

# Criterion validity of the Multidimensional Scale of Irrational Beliefs (MSIB) with respect to anxiety, depression, and life satisfaction



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## Abstract

Using a sample of 200 participants, this study seeks to establish criterion validity of the Multidimensional Scale of Irrational Beliefs (MSIB), a newly developed, purely cognitive measure of irrational beliefs. As predicted by Rational Emotive Behavior Therapy, scores on the MSIB are correlated highly and positively with scores on Beck's Depression Inventory and the trait scale of the State-Trait-Anxiety Inventory. Moreover, analyses revealed medium-sized negative correlations with life satisfaction. Each of these relations is shown to be unaffected by age, sex, and social desirability. Differential associations between subdimensions of the MSIB with criteria are discussed regarding the separability of irrationality concepts.

## Introduction

According to the theory of Rational-Emotive Behavior Therapy (REBT) by Albert Ellis (1962), the response to a certain event depends mainly on how this event is perceived and put in relation to an individual's belief system. Rational beliefs are proposed to lead to adaptive emotions while irrational beliefs should lead to maladaptive emotions. Empirical evidence indicates that there is indeed a connection between irrationality and maladaptive emotions, such as anxiety and depression (e.g., Spörrle & Försterling, 2007), and that life satisfaction is inversely related to irrationality (e.g., Ciarrochi & West, 2004). The Multidimensional Scale of Irrational Beliefs (MSIB; Strobel, Bekk, Fischer, Spörrle, & Försterling, 2008) is a newly developed measure of irrationality capturing three core dimensions of irrationality according to Ellis' (2003) most recent conceptualization: demandingness, negative self-evaluation, and low frustration tolerance. Besides its high content validity and parsimoniousness, the MSIB has shown high reliability and convergent validity with respect to earlier irrationality measures. The present study aims at establishing criterion validity of the MSIB by investigating its relation with anxiety, depression, and life satisfaction while controlling for social desirability.

## Method

### Participants

The sample consisted of  $N = 200$ , aged 16 to 85 years ( $M = 31.3$ ,  $SD = 11.9$ ).

### Measures

In this study, the Multidimensional Scale of Irrational Beliefs (MSIB; 18 items) was used together with the trait section of the State-Trait-Anxiety Inventory (STAI; Laux, Glanzmann, Schaffner, & Spielberger, 1981), the Beck Depression Inventory (BDI; Hautzinger, Bailer, Worall, & Keller, 1995), and the satisfaction with life scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985) as criterion variables. To control for social desirability, we used the Crowne-Marlowe Social Desirability Scale (Lück & Timeaus, 1969). Due to its reported low reliability, we used four additional items from the social-desirability-scale-17 (Stöber, 1999).

### Procedure

Participants completed an online questionnaire after following a link which was sent out via e-mail as well as put on a special web site proposing various psychological online studies.

## Results

### Reliabilities were high for all subscales and the total scale

The internal consistencies were high for the total MSIB (Cronbach's  $\alpha = .94$ ) and its subscales (demandingness:  $\alpha = .85$ ; negative self-evaluation:  $\alpha = .90$ ; low frustration tolerance:  $\alpha = .85$ ). Reliabilities of the scales assessing trait anxiety ( $\alpha_{STAI} = .92$ ), depression ( $\alpha_{BDI} = .87$ ), life satisfaction ( $\alpha_{SWLS} = .88$ ) and social desirability ( $\alpha_{SDS} = .74$ ) ranged from satisfactory to high.

### Correlations with external criteria were medium to high

Correlations of irrationality with the criterion variables (anxiety, depression, and life satisfaction) were all medium to high and in the expected direction and significant (with the only exception of the correlation between demandingness and life satisfaction which was only marginally significant). Overall, correlations with external criteria were lowest for demandingness.

### The MSIB predicts external criteria while controlling for sex, age, and social desirability

Three separate blockwise entry regression analyses were conducted with each of the relevant outcome criteria (anxiety, depression, and life satisfaction) as dependent variables in order to test whether irrationality predicts these variables when age, sex, and social desirability are controlled for. In the first step, age, sex, and social desirability were included as predictors. In a second step, the three irrationality dimensions were added as predictors. For all three criterion variables, the MSIB substantially added predictive value over and above that of age, sex, and social desirability.

	MSIB-D	MSIB-N	MSIB-L	STAI	BDI	SWLS	SDS
MSIB-D	(.85)	.60	.74	<b>.39</b>	<b>.32</b>	<b>-.13</b>	<b>-.10</b>
MSIB-N	.68	(.90)	.84	<b>.64</b>	<b>.51</b>	<b>-.29</b>	<b>-.27</b>
MSIB-L	.87	.96	(.85)	<b>.63</b>	<b>.52</b>	<b>-.31</b>	<b>-.29</b>
STAI	<b>.44</b>	<b>.71</b>	<b>.71</b>	(.92)	.73	-.61	-.29
BDI	<b>.37</b>	<b>.58</b>	<b>.61</b>	.81	(.87)	-.56	-.22
SWLS	<b>-.15</b>	<b>-.33</b>	<b>-.36</b>	-.68	-.65	(.88)	.18
SDS	-.13	-.33	-.37	-.35	-.27	.22	(.74)

Diagonal: Internal consistency (Cronbach's  $\alpha$ ). Right hand side: Pearson correlations. Left hand side: Correlations corrected for attenuation (double correction). Correlations marked with an ~ were not significant. MSIB-D – demandingness, MSIB-N – negative self-evaluation, MSIB-L – low frustration tolerance; STAI – State-Trait anxiety inventory (anxiety); BDI – Beck Depression Inventory (depression); SWLS – Satisfaction With Life Scale (life satisfaction), SDS – social desirability scale (social desirability). Correlations with  $|r| > .13$  are significant,  $p < .05$ .

		step 1 predictors: sex, age, social desirability	step 2 predictors: sex, age, social desirability irrationality
anxiety	$R^2$	.15 $F(3,196) = 11.88; p < .001$	.46 $F(6,193) = 27.46; p < .001$
	$R^2_{\text{change}}$		<b>.31</b> $p < .001$
depression	$R^2$	.07 $F(3,196) = 4.71; p < .01$	.33 $F(6,193) = 15.65; p < .001$
	$R^2_{\text{change}}$		<b>.26</b> $p < .001$
life satisfaction	$R^2$	.04 $F(3,196) = 2.61; n.s.$	.14 $F(6,193) = 5.40; p < .001$
	$R^2_{\text{change}}$		<b>.11</b> $p < .001$

## Discussion & Conclusion

- Results indicate high criterion validity of the MSIB with respect to anxiety, depression, and life satisfaction.
- The MSIB predicts these criteria over and above sex, age, and social desirability.
- Correlations with external criteria are consistently lowest for demandingness, yielding the question of how this irrationality facet is different from the other facets. This issue is to be investigated in further studies.
- Discriminant validity of demandingness with respect to its possible functional correlates (e.g., perfectionism, need for achievement...) is to be investigated.
- The MSIB is to be validated in specific populations (e.g., psychiatric patients).
- Predictive validity of the MSIB should be addressed in longitudinal studies.

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