



Standards for Socially-and Achievement-Oriented Roles in Major Depressive Disorder and Generalized Anxiety Disorder

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Abstract

Background People with major depressive disorder (MDD) and generalized anxiety disorder (GAD) have elevated trait perfectionism. We tested whether they hold perfectionistic standards for specific life roles and examined the extent to which they met their own expectations for, gained satisfaction from, and expended effort in these roles.

Methods Seventy-four women with MDD, GAD, both disorders, or no mental disorders (CTL) described their standards for a socially-and achievement-oriented roles, coded for perfectionism. Using ecological momentary assessment, participants reported the extent to which they met, how much satisfaction they gained from, and how much effort they expended in each role.

Results Although the clinical groups endorsed elevated trait perfectionism, they did not differ from CTLs in their role-specific standards. Compared to CTLs, the clinical groups reported meeting their standards to a lesser extent and receiving less satisfaction from both roles. The two MDD groups reported expending less effort in achievement-oriented, but not socially-oriented, roles than the other two groups.

Conclusion Despite similar standards for socially- and achievement-oriented roles, people with MDD and/or GAD are less likely to meet their standards and gain satisfaction from these roles. Having MDD, independent of GAD, is associated with putting less effort into achievement-oriented roles.

Keywords Perfectionism · Roles · Standards · Motivation · Effort · MDD · GAD

People have many roles in their daily lives, including socially-oriented (e.g., friend, romantic partner) and achievement-oriented (e.g., lawyer, class president) roles. People use standards to guide and evaluate their behaviors, comparing themselves to reference values or expectations (Boldero and Francis 2002). Although standards reflect cultural norms (Burton 1978), individuals vary in their standards (Rutherford 1990). Whereas one student may think that only “A”s are acceptable, another may be satisfied with “B”s. People can hold themselves to higher standards in some roles

than in others. Standards can be adaptive in increasing levels of motivation to meet a goal (Burton 1978). However, standards can also reflect extreme or perfectionistic expectations, which have been associated with maladaptive outcomes (Frost et al. 1990) that adversely affect daily functioning (Ferguson and Rodway 1994). Indeed, investigators have tested a cognitive-behavioral treatment developed to reduce levels of perfectionism (Ferguson and Rodway 1994).

In the present study, we examined people’s standards for socially- and achievement-oriented roles, focusing on roles from two major life domains that are often associated with impairment among clinical samples. Perfectionism (i.e., a disposition to strive for exceedingly high standards accompanied by overly critical evaluation; Stoeber 2018) has been implicated in both depressive and anxiety disorders; therefore, we compared individuals with major depressive disorder (MDD) and generalized anxiety disorder (GAD) to healthy control participants to examine how standards for roles differ as a function of mental health status. To reduce retrospective biases in self-report measures and to increase

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ecological validity, we used ecological momentary assessment (EMA) to assess the extent to which people met their own standards for socially- and achievement-oriented roles. To further elucidate how these roles play out in people's daily lives and to highlight differences between the healthy and clinical samples, we also assessed the satisfaction gained from these roles and how much effort was expended in these roles.

Depression and worry (i.e., the central symptom of GAD) are associated with higher standards. High levels of maladaptive perfectionism, including perfectionistic concerns and evaluative concerns, are related to depression (Bieling et al. 2004; Kawamura et al. 2001), worry (e.g., Chang et al. 2007), and GAD symptoms and diagnosis (Besharat et al. 2014; Klibert et al. 2015). Even controlling for depression, maladaptive perfectionism is positively associated with worry in college students (Kawamura et al. 2001; Stöber and Joormann 2001) and adults with GAD (Handley et al. 2014). Researchers have not yet examined whether the associations between depression and dimensions of perfectionism hold when controlling for worry, although both adaptive and maladaptive dimensions of perfectionism were associated with depression after controlling for several forms of anxiety (Kawamura et al. 2001). It is also important to examine whether there are additive effects of perfectionism in individuals with depression and worry because MDD and GAD are highly comorbid (Moffitt et al. 2007).

There are several reasons why individuals with MDD and GAD may not meet their standards to the same extent as healthy controls do. Individuals with MDD tend to be self-critical and interpret events negatively (e.g., Kircanski et al. 2012), possibly including their own standards for their roles. Individuals with elevated GAD symptoms worry about numerous domains (Llera and Newman 2014). Among those with GAD, worry may cause individuals to become stressed about everyday issues (Llera and Newman 2014), including whether they are meeting their standards for various roles.

There are also several reasons to expect that individuals with MDD and GAD derive less satisfaction from their daily roles than do healthy controls. Depressed individuals are characterized by having high levels of anhedonia (Treadway and Zald 2011), which may extend to the satisfaction they receive from their roles. The contrast avoidance model of GAD posits that individuals with GAD experience a sustained state of distress (i.e., worry) to be prepared for negative outcomes and to avoid experiencing a shift from a neutral or positive emotional state to a negative state (Newman and Llera 2011). Lack of satisfaction in socially- and achievement-oriented roles may be one manifestation of this tendency. Further, individuals with MDD (Gotlib and Joormann 2010) and GAD (Waters et al. 2014) have negative cognitive biases that likely adversely affect their role satisfaction.

In the present study, consistent with the trait perfectionism literature, we hypothesized (Hypothesis 1) that the three clinical groups (i.e., those with MDD, GAD, and MDD-GAD) would have more perfectionistic *standards* for their socially- and achievement-oriented roles (i.e., role-specific standards) than would the healthy control (CTL) group. The current study focused on women to strengthen statistical power and because MDD, GAD, and their co-occurrence are approximately twice as prevalent in women as in men (Kendler et al. 2007). We predicted (Hypothesis 2) that the three clinical groups would report meeting expectations for both roles *to a lesser extent* than would the CTL group, and (Hypothesis 3) that the three clinical groups would report receiving less *satisfaction* from both roles than would the CTL group. Due to individuals with MDD having motivational deficits (Treadway et al. 2012), we hypothesized (Hypothesis 4a) that individuals with MDD (i.e., the MDD and MDD-GAD groups) would report expending less *effort* in both roles than would the CTL and GAD groups, which we expected would not differ from each other (Hypothesis 4b). Finally, we hypothesized (Hypothesis 5) that these group differences would hold after accounting for actual self-reported standards in the two roles. We used EMA to test these hypotheses to reduce the potential impact of cognitive biases that characterize individuals with MDD (Gotlib and Joormann 2010) and GAD (Waters et al. 2014).

Method

Participants and Procedure

We recruited 70 women 18–50 years of age ($M = 33.2$ years; $SD = 9.4$) through online advertisements and at local psychiatric clinics to participate in a NIMH-funded project examining stress, reactivity, and regulation in non-cooccurring and cooccurring MDD and GAD in women. The sample identified 59.7% White, 15.3% Asian, 6.9% Latina, 5.6% Black, and 11.1% “other.” Approximately two-thirds of the sample had earned at least a bachelor's degree.

To assess eligibility, individuals completed the Structured Clinical Interview for *DSM-IV* Axis I Disorders (SCID-I; First, Spitzer et al. 1996). Participants in the MDD group ($n = 16$) met diagnostic criteria for current MDD and had no diagnosis of GAD currently or within the past 24 months. Participants in the GAD group ($n = 15$) met diagnostic criteria for current GAD and had no diagnosis of current MDD within the past 24 months. Participants in the co-occurring MDD-GAD group ($n = 20$) met diagnostic criteria for current MDD and current GAD. Eligibility for the CTL group ($n = 19$) included not meeting any criteria for current or lifetime Axis I disorders, such as depressive and anxiety disorders. Exclusion criteria for all participants included

not being fluent in English, having severe head trauma, psychotic symptoms, a history of learning disabilities, and current substance use disorder. Diagnostic inter-rater reliability in the present sample was excellent for both MDD ($k=1.00$) and GAD ($k=0.87$). The four groups did not differ in age, $F(3,66)=0.94$, $p=0.426$, race/ethnicity distribution, $X^2_{(15)}=14.93$, $p=0.457$, or completion of four years of university, $X^2_{(3)}=0.08$, $p=0.995$.

The EMA design asks participant to report on their roles in-the-moment, negating the need for participants to retrospectively report. Participants were trained on the use of a handheld Palm Pilot Z22, including completing a practice survey. Each participant identified her most important socially-oriented role (e.g., girlfriend, sister) and achievement-oriented role (e.g., student, manager). Devices were programmed individually such that questions about roles were personalized.

The devices were programmed using ESP 4.0 software (Barrett and Feldman-Barrett 2000) and prompted participants eight times per day during a 12-h period for one week. Prompt occurrences were randomized within 90-min intervals ($M=96$ min, $SD=37$). Data were recorded as missing after 5 min. Participants completed the following percentage of EMA surveys: $M=64.3\%$, $SD=24.2\%$, range = 12–100%. There were no group differences in the percentage of surveys completed, $F(3,66)=0.64$, $p=0.59$. Participants received additional compensation if they completed 90% or more of the surveys. One participant was excluded because she completed fewer than five surveys. Participants provided informed consent and the study was approved by a university institutional review board.

Self-report Measures

Role-Specific Standards

Frequencies for socially-oriented roles were: 28.8% romantic partner; 27.4% mother; 27.4% friend; 12.3% other family member (e.g., daughter), and 4.1% indicated a role we coded as “other” (e.g., social media influencer). For achievement-oriented roles, 63.0% indicated their current job; 16.4% indicated being a student; 11.0% indicated seeking employment; 4.2% indicated being a homemaker, and 5.5% indicated another role we coded as “other” (e.g., volunteer).

To assess role-specific standards, participants answered a series of open-ended questions: (1) *time and effort*: “How much time and effort should you spend doing things within and thinking about this [social] role to be COMPLETELY SATISFIED with yourself in this [social] role?”; (2) *feedback and milestones*: “What objective or concrete feedback, situations, milestones, etc., would make you feel COMPLETELY SATISFIED with yourself in this [social] role? It could include how you want to be perceived in this role, including comparisons to

peers in this role”; and (3) *expectations and rules*: “What are some other rules you hold yourself to in this role in order to be COMPLETELY SATISFIED with yourself in this [social] role? In other words, what are the shoulds, musts, always, nevers, you tell yourself to be completely satisfied with yourself in this role?” These questions were repeated for the achievement-oriented role. These domains were selected to assess aspects of perfectionism and were based on cognitive behavioral treatment with patients with internalizing disorders (e.g., Beck 2011; Dimidjian et al. 2008).

Three undergraduate research assistants blind to diagnoses coded the extent to which each response reflected perfectionistic tendencies. Coders made three ratings for each socially- and each achievement-oriented role: (1) time and effort; (2) feedback and milestones; and (3) expectations and rules. A 5-level experimenter-generated coding scheme was designed for each of these three ratings (1 = least amount of time and effort, least amount of feedback and milestones, or most lenient rules and expectations; 5 = most amount of time and effort, most concrete feedback, or strictest expectations and rules); values of 2, 3, and 4 represented levels between these two extremes. Each coder coded responses individually; consensus ratings were reached through discussion. To estimate interrater reliability, we computed intraclass correlations (ICC) using a two-way random effects model (type: consistency). Mean ICCs are as follows: (1) time and effort for social role: 0.92, achievement role: 0.88; (2) feedback and milestones for social = 0.84, achievement = 0.86; and (3) expectations and rules for social = 0.77, achievement = 0.87), representing good to excellent reliability.

Trait Standards

We assessed trait standards using two scales of the Almost Perfect Scale-Revised (APS-R; Slaney et al. 2001). The 7-item *standards* scale assesses high performance expectations; the 12-item *discrepancy* scale assesses self-critical performance evaluations. These two scales assess the two dimensions of perfectionism, respectively: personal standards perfectionism and evaluative concerns (Frost et al. 1990; Hewitt and Flett 1991), and it is critical to assess both (e.g., Stoeber 2018). Each item was rated on a 7-point Likert scale (1 = strongly disagree, 7 = strongly agree), and we averaged items for each scale to compute the two scores. Cronbach’s alphas for the trait standards and discrepancy scales were 0.91 and 0.97, respectively.

Ecological Momentary Assessment

Meeting Expectations

At each prompt, participants reported on the extent to which they were meeting their expectations for each role

since the previous prompt. Using a 5-point scale (1 = failed, 2 = poorly, 3 = ok, 4 = well, 5 = perfectly), participants answered “Since the last beep, to what extent have you met your own expectations for being a [ROLE]?” where “ROLE” would be replaced by the specific role (e.g., student) that they indicated. Participants could indicate “not applicable.” The intraclass correlation coefficients (ICC) for the extent to which people met their expectations for socially-oriented roles was 0.39. That is, 39% of the variance was at the between-person level, whereas 61% of the variance was at the within-person level, which reflects the role of situations. The ICC for the achievement-oriented role variable was 0.52. Trait discrepancy was significantly associated with both socially-oriented, $\gamma_{01} = 3.21$, $SE = 0.06$, $t(58) = 4.84$, $p < 0.001$, and achievement-oriented, $\gamma_{01} = 2.89$, $SE = 0.04$, $t(58) = 3.41$, $p = 0.001$, expectations, providing construct validity.

Satisfaction

When applicable (i.e., when endorsed engaging in a role), participants indicated the extent to which they felt satisfied from each role since the previous prompt. Using a 100-point visual analog scale (1 = very little, 100 = very much), participants answered “Since the last beep, how much SATISFACTION have you gotten from being a [ROLE]?” The indicator started at the midpoint, and participants moved the cursor left or right to indicate their level of satisfaction.” ICCs were 0.54 and 0.57 for socially- and achievement-oriented roles, respectively.

Effort

When applicable, participants indicated the amount of effort they had expended in each role since the last prompt by moving an indicator along 100-point visual analog scale (1 = very little, 100 = very much). Participants answered, “Since the last beep, how much EFFORT have you put into being a [ROLE]?” ICCs were 0.54 and 0.46 for socially- and achievement-oriented roles, respectively.

Analytic Plan

First, we present means and standard deviations for, and correlations among, the role-specific standards and trait standards variables assessed in the laboratory. Second, we examine whether the EMA data show trends across the sampling period by regressing survey number on each of the six role variables. Then, we present group differences in standards using multivariate analyses of variance (MANOVAs) with appropriate follow-up tests when appropriate (Hypothesis 1).

For Hypotheses 2–5 we analyzed the data using multilevel modeling because of the nested structure of the data (i.e.,

surveys nested within participants). Multilevel modeling does not assume independence of data points and estimates within- and between-person effects (Krull and MacKinnon 2001). It also accounts for varying time intervals between prompts and missing data (Snijders and Bosker 2011). We used Hierarchical Linear Modeling (HLM) software version 7.03 and report parameter estimates with robust standard errors. We describe full models, all of which were random effects models (i.e., intercepts and slopes were allowed to vary). In the equations below, i represents surveys and j represents participants.

We ran models (See Model 1) examining group differences in three Level 1 outcome variables: (1) extent to which people met their standards (i.e., *expectations*; Hypothesis 2); (2) *satisfaction* they gained from their roles (Hypothesis 3); and (3) how much *effort* they expended in their roles (Hypotheses 4a and 4b). All analyses were conducted separately for the two roles, testing six models. Multilevel models were run such that all possible group differences were examined. This entailed having three diagnostic group variables (uncentered) at Level 2. We present the full equations only for models that have the CTL group as the referent group (see Models 1 and 2), but we present the results from all models in the Results section.

Model 1¹

Level 1:

$$\text{Outcome variable}_{ij} = \beta_{0j} + r_{ij} \quad (1a)$$

Level 2:

$$\begin{aligned} \beta_{0j} = & \gamma_{00} + \gamma_{01} * (\text{MDD}_j) + \gamma_{02} * (\text{GAD}_j) \\ & + \gamma_{03} * (\text{MDD} - \text{GAD}_j) + u_{0j} \end{aligned} \quad (1b)$$

At Level 1, β_{0j} represents each person’s mean outcome variable across their surveys. At Level 2, γ_{00} represents the mean of the outcome variable for the control group; γ_{01} is the difference in the mean outcome variable between the control and the MDD groups; γ_{02} is the difference in the mean outcome variable between the control and GAD groups; and γ_{04} is the difference in the mean outcome variable between the control and MDD-GAD groups.

To examine whether any group differences were accounted for by groups’ role-specific standards (Hypothesis 5), we ran six models that included people’s standards (grand mean centered) for the respective role (e.g., socially-oriented standards) as a Level 2 variable.

¹ Equations 1a and 1b can also be written as
 $\text{Outcome variable}_{ij} = \gamma_{00} + \gamma_{01} * (\text{MDD}_j) + \gamma_{02} * (\text{GAD}_j) + \gamma_{03} * (\text{MDD} - \text{GAD}_j) + u_{0j} + r_{ij}$

Table 1 Spearman’s rho correlations and descriptive statistics for standards variables

	Socially-oriented standards	Achievement-oriented standards	Trait standards	Trait discrepancy
Socially-oriented standards	–	0.238*	–0.063	0.188
Achievement-oriented standards		–	–0.026	0.311**
Trait standards			–	0.325**
Trait discrepancy				–
M(SD)	3.42 (0.64)	3.66 (0.73)	5.76 (1.23)	4.37 (1.82)

Role-specific standards scales were assessed using a 5-point scale, and trait standards were assessed using a 7-point scale. * $p < 0.05$, ** $p < 0.01$

Model 2

Level 1:

$$\text{Outcome variable}_{ij} = \beta_{0j} + r_{ij} \tag{2a}$$

Level 2:

$$\begin{aligned} \beta_{0j} = & \gamma_{00} + \gamma_{01} * (\text{MDD}_j) + \gamma_{02} * (\text{GAD}_j) \\ & + \gamma_{03} * (\text{MDD} - \text{GAD}_j) + \gamma_{04} \\ & * (\text{role} - \text{specific standards}_j) + u_{0j} \end{aligned} \tag{2b}$$

Results

Means, standard deviations, and correlations among the laboratory-assessed standards variables are presented in Table 1. Although people’s standards for their socially- and achievement-oriented roles were significantly related, a paired sample *t*-test indicated that people had significantly higher standards for their achievement-oriented role than for their socially-oriented role, $t(70) = 2.3, p = 0.022$. There were no systematic trends over the sampling period for social-role expectations, satisfaction, or effort, $ts(998) < 1.195, ps > 0.23$. Achievement-role expectations showed a marginal positive trend, $B1 = 0.005, t(998) = 1.807, p = 0.071$, and achievement-role satisfaction and efforts showed significant positive trends across the sampling period, $B1 = 0.145, t(998) = 1.995, p = 0.046, b1 = 0.195, t(998) = 3.088, p = 0.002$, respectively. After further examination, only the CTL group’s reports of achievement-role expectations, satisfaction, and efforts showed trends across the sampling period that significantly differed from zero.

With respect to Hypothesis 1, although there were no group differences in socially- and achievement-oriented role-specific standards, $F(6,128) = 1.46, p = 0.196$, the groups differed significantly in trait standards and trait discrepancy, $F(6,128) = 5.831, p < 0.001$. Post-hoc comparisons revealed that, compared to the CTL group, the MDD group’s and GAD group’s trait standards were significantly higher,

$ps < 0.05$, and the MDD-GAD group’s trait standards were marginally higher, $p = 0.076$, with no differences among the clinical groups, $ps > 0.42$. The three clinical groups had significantly higher trait discrepancies than did the CTL group, $ps \leq 0.01$.

Table 2 presents the full results of the multilevel models. Consistent with Hypothesis 2, all clinical groups reported meeting their standards for both roles to a lesser extent than did the CTL group; there were no significant differences among the clinical groups for either role (socially-oriented roles: $ts(54) < 1.15, ps > 0.25$; achievement-oriented roles: $ts(54) < 0.96, ps > 0.34$). Consistent with Hypothesis 3, all clinical groups reported receiving less satisfaction from their roles than did the CTL group²; there were no significant differences among the clinical groups in the *satisfaction* they gained from either role (socially-oriented roles: $ts(54) < 1.15, ps > 0.25$; achievement-oriented roles: $ts(54) < 1.19, ps > 0.24$).

Findings regarding Hypothesis 4a were mixed. The CTL group did not differ from any clinical group in the effort they expended in their socially-oriented roles, $ts(54) < 1.00, ps > 0.32$ —inconsistent with Hypothesis 4a. The two MDD groups, who reported similar levels of effort for both roles (socially-oriented roles: $t(54) = 0.01, p = 0.992$; achievement-oriented roles: $t(54) = 1.12, p = 0.266$), reported expending less effort in their achievement-oriented roles than did the CTL group (See Table 2)—consistent with Hypothesis 4a. Also consistent with Hypothesis 4a, compared to the GAD group, the MDD-GAD group reported expending significantly less effort in their achievement-oriented

² We computed linear and quadratic time-of-day variables, operationalized as the number of minutes since the first prompt of the day (centered across all participants). Linear time of day was not associated with achievement-role expectations, satisfaction, or effort, or with social-role expectations or effort, but was negatively associated with social-role satisfaction, $t(997) = 2.73, p < .01$; people’s satisfaction in their social roles decreased across the day. Quadratic time of day was not associated with any of the six variables. We ran Models 1 and 2 for social-role satisfaction, including the two time-of-day variables at Level 1. Results were consistent with models without the two time-of-day variables.

Table 2 EMA-assessed standards by clinical Group, testing Model 1

	Socially-oriented role				Achievement-oriented role			
	coefficient	SE	t(54)	p	coefficient	SE	t(54)	p
Expectations								
CTL (reference group)	4.05	0.12	32.86	<0.001	3.90	0.17	23.48	<0.001
Difference from CTL								
MDD	-0.98	0.20	-5.05	<0.001	-1.06	0.24	-4.46	<0.001
GAD	-0.85	0.16	-5.25	<0.001	-1.0	0.22	-4.84	<0.001
MDD-GAD	-0.75	0.19	-3.95	<0.001	-1.28	0.27	-4.84	<0.001
Satisfaction								
CTL (reference group)	75.94	3.55	21.40	<.001	64.76	4.19	15.47	<.001
Difference from CTL:								
MDD	-28.39	6.60	-4.30	<.001	-18.33	7.65	-2.40	.02
GAD	-20.80	6.67	-3.12	.003	-17.96	6.55	-2.74	.008
MDD-GAD	-20.56	5.31	-3.88	<.001	-26.73	6.85	-3.90	<.001
Effort								
CTL (reference group)	60.37	3.89	15.52	<.001	63.96	4.25	15.06	<.001
Difference from CTL:								
MDD	-5.59	7.03	-0.80	0.430	-14.50	7.29	-1.99	.052
GAD	-2.92	6.05	-0.48	0.632	-5.37	5.30	-1.02	.315
MDD-GAD	-5.66	5.69	-1.00	0.324	-23.52	6.87	-3.42	.001

roles, $t(54)=2.90$, $p=0.005$; although in the hypothesized direction, the MDD group did not significantly vary from the GAD group in their expended effort for their achievement-oriented roles: $t(54)=1.36$, $p=0.18$. Consistent with Hypothesis 4b, the CTL and the GAD groups did not differ in their effort expended in their achievement- or socially-oriented roles (See Table 2).

After taking into account standards for the respective role type (Hypothesis 5), group differences remained at the same significance levels in the extent to which people reported (1) meeting their expectations for socially-oriented roles, $t(53)>3.90$, $ps<0.001$, and achievement-oriented roles, $t(53)>3.66$, $ps<0.001$; (2) the satisfaction that people received from their socially-oriented roles, $t(53)>2.77$, $ps<0.01$, and achievement-oriented roles, $t(53)>2.32$, $ps<0.02$; and (3) the effort people expended in achievement-oriented roles. For example, compared to the CTL group, the MDD group reported putting in marginally less effort, $t(53)=-1.90$, $p=0.064$, and the MDD-GAD group reported putting in significantly less effort, $t(53)=-3.36$, $p<0.001$.

Discussion

Although the standards that people hold for their life roles can be adaptive in guiding behaviors (Boldero and Francis 2002) and helping people meet their goals (Burton 1978), they can reflect extreme or perfectionistic expectations that are common in people with internalizing disorders (Hewitt

and Flett 1991). In three groups with MDD and GAD and a healthy control group, we assessed individuals' idiographic standards for their most important socially- and achievement-oriented roles. We chose these two life domains because these domains are virtually universal, increasing the generalizability of our findings. Further, Stoeber (2018) called for an increase in research on perfectionism in work domains. We also assessed people's momentary views of whether they met their standards for, gained satisfaction from, and expended effort in these roles in naturalistic settings, reflecting high ecological validity and minimizing retrospective bias effects.

Although much of the perfectionism literature has focused on trait perfectionism, some investigators have examined people's domain-specific standards (e.g., performance standards among figure skaters; Dunn et al. 2011). Researchers have also assessed several domain-specific standards but have aggregated across these domains to yield a general index (e.g., Gunnard et al. 2011). The present study underscores the importance of assessing standards in specific domains, given the present finding that people's standards were only moderately correlated across the two roles. Our findings are consistent with Levine and Milyavaskaya (2018), who found significant intra-individual variation in perfectionism across multiple life domains. Our participants reported significantly higher standards for their achievement- versus socially-oriented roles. Of note, McArdle (2010) found that adolescents' perfectionistic tendencies were higher for school than for sports domains; taken together, these may reflect an emerging pattern of

people having elevated standards for achievement-oriented roles across different age groups.

We replicated prior findings of elevated trait standards across the three clinical groups, reflecting higher levels of perfectionism. Although we predicted that the clinical groups would have more extreme standards for their socially- and achievement-oriented roles than would the healthy control group (Hypothesis 1), we found no group differences for either role. This absence of group differences stands in contrast to the literature on trait perfectionism. Consistent with this research (e.g., Remes et al. 2016), the clinical groups reported more extreme trait standards and trait discrepancies than did the healthy control group. One possibility for this discrepancy is that people's views of their global standards may be affected more strongly by cognitive biases that characterize MDD and GAD (Bell-Dolan and Wessler 1994; Gotlib and Joormann 2010) than their views of domain-specific standards. Future research should examine whether domain-specific standards for socially- and achievement-oriented roles are more highly associated with important outcome variables than is a global measure of perfectionism.

Consistent with Hypothesis 2, the three clinical groups reported meeting their standards for both roles to a significantly lesser extent than did the healthy control group, suggesting that this evaluation is general, rather than domain specific. Critically, these group differences remained even after accounting for people's role-specific standards, supporting Hypothesis 5. We focused on people's *perceptions* of whether they met their personal standards; future research should examine whether people with GAD and MDD are accurate in thinking they are not meeting standards. There are specific domains that lend themselves to reliably assess standards objectively in naturalistic settings (e.g., academic performance) or in the lab (e.g., physical activity). It will also be important to examine *why* the clinical groups perceive that they are not meeting their standards. Individuals with GAD may worry about their roles, resulting in their perceptions that they are not meeting their standards (e.g., worry that they did something wrong at work), whereas those with MDD may be evaluating their performance excessively harshly or engaging in rumination (e.g., dwelling on what did not go well when socializing).

The three clinical groups did not differ significantly in the extent to which they met their standards for both their roles. This finding is notable for the MDD-GAD group, as different mechanisms could lead people with MDD or GAD to report that they are not meeting their standards and could have been additive for the comorbid group. Finding no group differences may indicate that the same or similar factors are driving this effect for the different groups. For example, individuals with MDD and individuals with GAD have been

found to attribute success to external factors and failure to internal factors, and to minimize success (e.g., Bell-Dolan and Wessler 1994).

Supporting Hypothesis 3, clinical groups reported less satisfaction for both roles than did the healthy control group. These findings held after we controlled for people's role-specific standards, consistent with Hypothesis 5. Receiving less satisfaction from life roles is another example of how depressed individuals experience reduced pleasure in their daily lives (e.g., Treadway and Zald 2011). For GAD, Llera and Newman (2014) have posited that individuals with GAD engage in chronic worry because they prefer to experience sustained distress to be prepared for the worst possible outcome of events; the reduced satisfaction that people with GAD derive from their roles may be one way in which these individuals maintain their distress.

Taken together, people with MDD and/or GAD meet their role-specific standards and receive satisfaction from these to a similar degree—one that is less frequent and less satisfying than the healthy control group, suggesting that these constructs are transdiagnostic of MDD and GAD. This pattern of findings suggests that the extent to which people meet standards for specific roles and the satisfaction from which they experience these roles are shared characteristics or correlates of these two internalizing disorders. Based on this pattern of findings and because people with other internalizing disorders (e.g., social anxiety disorder) have elevated perfectionism, future research would benefit by examining these roles to inform current and future diagnostic nomenclatures across internalizing disorders.

Hypothesis 4 focused on diagnostic specificity: We expected that groups with MDD (i.e., MDD and MDD-and-GAD groups) would report exerting less effort in their roles than would the GAD and healthy control groups. Consistent with this, for achievement-oriented roles, the two MDD groups reported expending less effort than did the healthy control and GAD groups (even after accounting for role-specific standards, i.e., Hypothesis 5). Thus, a diagnosis of MDD, even in the context of co-occurring GAD, is associated with a motivational deficit in individuals' pursuit of meeting standards for their roles. The findings were also consistent with our hypothesis that the GAD and healthy control groups would not differ in the amount of effort they expended in their two roles. These findings involving the GAD group may be surprising given that GAD is associated with avoidance and procrastination (e.g., Brown and Tung 2018). Future studies should examine mechanisms, such as procrastination and anticipatory anhedonia, and their relations to effort expended in daily roles. In contrast, we found no group differences in the effort people reported expending in their *socially-oriented* roles. This is surprising given the motivational deficits that characterize people with MDD. Further, depressed individuals have been found to exhibit

various social impairments (Romera et al. 2010); one might expect that these impairments would lead to negative feedback from or aversive interactions with others, which over time would lead people with MDD to expend less effort in their socially-oriented roles. It will be important for future research to replicate this finding.

We want to note some limitations of the present study. First, because MDD and GAD are highly comorbid, it was difficult to recruit participants with only one disorder, resulting in small sample sizes. We used stringent diagnostic criteria and repeated data points within participants to improve statistical power. Second, we restricted our sample to women, for whom MDD and GAD are more common (Kendler et al. 2007); consequently, future research should examine the generalizability of these findings to other genders. For example, compared to men's self-concepts, women's self-concepts more greatly emphasize relationships (e.g., Markus and Oyserman 1989), so results describing socially-oriented roles in our sample may not similarly characterize men. Third, our sample is highly educated. Future research should recruit a more diverse sample with regard to education and assess whether education level is related to achievement-role variables. Finally, our domain-specific standards measures did not show consistent associations with trait standards and trait discrepancy, which comprise the two dimensions of perfectionism: personal standards perfectionism and evaluative concerns, respectively (e.g., Frost et al. 1990; Hewitt and Flett 1991). It is critical that future research discern whether domain-specific standards are also composed of similar dimensions that make up trait perfectionism, or whether their structure is unique.

The present study focused on people's standards for two major life roles and examined people's momentary perceptions of these roles as they engaged in their day-to-day activities, assessing the extent to which they met these standards, the satisfaction that they gained from them, and the effort they expended in their roles. People generally hold higher standards for their achievement-oriented roles than for their socially-oriented roles. Although people with MDD, GAD and MDD-GAD reported higher levels of trait perfectionism than did healthy controls, standards for specific roles did not differ across the four groups. These findings underscore limitations of assessing global measures of standards, such as trait perfectionism, and the need to assess domain-specific standards, especially in clinical samples. Despite the fact that role-specific standards did not differ across groups, participants in the clinical groups reported that they did not meet their standards as frequently and gained less satisfaction from their roles than did the healthy controls. Having a diagnosis of MDD, whether alone or comorbid with GAD, was associated with expending less effort in achievement-related domains, advancing our understanding of how MDD and GAD affect day-to-day experiences with major life roles.

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