-esteem (*r* = 0.24; p < 0.01). Reliability was indicated to be strong by a Cronbach's alpha of 0.86 and a test-retest reliability of 0.88 (95% CI = 0.68-0.95; *p* < 0.001).

Controlling & autonomy-supportive interactions

An adjusted version of the Psychological Control Scale (PCS) (Barber, 1996; Van der Kaap-Deeder *et al.*, 2014) and Health Care Climate Questionnaire (HCCQ) (Williams *et al.*, 1996; Van der Kaap-Deeder *et al.*, 2014) was used to assess whether nurses tend to control or support the patients' autonomy. The items were adjusted to the professional's perspective. For example, "my healthcare professionals are less friendly with me if I do not see things their way" became "I am less friendly to patient's when they do not see things my way". The original Dutch scales, from the professional's perspective, demonstrated good internal consistency and convergent validity (Van der Kaap-Deeder *et al.*, 2014).

Data analysis

Incomplete questionnaires were excluded for analysis (N=25). Questionnaires with repetitive response patterns were removed (N=3) to minimize acquiescence response bias. First, the internal structure of the concept was assessed by principal component analysis and Varimax rotation method with Kaiser normalization to extract the scale's components. Factor loadings needed to be above 0.40, the Kaiser-Meyer-Olkin (KMO) over 0.50, and Bartlett's test of sphericity needed to be significant (Mortelmans & Dehertogh, 2008). The number of components was determined by the scree plot, with eigenvalues > 1, and by an explained variance of > 5% (Mortelmans & Dehertogh, 2008). Pearson correlation coefficients were calculated to test the hypotheses. Additionally, to test for the association with nurses' interaction style, stepwise linear regression analyses were conducted separately for control and autonomy-support as dependent variables. First, background characteristics with a significant univariate difference were entered. Second, the components and their interaction term were entered. To calculate the interaction term, the two components were z-scored and multiplied. The interactions were graphically displayed according to Dawson (2014). Analyses were performed using SPSS® 23 (SPSS Inc., Chicago, IL, USA). The threshold for statistical significance was set at $\alpha \leq .05$.

RESULTS

Sample characteristics

In total, 394 nurses participated (response rate 60.6%). Most of the participants were female (84.4%), bachelor's degree educated (65.3%), and had less than ten years of work experience (47.8%). Further details are displayed in Table 1.

Internal structure of Pa-CSE

Sample adequacy to perform the factor analysis was confirmed by the KMO test (0.84) and Bartlett's test of sphericity (χ^2 = 924.29; df = 105; p<0.001). The scree plot and principal component analysis provided evidence for a meaningful two-component solution within the concept of Pa-CSE and explained 52.59% of the variances in the responses. The first component (eigenvalue: 3.46; explained variance: 27.53%) can be interpreted as a success-based orientation and denotes the extent to which nurses value their feeling of professional self-esteem and success with patients' successes in their chronic condition management - for example, "when my patients are successful in the management of their condition, I feel good about myself". Factor loadings for this component ranged between 0.64 and 0.84. The second component (eigenvalue: 3.38; explained variance: 25.06%) can be interpreted as a failure-based orientation and refers to nurses' tendency to associate their feelings of professional failure, shame, and inadequacy with patients' failure in the management of their chronic condition - for example, "It means a failure to myself as a nurse, if patients do not adequately manage their condition". Factor loadings for this component ranged between 0.69 and 0.80. A single component solution (eigenvalue: 5.14) explained 42.84% of the variance in the responses. Factor loadings for the one-factor solution ranged between 0.52 and 0.72. Such a general component means that nurses relate their professional self-esteem to patients' achievements, disregarding success or failure.

Nurses' patient-invested contingent self-esteem

The means of the general, success-based, and failure-based orientations for Pa-CSE were 2.83 (*SD* 0.60), 3.51 (*SD* 0.69), and 2.23 (*SD* 0.71), respectively [range 0-4]. A significant mean difference was found between the failure-based and success-based orientations

(t = -25.04; df = 229, *p* < 0.001). A higher score reflects a higher level of Pa-CSE, indicating that nurses align their professional self-esteem more with their patients' successes than their failures.

Hypothesis testing

Table 2 provides an overview of the correlations between nurses' self-reported contingency of self-esteem and their self-reported interaction style while supporting patients' self-management. A mixed pattern of correlations between nurses' Pa-CSE and their autonomy-supportive and controlling interactions with patients was obtained (see Table 2). Whereas the failure-based orientation of Pa-CSE related positively to controlling interactions, both the success-based orientation and general orientation were unrelated (hypothesis 2). An opposite pattern of correlates was found for autonomy-supportive interactions. Whereas the general orientation and success-based orientation were positively related to autonomy-supportive interactions, the failure-based orientation was unrelated (hypothesis 3).

For the stepwise regression analysis, because none of the background characteristics had a significant univariate relationship with a controlling interaction style, there was no need to control for background characteristics as a first step. The two components of Pa-CSE and their interaction were entered in the model. Whereas neither the success-based orientation (β = 0.04; *ns*) nor the failure-based orientation (β = 0.14; *ns*) were related uniquely to a controlling interaction style, the interaction between both appeared significant (β = 0.19; *p* = 0.04). To inspect the nature of this interaction, the unstandardized regression coefficients were plotted. As noted in Figure 1, when nurses scored simultaneously high on the success-based and failure-based orientations, they reported being more controlling towards patients.

Regarding the autonomy-supportive interaction style, solely the background characteristics of providing patient consultations revealed a significant univariate relationship with autonomy-support ($p = 0.04$). Thus, after controlling for patient consultations, in a first step, the two components of Pa-CSE and their interaction were entered in a second step. Unlike the success-based orientation ($\beta = 0.24$; $p = 0.01$), the failure-based orientation ($\beta = 0.07$; *ns*) was unrelated to an autonomy-supportive interaction style. Similar to the controlling interaction style, the interaction term was also significant ($\beta = -0.24$; $p = 0.01$). As noted in Figure 2, the success-based orientation was *only* related to an autonomy-supportive interaction style in case nurses scored low on the failure-based orientation, indicating that the failure-based orientation attenuates the positive contribution of the success-based orientation.

Figure 1 Significant two-way interaction between Pa-CSE success-based and failure-based orientation in the association to controlling interactions

Figure 2 Significant two-way interaction between Pa-CSE success-based and failure-based orientation in the association to autonomy-supportive interactions.

DISCUSSION

Nurses are often confronted with patients managing sub optimally their chronic illness, which might affect nurses' feelings of professional (in)adequacy. This study is a first step to explore the concept of patient-invested contingent self-esteem (Pa-CSE) among nurses supporting patients self-managing their chronic condition.

In general, the fairly high scores on both the general and two orientations indicate that nurses' self-esteem is interwoven with patients' achievements. This is not surprising because nurses spend considerable time with patients and their task is to help improve or stabilize patients' chronic health condition (van Hooft *et al.*, 2016). Previous research, in the parent-child relationship, has indicated similar levels of parents' tendency to hinge their self-esteem upon their child's achievements (Wuyts *et al*., 2015). The success-based orientation captures nurses' tendency to value feelings of self-esteem and professional success upon their patients' successes in managing their chronic condition. In practice, a higher score denotes nurses' tendency to rely on patients' capacity to successfully manage their chronic condition management to evaluate themselves more positively. In the case of the failure-based orientation, nurses become more heavily focused on patients' mistakes and failure, leading them to evaluate themselves more negatively, as manifested by elevated feelings of professional failure, shame, and inadequacy. A higher score means that nurses will relate their professional self-esteem more to patient's failures. Their professional self-esteem is influenced when their patients appear unable to adhere to prescribed regimes and handle their chronic condition management in a less adequate way, a rather large number of patients in chronic care (WHO, 2003).

The two-dimensional orientation in this study provided a more fine-grained insight into the concept (hypothesis 1). Indeed, the dynamics involved in the success-oriented and failure-oriented contingent self-esteem may be fairly different as shown through their differential relation with nurses' way of supporting their patients towards self-management (hypothesis 2 and 3). At the correlational level, the success-based orientation related positively to autonomy-supportive interactions, whereas the failure-based orientation positively to

controlling interactions. A cautious interpretation of both correlations is needed, as even a modest relationship might be statically significant within large samples (Polit & Beck, 2017). The more informative 95% CI on precision (see Table 2) indicates that the degree of both of these correlations might vary considerably when drawn in another random sample of the population. When explored in greater depth through the interactive contribution of the success- and failure-based orientation, a more nuanced picture emerges, signalling that Pa-CSE serves as a double-edged sword. Specifically, the success-based orientation was only related to a more autonomy-supportive interaction in case nurses also had a low level of failure-based Pa-CSE. Said differently, when nurses are more likely to feel inadequate when their patients fail, the success-based orientation no longer goes along with a more autonomy-supportive approach. In addition, when the professional self-esteem of nurses is more likely to be interwoven with patient's achievements in general - where both successful patients might boost and unsuccessful patients might decrease nurses' professional self-esteem - they reported being more controlling towards patients. Thus, especially the failure-based orientation seems to come with some risks.

These results are not completely aligned with previous research, which found that child-invested parental contingent self-worth was related to the use of a more controlling approach towards others (Wuyts *et al*., 2015; Soenens *et al*., 2015). Several explanations can be provided for this inconsistency. First, the distinction between a success-based and failure-based orientation may account for the differential effects. Wuyts *et al.* (2015) limited themselves to a composite score, thereby masking potential differential effects of both subcomponents as observed herein. Second, the nature of the patient-professional is different from the child-parent relationship. Although nurses may build a long-lasting relationship with

at least some patients, this relationship might be less intensive and less sustainable. Moreover, parents are involved in a dyadic relation with their child and have a blood bond. Such differences may explain why parents' tendency to hinge their self-esteem upon their children's achievements may translate in a greater risk for the adoption of a more controlling and domineering approach.

Limitations

The response rate of 60.6% could have introduced a non-response bias, in favour of nurses more interested in the topic under study. The self-reporting might have introduced a certain social desirability response tendency (Polit & Beck, 2017); however, this could not be avoided to measure the inner-personal notion of contingent self-esteem. The self-reports might not fully depicture the real healthcare climate as perceived by patients. Additionally, the observed associations might be related to common-method variance (Richardson *et al*., 2009). Generalizability of the results is limited by the national character of the study and by the cross-sectional design because the study was merely based on a single-point measurement. Future research can be situated at three levels. First, the rewarding mechanism of Pa-CSE, its two-dimensionality and the underlying processes of how nurses define being successful in supporting patients towards self-management are worthwhile to explore in depth using qualitative research. Second, it might be worthwhile to explore cross-cultural differences in Pa-CSE because societies and cultures do differ in the values they pursuit (Wuyts *et al.*, 2015). Third, a study among multi-disciplinary samples might reveal if other healthcare professionals bolster their professional self-esteem upon patients' achievement within self-management support.

CONCLUSION

This study focused on a nurse-patient dynamic that most, if not all, nurses can relate to - that is the tendency to let their own self-worth depend upon patients' achievements in managing their chronic condition. Although natural, this dynamic of fragile self-worth may yield a mixture of costs and benefits. To the extent nurses focus on patients' mistakes and evaluate themselves more negatively in the case of patient failure, they are more likely to rely on a controlling approach in self-management support towards patients. On the positive side, to the extent nurses focus more on patients' accomplishment as a source of self-worth, they adopted a more autonomy-supportive stance, however, only when their failure-based orientation was minimized.

RELEVANCE TO CLINICAL PRACTICE

The present findings indicate that, for nurses high on contingency of self-esteem, especially high on the failure-based orientation, it may be of utmost importance to adopt a reflective stance towards patients' achievements. Presumably, nurses high on this orientation more easily feel responsible when patients do not adequately manage the prescribed regimen, which bolsters their feelings of guilt, shame and inadequacy. Raising awareness about this dynamic of a failure-based orientation and discussing in greater detail when nurses' responsibility ends and patients' commitment comes into play may be critical to prevent negative job consequences, such as stress, rumination, and burnout (ter Maten-Speksnijder *et al*., 2012). The 12-item Pa-CSE scale can potentially be used as a reflective tool. Additionally, patients themselves may benefit when the failure-based orientation is minimized. In line with the study results, it can be expected that nurses become less directive and pressuring towards patients.

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Table 1 Sample characteristics (*N*=394)

Characteristic	N	(%)	Characteristic	N	(%)
Gender			Providing consultations		
Female	331	(84.4)	No	208	(77.6)
Male	63	(15.6)	½ day/week	12	(4.5)
Age (years)			1 day/week	3	(1.1)
<23	29	(7.3)	2-3 days/week	12	(4.5)
23-29	112	(28.5)	Daily	27	(10.1)
30-39	112	(28.5)	Missing values	6	(2.2)
40-49	80	(20.3)			
50-59	55	(13.8)	Caseload – patients living with (multiple responses)		
≥60	6	(1.6)	Diabetes	200	(74.6)
Educational degree			Chronic cardiac diseases	112	(41.8)
Vocational level[†]	87	(32.5)	Chronic pulmonary diseases	107	(39.9)
Bachelor's degree	175	(65.3)	Oncology pathology	95	(35.4)
Master's degree[‡]	6	(2.2)	Chronic renal diseases	72	(26.9)
Work experience (years)			Chronic vascular diseases	58	(21.6)
< 5	118	(29.9)	Neurologic diseases	20	(7.5)
5-10	70	(17.9)	Chronic psychiatric diseases	17	(6.3)
11-20	94	(23.9)	Rheumatologic diseases	12	(4.5)
>20	112	(28.3)	Other	22	(8.2)

[†] Vocational educational level is a three-year nurse training education at qualification level 5 of the European Higher Education Area; [‡] Academic Master's degree;   The nursing consultation is a moment - whether by appointment - in which the nurse is available to listen, talk and discuss with the patient. During this moment, information, advice, emotional support and guidance are provided. The consultation can be bedside or in a consultation room.

Table 2 Correlation between nurses' contingency of self-esteem and interactions with 95% confidence intervals

		1	2	3	4	5
1	**Pa-CSE general**	-				
2	**Pa-CSE success-based**	0.86 ** [0.78, 0.93]	-			
3	**Pa-CSE failure-based**	0.82 ** [0.76, 0.90]	0.44 ** [0.31, 0.49]	-		
4	**Autonomy-supportive interactions**	0.18 * [0.01, 0.27]	0.29 ** [0.04, 0.45]	- 0.12 [-0.19, 0.05]	-	
5	**Controlling interactions**	0.07 [-0.08, 0.21]	- 0.08 [-0.13, 0.10]	0.19 * [0.01, 0.24]	- 0.14 [-0.18, 0.24]	-

Pa-CSE = patient-invested contingent self-esteem; * The correlation is significant at the 0.05 level (2-tailed); ** The correlation is significant at the 0.01 level (2-tailed); Values between brackets indicate the 95% confidence interval for each correlation.