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Self-discrepancy, Depression, Anxiety, and Psychological Well-Being: The Role of Affective Style and Self-efficacy

Pascal Schlechter[1] · Jens H. Hellmann[2] · Nexhmedin Morina[3]

Abstract

Background Self-discrepancy theory posits that greater discrepancy between the actual and ideal self is related to dysphoria and greater discrepancy between the actual and ought self to anxiety. Despite both being transdiagnostically associated with psychopathology, differential effects of actual:ideal and actual:ought discrepancies have not been confirmed. There is further lack of knowledge about cognitive and affective factors implicated in the relationship between self-discrepancies and depression and anxiety. We therefore examined the relationship of actual:ideal/actual:ought discrepancies with depression, anxiety, and psychological well-being, and whether affective styles (concealing, adjusting, and tolerating) and self-efficacy emerge as mediators or moderators.
Methods Self-discrepancies were measured as discrepancies in the Big Five taxonomy of personality. Participants ($N = 596$) responded to the 10-item Big Five Inventory and ideal/ought versions of these traits, and measures of affective styles, self-efficacy, depressive and anxiety symptoms, and well-being.
Results Both self-discrepancies were positively associated with depression, anxiety, and negatively with well-being, self-efficacy, tolerating and adjusting. No differential effects of the two types of discrepancy emerged. The adjusting affective style and self-efficacy partly accounted for the relationships between self-discrepancies and the outcomes.
Conclusion Knowledge about affective adjustment and self-efficacy in counteracting putative negative emotional effects of self-discrepancies may inform intervention efforts.

Keywords Self-discrepancy theory · Affective style · Self-efficacy · Depression · Anxiety · Well-being

Introduction

Cognitive representations of the self refer to how individuals evaluate or perceive attributes that constitute the self (Baumeister, 1999). Self-discrepancy theory (SDT) posits that individuals possess three basic domains of self-representations that have an impact on motivational and affective behaviour (Higgins, 1987). The *actual* self is defined as one's perceptions of the attributes that one actually possesses, the *ideal* self is defined as an idealized version of oneself including one's aspirations, and finally the *ought* self represents a version of oneself one feels obligated to be as a sense of duty or obligation (Higgins, 1987). SDT postulates that perceived discrepancies between both the actual self and the ideal self (actual:ideal discrepancy) and the actual self and the ought self (actual:ought discrepancy) lead to emotional distress (Higgins, 1987). The nature of emotional distress resulting from perceived discrepancies is yet conceptualized to be different for the two types of discrepancies. Actual:ideal discrepancies should elicit dysphoric emotional vulnerability (sadness, disappointment, or depression) because they are associated with feelings of failure and the absence of positive outcomes. Actual:ought discrepancies should elicit anxious emotional vulnerability (worry or anxiety) because they are linked to apprehension and fear of punishment (Higgins, 1987).

Indeed, meta-analytical evidence suggests that perceived discrepancies are transdiagnostically associated with various aspects of psychopathology (Mason et al., 2019). However,

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the theoretically articulated differential effects of actual:ideal and actual:ought discrepancies could not be confirmed empirically (Mason et al., 2019). In contrast, actual:ideal discrepancy was more strongly related to both depression and anxiety compared to actual:ought discrepancy (Mason et al., 2019). Although cumulating evidence emphasizes the importance of self-discrepancies for numerous aspects of psychopathology, less is known about variables that might mediate or moderate the relationships between self-discrepancies and psychopathology (Dickson et al., 2019; Higgins, 1999; Mason et al., 2019). To discern such patterns, the present research investigates how affective styles and self-efficacy contribute to the relationships between self-discrepancies and depression, anxiety, and psychological well-being.

Emotion Regulation and Affective Styles

Maladaptive emotion regulation strategies have been identified as transdiagnostic key variable across several mental disorders (Aldao et al., 2010; Cludius et al., 2020; Gross et al., 2019). The above-mentioned meta-analysis called for an investigation of different aspects of emotion regulation as important variables implicated in the relationship between self-discrepancies and psychopathology (Mason et al., 2019). Indeed, some recent studies found selective moderation effects for actual:ought discrepancies and emotion regulation on anxiety symptoms (Gürcan-Yıldırım & Gençöz, 2022) and selective mediation effects of rumination on the relationship between actual:ideal discrepancies and depressive and anxious symptoms (Dickson et al., 2019). Altogether, research demonstrates that self-discrepancies may lead to unfolding negative emotional cascades that may require emotional regulation to maintain psychosocial functioning (Mason et al., 2019). In this regard, emotion regulation may play a mediating and/or moderating role in the relationship between self-discrepancies and psychopathology. Prior research has identified several styles of affect regulation, including concealing or avoiding emotions, readjusting or balancing emotions, and tolerating or accepting emotions (Hofmann et al., 2012).

Concealing describes a response-focused suppressive regulative strategy to conceal and avoid negative emotions (Hofmann & Kashdan, 2010; Totzeck et al., 2018). In line with regulatory focus theory (Higgins, 1997), concealing aligns with *prevention-focused* self-regulation as opposed to *promotion-focused* self-regulation. Recall that the former is defined as a self-regulation avoidant strategy that is sensitive to negative outcomes and associated with anxious agitation, whereas the latter is defined as a self-regulation strategy that is reactive to the absence of positive outcomes and therefore associated with dejection-related emotions, such as depression or dissatisfaction. Consequently, actual:ought

discrepancies may be especially prone to initiate concealing when individuals aim to avoid acknowledging failures of meeting duties, responsibilities, or obligations. This would align with the initial theoretical framework in which actual:ought discrepancies were conceptualized to evoke anxious emotions (Higgins, 1987). Empirical evidence indicates that individuals with anxiety disorders engage in more expressive suppression than individuals with affective disorders (D'Avanzato et al., 2013). However, in a clinical sample there were no differences between the concealing affective style when comparing individuals with anxiety and mood disorders (Totzeck et al., 2018).

Adjusting on the other hand describes the capability to modulate unfolding negative emotions and adjust according to the situational demands to maintain psychosocial functioning (Hofmann & Kashdan, 2010; Totzeck et al., 2018). Previous research found evidence that patients suffering from depressive disorder use reappraisal strategies as an adjusting strategy less frequently compared to patients suffering from anxiety disorders (D'Avanzato et al., 2013). Likewise, patients with affective disorders reported less affective adjusting than patients with anxiety disorders (Totzeck et al., 2018). Conflicting cognitive representations of desired versions of the self and the actual self should lead to emotional distress. This, in turn, should lead to a greater self-focus and greater difficulties adjusting to the unfolding emotional distress, which may contribute to the development or maintenance of depression or anxiety. Also, when individuals believe that they are too discrepant from their desired self, this may be especially problematic for individuals with a lower habitual tendency to respond with adjusting when faced with arising negative emotions (Hofmann et al., 2012). This may be because adjusting constitutes an antecedent-focused strategy that is applied in the early phase of the emotion regulation process (Hofmann et al., 2012). Thus, a combination of perceived high discrepancy and low levels of adjusting may be associated with high levels of depression or anxiety.

Tolerating is an acceptance-based affective style (Hofmann et al., 2012). Given that the ideal self and the ought self are desirable states, it may be difficult for individuals with high levels of self-discrepancy to maintain a tolerating or accepting attitude towards negative emotions resulting from these discrepancies. Both types of discrepancy may lead to a greater self-focus, which may instigate difficulties to maintain a tolerating and accepting attitude towards one's emotions (Dickson et al., 2019). Therefore, high levels of discrepancy may be associated with lower levels of tolerating, which, in turn, may increase emotional vulnerability. In a previous study, mindfulness mediation helped reduce the negative effects of actual:ideal discrepancies (Ivtzan et al., 2011). In this vein, tolerating may also be a protective factor, which could be reflected in a moderation effect. This aligns

with findings that depressed and anxious people encounter more emotion regulation difficulties (Hofmann & Kashdan, 2010). Accordingly, a combination of greater perceived discrepancy and low levels of tolerating arousing negative emotions may be associated with high levels of depression and anxiety.

Self-efficacy

Self-efficacy, defined as individuals' belief in their own capacity to exercise control over their functioning and over events that affect their life (Bandura, 1977), may also play a significant role in the relationship between self-discrepancy and psychopathology. Low self-efficacy is associated with both depressive (Sawatzky et al., 2012) and anxiety symptoms (Goldin et al., 2009), and mediates the effect of daily stress on mental health outcomes (Schönfeld et al., 2019). The nature of self-efficacy is future-orientated and goal directed (Bandura, 1977). Accordingly, self-efficacy may be severely undermined by self-discrepancies when individuals feel that they cannot operate in the world as they wish or feel obligated to. In this vein, discrepancies may be associated with a lower sense of agency, which in turn, can be debilitating for subsequent mental health. Specifically, self-efficacy determines initial decision making on whether to perform a specific behavior (Bandura, 1977). When individuals, however, believe that they cannot operate effectively enough as abstractly evinced in self-discrepancies, this may lead to passivity or avoidance resulting from a lower sense of self-efficacy. This, in turn, could contribute to depression and anxiety symptoms that both have been found to be associated with self-efficacy (Goldin et al., 2009; Sawatzky et al., 2012). Indeed, a previous study reported that a lower sense of agency explained the relationship between both actual:ideal and actual:ought discrepancies and purpose in life (Stanley & Burrow, 2015).

Present Study

In the present study, we examined the relationship of actual:ideal as well as actual:ought discrepancies with depression, anxiety, and psychological well-being. To elucidate more granulated aspects of these relationships, we further investigated whether affective styles (concealing, adjusting, and tolerating) and self-efficacy are implicated in these relationships as mediator or moderator variables. To define self-discrepancies in the present study, we focus on perceived discrepancies in the Big Five (extraversion, agreeableness, conscientiousness, emotional stability, and openness to experience) taxonomy of personality (Rammstedt & John, 2007). This framework was chosen because it operationalizes the core parts of individual's personality, and discrepancies perceived in these relatively stable traits

may be especially linked to mental health problems (Hayes & Joseph, 2003). Based on prior literature (Mason et al., 2019), we expected that both types of discrepancies would be associated with depression, anxiety, and well-being. We tested the affective styles (concealing, adjusting, and tolerating) competitively in a pathway model to examine whether they uniquely account for differential effects of actual:ideal or actual:ought discrepancies and our outcome variables. In addition, we tested moderation models to gauge potential effects of these variables beyond their main effects. Concerning our pathway models and the moderation models, we had no specific a priori hypotheses.

Methods

Participants and Procedure

The link to our study was disseminated via online panel provider Prolific Researcher (Palan & Schitter, 2018). The survey was open to all panel members fluent in English above 17 years of age. In total, $N = 596$ healthy individuals participated in the current study. Mean age was 24.83 ($SD = 7.15$) years and the majority of the participants were female (74%, n = 441). Of the participants, $n = 81$ indicated to have a graduate degree, $n = 158$ had a bachelor's degree, $n = 18$ had an associate degree (above high school education but below a bachelor's degree), $n = 126$ had some college education but no degree, $n = 204$ had a high school (or equivalent) degree, and $n = 9$ had no high school degree. Most participants ($n = 466$) were single or never married followed by being married ($n = 126$). The Ethics Committee of the University of Münster approved the study protocol. The survey material, the anonymized data, and R analysis code can be found in the OSF supplement at https://osf.io/c8d6j/?view_only=251c110274964d72927a9cbca669c7c7.

Measures

Self-discrepancy

Self-discrepancy was assessed using the 10-item Big Five Inventory (BFI-10; Rammstedt & John, 2007). The BFI-10 captures each Big Five facet (extraversion, agreeableness, conscientiousness, emotional stability, and openness to experience) with two items. One item per facet is reversely coded. The BFI-10 is a reliable and valid tool that is commonly applied to assess interindividual differences in the Big Five personality traits (Rammstedt et al., 2021). For all items, we used a 10-point rating scale with response options ranging from 1 ("Disagree strongly") to 10 ("Agree strongly"). For each item assessing the *actual* personality, we asked two additional questions to assess the ideal self

and the ought self (see OSF supplemental material). For example, we first asked "I am the type of person who is outgoing, sociable" to assess extraversion and quantify the actual self via this self-report. Next, participants were asked "I would really like to be the type of person who is outgoing, sociable" to have an estimation of the ideal self. Last, participant responded to the statement "I ought to be the type of person who is outgoing, sociable", which provides an indication of the ought self. For each item, we calculated a difference score subtracting the ideal self and the ought self from actual self scores, respectively. This way, we obtained new actual:ideal and actual:ought scores for each item. All items were coded in the direction that higher values indicate a higher discrepancy. In a next step, we calculated the sum of all actual:ideal ($\alpha = .52$; $\omega_{total} = .56$) and actual:ought ($\alpha = .58$; $\omega_{total} = .60$) items, to have one composite score for each type of discrepancy.

Affective Styles

Affective styles were assessed with the Affective Style Questionnaire (Hofmann & Kashdan, 2010) that consists of twenty items assessing three dimensions of affective styles. The first dimension describes a tendency to conceal or suppress affect and is labeled concealing (8 items, e.g., "I often suppress my emotional reaction to things"). The second subscale describes a general ability to adjust one's own affect to the situational demands and is coined adjusting (7 items, e.g., "I can get out of a bad mood very quickly"). The third subscale pertains to an accepting attitude toward emotions and is labelled tolerating (5 items, e.g., "It's ok if people see me being upset"). Items were rated on a on a 5-point Likert scale ranging from 1 ("not true of me at all") to 5 ("extremely true of me"). In the present study, internal consistencies were good for the concealing ($\alpha = .84$) and adjusting ($\alpha = .84$) subscales, and acceptable for the tolerating ($\alpha = .62$) subscale.

Self-efficacy

Self-efficacy was assessed with the General Self-efficacy Scale (GSES; Schwarzer & Jerusalem, 1995). The GSES measures optimistic self-beliefs about one's ability to cope with a variety of life demands. Respondents were asked to rate 10 statements on a 4-point scale, ranging from 1 ("not at all") to 4 ("exactly true"). An example item is "I can solve most problems if I invest the necessary effort". The internal consistency in the present study was good $\alpha = .83$.

Depression and Anxiety

Depression and anxiety symptoms were assessed with the Patient Health Questionnaire-4 (PHQ-4), which consists of four items on a four-point scale from 1 ("not at all") to 4 ("nearly every day"). Symptom endorsement of the last 2 weeks was assessed, enabling a brief measurement of core symptoms of depression ($\alpha = .83$) and anxiety ($\alpha = .86$) (loss of interest, depressed mood, anxiety, constant worries, Löwe et al., 2010).

Psychological Well-Being

Psychological well-being was assessed by applying the Scale for Psychological Well-being (SPWB, Ryff & Keyes, 1995). The 18-item SPWB covers six areas of psychological well-being: autonomy, self-acceptance, environmental mastery, personal growth, positive relations with others, and purpose in life. Items (e.g., "In general, I feel I am in charge of the situation in which I live.") were rated on a 6-point scale (1 = "strongly disagree" to 6 = "strongly agree"). In the current study, Cronbach's alpha was .83.

Analysis Procedure

Analyses were conducted in R (R Core Team, 2020). First, we calculated descriptive statistics and intercorrelations among all constructs. Further, we tested potential gender differences on all constructs. We also provide 95% confidence intervals around the Pearson correlation coefficients to compare the associations of actual:ideal and actual:ought discrepancies. In addition, we calculated total scores of the actual personality traits and correlated them with the other variables to have an indication of whether actual:ideal and actual:ought discrepancies are confounded with the *actual* personality values. Then, we tested the association of actual:ideal and actual:ought with the outcomes again while adjusting for *actual* personality scores to examine whether they still predict unique variance in the outcome variables. To further examine the relationship between self-discrepancy and depression, anxiety, and psychological well-being, we tested a pathway model that incorporated concealing, adjusting, tolerating, and self-efficacy as potential mediators of this relationship. To test differential effects of the different discrepancies on the outcomes, we tested these models separately for actual:ideal and actual:ought discrepancies, and for the three outcomes (depression, anxiety, and psychological well-being). Accordingly, we had six different single step multiple mediator models that we estimated with the lavaan package in R (Rosseel, 2012). To test whether indirect effects in our model were statistically significantly different from zero, we generated nonparametric confidence intervals using a bootstrap resampling procedure (Hayes, 2015). We generated 10,000 bootstrap resamples to estimate 95% confidence intervals (CIs) for the assessment of the indirect effect (Hayes, 2015). Given that gender was unequally distributed in our sample and gender differences were expected in our

sample, we adjusted for gender in our pathway models. Last, we tested moderation effects of actual:ideal and actual:ought discrepancies with concealing, tolerating, adjusting, and self-efficacy on depression, anxiety, and well-being.

Results

Descriptive Statistics and Intercorrelations

Table 1 depicts descriptive statistics of all constructs along with descriptive statistics separately for males and females. Females reported higher actual:ideal and actual:ought discrepancies. They further reported more depressive and

Table 1 Descriptive statistics for the entire sample and separately for males and females together with tests for group differences

	M	SD	M female	SD female	M male	SD male	t	p	Hedges' g
1. Actual:ideal	2.51	1.28	2.64	1.23	2.11	1.38	4.14	< .001	0.42
2. Actual:ought	1.94	1.34	2.04	1.30	1.72	1.45	2.36	.019	0.24
3. Depression	2.40	0.97	2.52	0.95	1.99	0.89	6.19	< .001	0.57
4. Anxiety	2.20	0.98	2.27	1.01	1.99	0.85	3.28	.001	0.30
5. Well-being	4.96	0.88	4.91	0.89	5.12	0.85	− 2.47	.014	− 0.24
6. Concealing	3.28	0.86	3.21	0.89	3.47	0.76	− 3.48	< .001	− 0.30
7. Adjusting	2.87	0.85	2.73	0.78	3.30	0.91	− 6.71	< .001	− 0.70
8. Tolerating	3.31	0.72	3.25	0.73	3.49	0.68	− 3.62	< .001	− 0.33
9. Self-efficacy	2.98	0.45	2.95	0.44	3.08	0.45	− 3.19	.002	− 0.29

M mean; SD standard deviation

Table 2 Pearson correlations among all constructs

	2	3	4	5	6	7	8	9	10
1. Actual:ideal	.77 [.73; .80]	.40 [.33; .46]	.34 [.26; .40]	− .45 [− .51; − .38]	.08 [− .01; .15]ns	− .45 [− .51; − .39]	− .20 [− .27; − .12]	− .44 [− .50; − .37]	− .77 [− .80; − .74]
2. Actual:ought	–	.31 [.24; .38]	.27 [.19; .34]	− .35 [− .42; − .28]	.06 [− .02; .14]ns	− .35 [− .42; − .28]	− .16 [− .23; − .08]	− .33 [− .40; − .25]	− .65 [− .69; − .60]
3. Depression		–	.68 [.64; .72]	− .39 [− .55; − .43]	.08 [.00; .16]*	− .42 [− .49; − .36]	− .25 [− .32; − .17]	− .31 [− .38; − .24]	− .37 [− .44; − .30]
4. Anxiety			–	− .58 [− .63; − .53]	.14 [.06; .22]	− .37 [− .44; − .30]	− .17 [− .25; − .09]	− .28 [− .35; − .20]	− .36 [− .43; − .29]
5. Well-being				–	− .10 [− .18; − .02]*	.44 [.37; .50]	.31 [.23; .38]	.53 [.47; .59]	.52 [.46; .58]
6. Concealing					–	.22 [.14; .29]	.03 [− .05; .11]ns	.10 [.02; .18]*	− .13 [− .20; − .05]
7. Adjusting						–	.44 [.38; .51]	.43 [.37; .50]	.42 [.35; .48]
8. Tolerating							–	.30 [.23; .37]	.24 [.17; .32]
9. Self-efficacy								–	.48 [.42; .54]
10. Actual personality traits									–

Number in parentheses refer to the 95% confidence intervals for the correlations of the constructs

ns non-significant

*p < .05, all other associations were significant at p < .001

anxiety symptoms and lower values on psychological well-being, concealing, adjusting, tolerating, and self-efficacy.

Actual:ideal and actual:ought discrepancies were highly interrelated, $p < .001$. (Table 2). Both discrepancies were significantly positively associated with depressive and anxiety symptoms, and negatively associated with well-being, the adjusting and tolerating affective styles, and self-efficacy, all ps < .001. No significant association with the concealing affective style emerged for both actual:ideal, $p = .07$ and actual:ought discrepancies, $p = .12$.

All associations were descriptively stronger for actual:ideal discrepancy associations compared to actual:ought discrepancy associations, but all confidence intervals were overlapping. However, for depression, well-being, adjusting, and self-efficacy, the actual:ought discrepancy confidence intervals did not contain the point estimates of the actual:ideal discrepancy associations.

When examining the three outcome variables, we observed that both types of discrepancies had descriptively the highest association with psychological well-being followed by depression, and then anxiety. All confidence intervals were yet overlapping, but the psychological well-being confidence intervals did not contain the anxiety point estimate.

Actual personality scores were highly related to both discrepancy scores and also significantly associated with all outcome variables, all ps < .001 (Table 2). When adjusting for actual personality scores (see Table 3 for multiple regression models), actual:ideal discrepancies were still significantly associated with depression, anxiety, well-being, the adjusting affective style, and self-efficacy. After adjusting for actual personality scores, actual:ought discrepancies were significantly associated with depression, and the affective style adjusting, while the other associations dropped below significance.

Pathway Models

Depression

For both models (actual:ideal and actual:ought), we found the same pattern (Fig. 1). Discrepancies were positively associated with depression. Discrepancies were negatively associated with tolerating, adjusting, and self-efficacy but not with concealing. Concealing was positively associated with depression. Adjusting and self-efficacy were negatively related to depression, while no effect for tolerating was found. Accordingly, the indirect effects of adjusting and actual:ideal discrepancy (indirect effect = 0.13, 95% CI [0.09; 0.17], $p < .001$) on depression and the indirect effect of adjusting and actual:ought discrepancy (indirect effect = 0.11, 95% CI [0.08; 0.14], $p < .001$) on depression

Table 3 Multiple regression weights when adjusting for actual personality scores

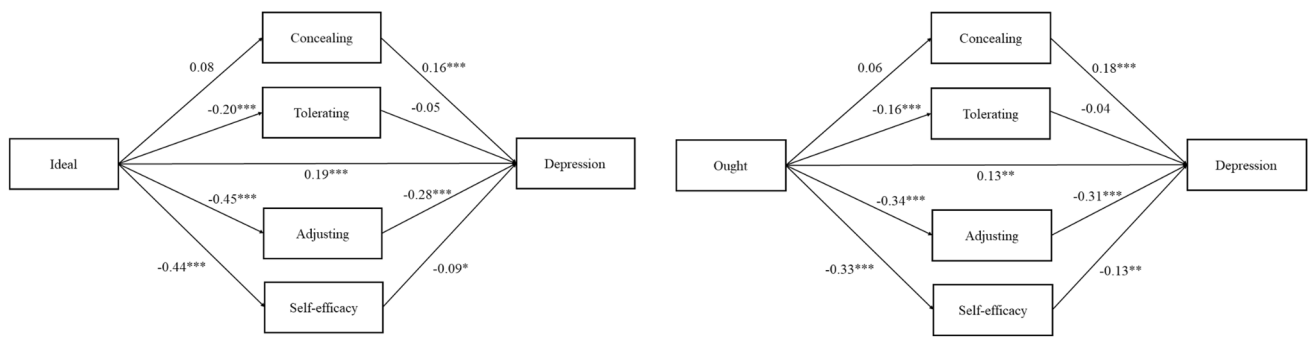|	Actual:ideal				Actual:ought			
	B	SE	p	R^2	B	SE	p	R^2
Depression								
Discrepancy	0.21	0.04	< .001	.17	0.09	0.04	.017	.15
Actual	− 0.14	0.05	.005		− 0.25	0.04	< .001	
Anxiety								
Discrepancy	0.11	0.05	.017	.14	0.04	0.04	.234	.13
Actual	− 0.21	0.05	< .001		− 0.27	0.04	< .001	
Well-being								
Discrepancy	− 0.08	0.04	.040	.28	− 0.01	0.03	.716	.27
Actual	0.33	0.04	< .001		0.39	0.03	< .001	
Concealing								
Discrepancy	− 0.04	0.04	.395	.02	− 0.02	0.03	.577	.02
Actual	− 0.12	0.05	.009		− 0.11	0.04	.007	
Adjusting								
Discrepancy	− 0.20	0.04	< .001	.22	− 0.09	0.03	.007	.19
Actual	0.13	0.04	.002		0.24	0.04	< .001	
Tolerating								
Discrepancy	− 0.01	0.04	.685	.06	0.00	0.03	.995	.06
Actual	− 0.14	0.04	< .001		0.15	0.03	< .001	
Self-efficacy								
Discrepancy	− 0.06	0.02	.002	.24	− 0.01	0.02	.551	.23
Actual	0.13	0.02	< .001		0.18	0.02	< .001	

SE standard error

Fig. 1 Model 1 (actual:ideal discrepancy left panel) and Model 2 (actual:ought discrepancy right panel) for depressive symptoms. *p < .05, **p < .01, ***p < .001; coefficients represent standardized estimates

were significant. Likewise, the indirect effect of actual:ideal discrepancy and self-efficacy on depression (indirect effect = 0.02, 95% CI [0.01; 0.08], p = .018) and actual:ought discrepancy and self-efficacy on depression (indirect effect = 0.04, 95% CI [0.02; 0.07], p = .002) were significant.

Anxiety

For both anxiety models (actual:ideal and actual:ought), the patterns were similar to the depression models (Fig. 2). Again, we found significant indirect effects of adjusting and actual:ideal discrepancy (indirect effect = 0.14, 95% CI [0.10; 0.18], p < .001) and adjusting and actual:ought discrepancy (indirect effect = 0.11, 95% CI [0.08; 0.15], p < .001) on anxiety. The indirect effect of actual:ideal discrepancy and self-efficacy (indirect effect = 0.05, 95% CI [0.01; 0.08], p = .009) and actual:ought discrepancy and self-efficacy on depression (indirect effect = 0.04, 95% CI [0.02; 0.07], p = .002) were also significant.

Psychological Well-Being

For both types of discrepancy, similar associations emerged (Fig. 3). Discrepancies were negatively associated with psychological well-being, tolerating, adjusting, and self-efficacy, but not concealing. Concealing was negatively associated with psychological well-being, while tolerating, adjusting, and self-efficacy were positively related to psychological well-being. Accordingly, indirect effects for tolerating and actual:ideal (indirect effect = −0.02, 95% CI [−0.03; −0.00], p = .025) as well as actual:ought discrepancies (indirect effect = −0.01, 95% CI [−0.02; −0.00], p = .045) on well-being were found. In addition, indirect effects for adjusting and actual:ideal (indirect effect = −0.10, 95% CI [−0.13; −0.06], p < .001) as well as actual:ought discrepancies (indirect effect = −0.09, 95% CI [−0.11; −0.06], p < .001) on well-being emerged. Last, we found indirect effects of self-efficacy and actual:ideal (indirect effect = −0.16, 95% CI [−0.20; −0.13], p < .001) and actual:ought discrepancies (indirect effect = −0.13, 95% CI [−0.17; −0.10], p < .001) on well-being.
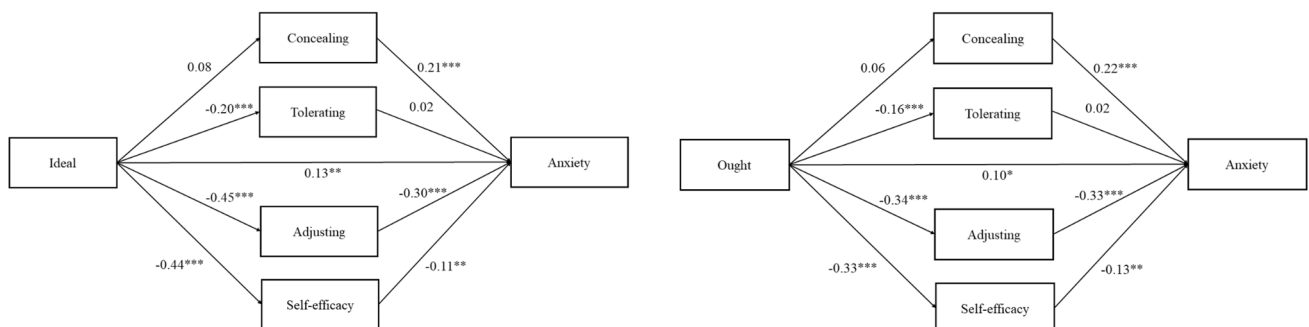

Fig. 2 Model 1 (actual:ideal discrepancy left panel) and Model 2 (actual:ought discrepancy right panel) for anxiety symptoms. *p < .05, **p < .01, ***p < .001; coefficients represent standardized estimates
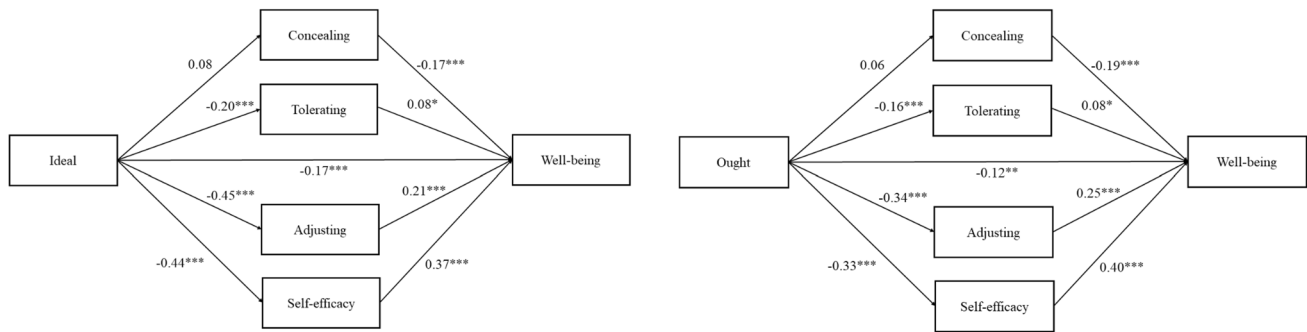
Fig. 3 Model 1 (actual:ideal discrepancy left panel) and Model 2 (actual:ought discrepancy right panel) for well-being. *$p < .05$, **$p < .01$, ***$p < .001$; coefficients represent standardized estimates
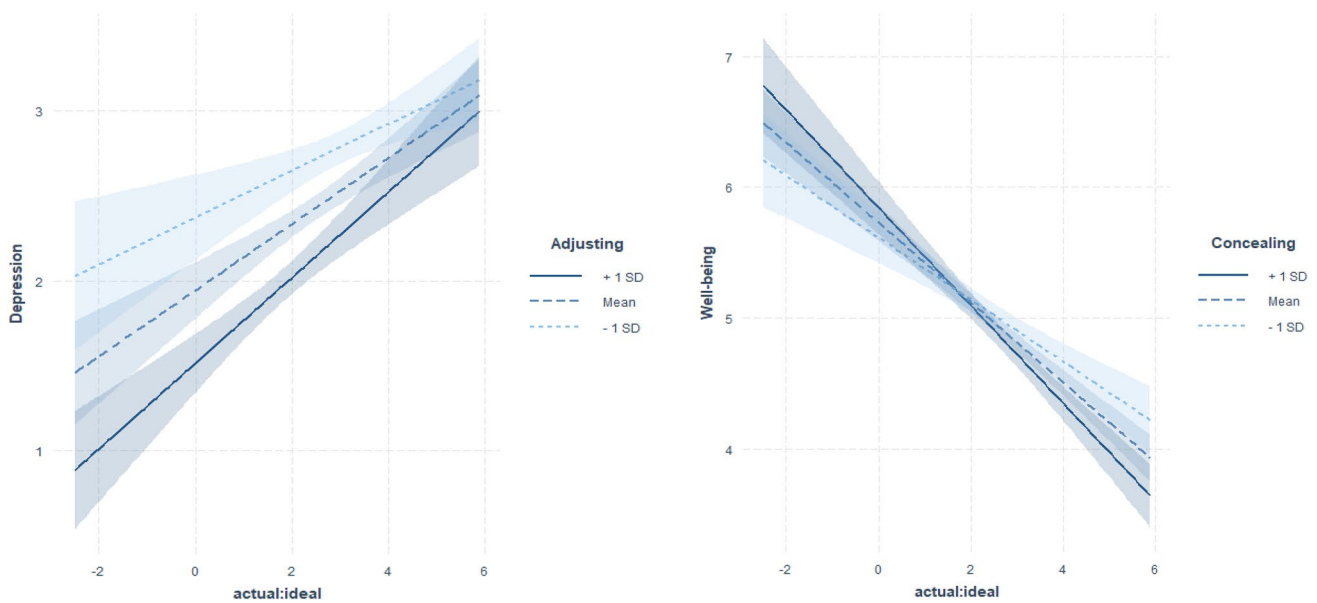

Fig. 4 Moderation effects of actual:ideal discrepancy and adjusting on depression (left panel) and actual:ideal discrepancy and concealing on well-being (right panel) for well-being

Moderation Effects

Overall, only two significant moderation effects occurred (Fig. 4). The first moderation was found for actual:ideal discrepancy and adjusting on depression, $B = .07$, $p = .022$, $R^2 = .24$. The second moderation effect emerged for the relationship between actual:ideal discrepancy and concealing with well-being as dependent variable, $B = -.08$, $p = .006$, $R^2 = .21$. All other moderation effects were non-significant, all ps $> .135$.

Discussion

We investigated the relationship between actual:ideal/ actual:ought discrepancies and depression, anxiety, and psychological well-being. Both types of self-discrepancy were associated with depression, anxiety, and psychological well-being, the affective styles tolerating and adjusting as well as self-efficacy. Indirect effects were found for discrepancies and affective adjusting and discrepancies and self-efficacy on the outcomes.

The significant association of both types of discrepancy with depression, anxiety, and well-being is in line with findings from a recent meta-analysis on self-discrepancy and psychopathology (Mason et al., 2019). This underscores the transdiagnostic importance of self-discrepancy

and aligns with theoretical considerations that they are associated with increased emotional vulnerability (Higgins, 1987). In fact, the effects of self-discrepancy remained statistically significant even after adjusting for affective styles, self-efficacy, and gender in pathway models. This emphasises the importance of self-discrepancy because both maladaptive emotion regulation and self-efficacy are centrally associated with the development and maintenance of psychopathology (Aldao et al., 2010; Cludius et al., 2020; Goldin et al., 2009; Gross et al., 2019; Sawatzky et al., 2012). However, actual personality scores were associated with the outcome variables to a similar degree as the discrepancy scores. This could indicate that individuals evaluating themselves negatively tend to have higher levels of depressive and anxiety symptoms as well as lower well-being. Accordingly, we adjusted for these actual personality scores in multiple regression models. When adjusting for these scores, actual:ideal discrepancies contributed incremental variance to depression, anxiety, well-being, the adjusting affective style, and self-efficacy beyond *actual* personality scores. For actual:ought discrepancies only the associations with depression and the adjusting affective style remained statistically significant. This indicates that a large part of the variance of actual:ought scores and their external associations is accounted for by individuals scoring lower on actual personality scores.

Both types of discrepancy shared a large proportion of common variance and displayed similar associations with the outcome measures, corroborating earlier findings that both types of discrepancy are associated with dysphoric and anxious emotional vulnerabilities (Mason et al., 2019). These findings are however at odds with theoretical considerations that articulated differential effects in that actual:ideal discrepancy should be associated with depressive and actual:ought discrepancy with anxiety symptoms (Higgins, 1987). The lack of specificity in effects may be explained by the high comorbidity between depression and anxiety as well as the high correlation among the two types of self-discrepancy (Tangney et al., 1998). In line with control theory (Martin & Tesser, 1996), any state of perceived discrepancies may lead to the initiation of rumination (Watkins & Roberts, 2020), but potentially also to a state of worrying. This may be especially true when discrepancies concern the core of one's personality, thus increasing the vulnerability for both symptom types. It has been suggested that other factors like accessibility, personal relevance, or desirability may account for the specific emotional outcome (Higgins, 1999; Mason et al., 2019). More fine-grained analyses on these factors are thus warranted. Future research may draw on more recent studies that found selective moderation effects for actual:ought discrepancy and emotion regulation on anxiety symptoms

(Gürcan-Yıldırım & Gençöz, 2022) and selective mediation effects of rumination on the relationship between actual:ideal discrepancy and anxiety and depression (Dickson et al., 2019).

We found slightly higher associations with the investigated constructs for actual:ideal discrepancy compared to actual:ought discrepancy. This also aligns with previous research reporting a slightly higher relationship between actual:ideal discrepancy and psychopathology compared to actual:ought discrepancy (Mason et al., 2019). However, for most of these comparisons the confidence intervals were overlapping, so that they should be interpreted with caution. Nonetheless, some associations between actual:ought discrepancy and the outcomes were not significant after adjusting for *actual* personality scores. This confounding was present to a lesser extent in the actual:ideal discrepancy scores.

Concerning the three outcome variables, both types of discrepancies had descriptively the highest association with psychological well-being followed by depression, and then anxiety. All confidence intervals were yet overlapping. This emphasizes that self-discrepancies are not only important to explain negative emotions but are also associated with the absence of positive emotions consistent with consideration that higher discrepancies may be associated with a lower interest of engaging in rewarding activities (Mason et al., 2019).

Both types of discrepancy were also associated with less tolerating, adjusting, and self-efficacy, but not with concealing. Not reaching one's ideal self or ought self may be associated with great difficulties to tolerate the resulting emotional responses. Also, discrepancies may lead to a greater self-focus, which may instigate difficulties to maintain a tolerating and accepting attitude towards one's emotions (Dickson et al., 2019). However, tolerating was not associated with anxiety or depression, and only weakly linked to well-being. Hence, for well-being we found a weak indirect effect of self-discrepancies and tolerating. The absence of strong effect on our outcomes does not mean that tolerating is not relevant. It may be that it is related to other clinical outcomes not measured in the present study. For instance, it has been argued that tolerating is associated with more persistence in stressful situations and may thus be important in more acute situations (Hofmann et al., 2012).

Concerning the affective style adjusting, being confronted with realizing that one is not able to reach their desired self (ideal or ought), may lead to a lower ability to modulate emotional distress in response to situational demands. This may be explained by the fact that emotion regulation strategies such as cognitive reappraisal are defined as antecedent-focus strategy to change the emotional impact before distress fully unfolds (Hofmann & Kashdan, 2010; Totzeck et al., 2018). Although both discrepancy types were negatively associated with lower adjusting, this association was

somewhat higher for actual:ideal discrepancies compared to actual:ought discrepancies. It may be particularly difficult for individuals to adjust to a high discrepancy from one's aspirations, while it may be easier to adjust to unmet perceived obligation. Nonetheless, adjusting was important for both discrepancies and associated with depression, anxiety, and well-being. For all three outcomes, indirect effects emerged for the relationship between self-discrepancies and adjusting, pointing to the importance of adjusting in the context of self-discrepancies.

Concealing was not associated with discrepancies. SDT would suggest that concealing is driven by an avoidance oriented *prevention-focused* self-regulation and that this may be instigated by perceived actual:ought discrepancies, thus leading to anxious agitation (Higgins, 1987). It may, however, be too difficult for individuals to conceal negative emotions resulting from large self-discrepancies concerning the core of individuals' personality. Detecting discrepancies and being aware of them could complicate any initiation of concealing. In this vein, individuals with high levels of concealing may not report discrepancies because of suppressed aversive emotions or because they tend to stay absent from reflections on the ideal or ought self.

Further, self-efficacy partially accounted for the relationship between discrepancies and our outcome variables. Self-efficacy may explain why individuals with high levels of self-discrepancy feel that they cannot operate in the world as they ideally would or feel obligated to. That is, self-efficacy defined as one's belief in their capacity to execute behaviors necessary to produce appetitive outcomes is needed to initiate and maintain behavior towards reducing perceived self-discrepancies. This is also in line with previous research that a lower sense of agency explained the relationship between both actual:ideal and actual:ought discrepancies and purpose in life (Stanley & Burrow, 2015). This may be instigated by the future-orientated and goal directed nature of self-efficacy (Bandura, 1977). Perceived self-efficacy critically determines one's initial decision to perform a specific behavior. When individuals fear that they cannot operate effectively as abstractly evinced in self-discrepancies this may increase helplessness or avoidance. This could explain the link to depression and anxiety symptoms, respectively, that are also commonly associated with self-efficacy (Goldin et al., 2009; Sawatzky et al., 2012). Self-efficacy thus appears to be an important and unique factor explaining self-discrepancies.

We did not find consistent patterns of moderation models. Only two moderation models were significant, but the interaction may have been found by chance given the number of tests. Our moderation effects only concerned actual:ideal associations and depression in that higher levels of adjusting were protective on low to medium levels of discrepancies but not high levels. For well-being, we found cross-over effects where high levels of concealing were associated with the lowest levels of well-being when discrepancies where high. In a former study with a Turkish sample, moderation effects for self-discrepancies and emotion regulation on anxiety symptoms occurred only for actual:ought discrepancies but not actual:ideal discrepancies (Gürcan-Yıldırım & Gençöz, 2022). Given that their sample differed from the present sample, and that they found the moderation effect only for actual:ought discrepancies there are no discernable consistent moderation patterns, which requires further research on the nature of potential moderation effects. Potentially, other variables are better suited to reveal relevant moderation effects. In their study, these authors found with a Turkish sample that resilience was an important moderator of the relationship of both types of self-discrepancies and anxiety and depressive symptoms (Gürcan-Yıldırım & Gençöz, 2022).

Clinical Implications

Consistent with previous work, self-discrepancies emerged as transdiagnostic variables (Mason et al., 2019). Accordingly, self-discrepancies may be a viable intervention target in light of their empirical and theoretical relevance for mental health. Indeed, a reduction of self-discrepancies was associated with less depressive and anxiety symptoms in previous work (Watson et al., 2014). In therapy, it is advisable to focus on dysfunctional cognitions surrounding the fulfillment of obligations and expectations. In this regard, focusing on adjustment as emotion regulation strategy may be fruitful. Further, knowledge about actual:ideal discrepancies may help to articulate and move towards realistic and valued goals with the client. Such interventions could be further informed by findings about emotion regulation and self-efficacy, which are both also transdiagnosticially important (Bandura, 1977; Gross et al., 2019). Yet, future research first needs to systematically examine whether and how these findings can be implemented into intervention efforts. Given that our sample consisted of healthy participants, research in clinical populations is also warranted to gain more insights into pathological processes of self-discrepancies in individuals suffering from mental disorders.

Limitations and Further Research

The cross-sectional study design does not allow for any causal interpretation. While our models were based on theoretical considerations, it is also feasible that the directionality may be different. For instance, emotion regulation strategies can also show bidirectional relationships with emotional disorders (Aldao et al., 2010; Cludius et al., 2020). Further, other unmeasured variables may contribute to these relationships. Gender was unequally distributed as the majority of our sample was female. Although we statistically adjusted

for gender in our analyses, studies with more balanced gender distributions are needed. Moreover, because of the number of statistical tests to detect moderation effects, these findings need to be interpreted with caution. In our analyses, we relied on nomothetic measures. Established measures of self-discrepancies such as the integrated self-discrepancy index use combinations of idiographic and nomothetic methods to assess self-discrepancies holistically (Hardin & Lakin, 2009). It was argued and theoretically expected that idiographic methods would elucidate the personally most relevant domains for individuals, which are prone to severe emotional reactions when discrepancies are detected. However, a meta-analysis suggests that effects of discrepancies on emotional reactions were stronger for nomothetic measures compared to idiographic measures (Mason et al., 2019). In this vein, it is also important to note that by using simple difference scores, all items contributed equally to the discrepancy scores. Further studies may remedy this limitation by asking for the subjective importance of the respective item and weighing scores accordingly or modeling discrepancies with different statistical methods (for an overview of limitations of difference scores see Shanock et al., 2010).

A further potential limitation of the self-discrepancy measure is the presentation of the ideal and the ought questions next to each other. This may have elicited response patterns that hamper participants' ability to differentiate between the respective ideal and the ought question. The latter may have been perceived as subset of the former, and participants may have striven for consistency in their responses. This may, in part, account for the similar relationships of the two types of discrepancy. In addition, further studies could disentangle whether aspects of the ought-self relate to expectations and obligation perceived by themselves or by others. This could have relevant clinical implication as this may impact the underlying motivation to change the ought-self or to address cognitions implicated in actual:ought discrepancies. In the present study, we also focused on the core of individuals' personality so that the attributes are likely to be highly valued and personally relevant while simultaneously capturing a wide range of attributes that may not have come up when using idiographic measures. As a result of this approach, internal consistencies of the discrepancy scales were below recommended cut-offs. However, to capture the relevant breadth of individual's personality, the items needed to represent the construct broadly to increase their personal meaning for participants. This is in line with previous research reporting lower levels of internal consistency for short scales of personality (Rammstedt et al., 2021). It is also important to consider varying cultural backgrounds as the self is embedded in the sociocultural background of an individual (Cheung, 1997). For example, in collectivistic cultures, a higher importance may be assigned to the ought-self relative to the ideal-self compared to individualistic cultures, and vice versa (Cheung, 1997). Disentangling cultural specifics of self-discrepancies and resulting emotions in future studies may be relevant for a more thorough understanding of putative mechanisms.

Conclusions

The present study sheds light on the complexity of actual:ideal and actual:ought discrepancies and their relationships with depression, anxiety, and psychological well-being. In line with meta-analytical findings but in contrast to theoretical accounts, both types of discrepancies were associated with depression, anxiety, and psychological well-being without displaying differential effects. We identified affective adjustment and self-efficacy as key variables implicated in the relationship between self-discrepancies and depression, anxiety, and psychological well-being. Longitudinal and experimental studies are warranted to further examine the role of affect regulation and self-efficacy in clinical populations with high levels of self-discrepancy.

Declarations

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