



# Misunderstood Stoicism: The negative Association Between Stoic Ideology and well-Being

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## Abstract

Ancient philosophy proposed a wide range of possible approaches to life which may enhance well-being. Stoic philosophy has influenced various therapeutic traditions. Individuals today may adopt an approach to life representing a naive Stoic Ideology, which nevertheless reflects a misinterpretation of stoic philosophy. How do these interpretations affect well-being and meaning in life? We examine the differential effects of Stoic Ideology on eudaimonic versus hedonic well-being across three cultural contexts. In this pre-registered study, across samples in New Zealand ( $N=636$ ), Norway ( $N=290$ ), and the US ( $N=381$ ) we found that a) Stoic Ideology can be measured across all three contexts and b) Converging evidence that Stoic Ideology was negatively related to both hedonic well-being and eudaimonic well-being. Focusing on specific relationships, we found especially pronounced effects for Taciturnity (the desire to not express emotions) and Serenity (the desire to feel less emotions). Despite being a misinterpretation of stoic philosophy, these findings highlight the important role of individuals' orientations to emotional processing for well-being.

**Keywords** Stoic Ideology · Stoicism · Well-being · Orientations to happiness, cross-cultural

## 1 Introduction

Stoic philosophy has long influenced psychology, but little attention has been paid to how individuals differ in their endorsement of stoic beliefs (for a thorough review of ancient Stoicism and modern revivals we recommend Becker, 2017; Inwood, 2003).

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Stoic thought has profoundly influenced Cognitive Behavioral Therapy (Robertson, 2016, 2019) and plays an important role in the treatment of anxiety and depression (Watts et al., 2015). This is not only an implicit connection, but explicitly acknowledged by the founders of Cognitive Behavioral Therapy and Rational Emotive Behavior Therapy. Both Ellis and Beck referenced stoic philosophy and philosophers as underpinning their respective therapeutic approaches, and explicitly recognized that stoic traits might be beneficial for well-being (Beck, 1979; Ellis, 1962). Nevertheless, while Stoicism in philosophy captures a rich belief system, stoic ideology (which is often shortened to Stoicism) in psychology describes a naïve ideology held by individuals which centers around emotional non-reactivity and non-expression (Pathak et al., 2017; Wagstaff & Rowledge, 1995). In contrast to a thoughtful engagement with negative thoughts and cultivating moral ideals in one's life, this naïve ideology uses the term stoicism to focus on a more narrowly defined suppression of emotional content. Conceptually, stoic ideology therefore represents a misrepresentation of the stoic philosophical system, reducing its intellectual complexity into isolated beliefs on emotion non-expression and suppression. An important question is whether these naïve ideologies nevertheless show some positive associations with well-being. To the extent that this naïve ideology draws upon a layperson's perspective of the philosophical system, it may capture some of those ideas that are beneficial for well-being and have been incorporated in modern therapeutic interventions.

Initial scales measuring this naïve stoic ideology focused on a one-dimensional construct assessed by past behaviors (for a review of scales see Pathak et al., 2017). Recently a multi-faceted scale of stoic ideology has been developed, the Pathak-Wieten Stoicism Ideology Scale (PWSIS Pathak et al., 2017). This scale assesses naïve stoic ideology comprised of four facets, Stoic Taciturnity (the belief that emotions should not be expressed), Stoic Serenity (the belief that strong emotions should not be felt), Stoic Endurance (the belief that physical suffering should be endured), and Death Acceptance (accepting mortality, rather than fearing it). The PWSIS captures elements of Stoic philosophy understood through modern lay perspectives, mostly focusing on emotion expression and regulation. Importantly, the PWSIS captures what could be called naïve stoic ideologies, entailing that it is not expected that individuals scoring high on it have systematic or explicit knowledge of Stoicism as ordered school of thought. The fact that the PWSIS measures these naïve ideologies, precludes the investigation of some aspects of stoic thinking that are important in the classic philosophical system. Examples include stoic values, beliefs about agency, or emphasis on emotional control in stressful situations (emotional control was originally a facet of the PWSIS, but showed unfavorable psychometric properties). While the authors of the original scale found that the overall PWSIS-score is positively associated with participants' self-evaluation as a Stoic, it was not clear whether participants refer to stoic in common language or Stoic in a philosophical sense. A related point has been raised by Moore and colleagues (2013), whom critically pointed out how the term Stoic has been detached from its philosophical roots and does not represent what the term originally encompassed.

Research examining the association of previous measures of Stoic Ideology, on which the PWSIS builds, has shown negative association of Stoic Ideology and life satisfaction as well as positive associations between Stoic Ideology and depression (Bei et al., 2013; Murray et al., 2008). Overall, this might lead to the conclusion that embracing Stoic Ideology reduces well-being. Nevertheless, the previous research on Stoic Ideology and well-being has been limited in the scope of the outcomes under study, primarily by ignoring important distinctions in the conceptualization of well-being in contemporary psychology.

## 2 Eudaimonic and Hedonic Well-being

The two major dimensions of well-being identified in both philosophy and psychology are Hedonia and Eudaimonia (Ryan & Deci, 2001). Hedonic well-being is defined as experiencing subjective happiness, positive feelings, and the absence of negative feelings. Overall, hedonic well-being could be summarized as a life full of pleasure and free of pain. This is contrasted with eudaimonic well-being which emphasizes meaning and purpose in life. The distinction of eudaimonic and hedonic well-being has been shown to differentially relate to several variables such as long-term orientation (Huta & Ryan, 2010; Joshanloo et al., 2020; Vittersø & Søholt, 2011), developmental changes (LeFebvre & Huta, 2021), and might also be differentially related to health outcomes (Pancheva et al., 2021). Nevertheless, Eudaimonia and Hedonia tend to be correlated at very high levels (Extremera et al., 2011; Fowers et al., 2010; Yoon et al., 2015). Taken together, these findings suggest that while eudaimonic and hedonic well-being may not necessarily be independent, they do appear to be the results of different underlying psychological processes and may relate to different important life outcomes (Huta, 2016).

Mirroring the eudaimonic vs. hedonic distinction in well-being research overall, psychologists have identified three major orientations to happiness (Peterson et al., 2005), a focus on pleasure (Hedonia), a focus on meaning (Eudaimonia), and a focus on engagement in life (flow, focusing on absorption rather than pleasure or meaning). Endorsing a specific orientation does not necessarily entail obtaining the corresponding aspect of well-being, but indicates behavioral preferences towards certain well-being related goals (Henderson et al., 2014). Hence, the orientation to happiness complements the hedonic vs. eudaimonic experience of well-being by capturing both the cognitive and behavioral orientation towards well-being, which may shape how individuals experience their emotional life.

## 3 Stoic Ideology and Well-being.

The link between Stoic Ideology and well-being has been largely investigated through a hedonic lens (e.g., Murray et al., 2008) and was found to negatively relate to life satisfaction and positively to depression (Bei et al., 2013; Murray et al., 2008). While this negative association of Stoic Ideology might be true for hedonic well-being, individuals high in Stoic Ideology might prioritize meaning over pleasure, which should result in a positive association with eudaimonic well-being. For example, individuals high on Stoic Ideology avoid strong emotions, positive as well as negative, leading to intermediate or low levels of hedonistic well-being. Considering the importance of meaning within stoic philosophy, such individuals may report higher levels of meaning and purpose, independent of pleasure. While no research has explored the direct association between Stoic Ideology and eudaimonic well-being, some observations in previous research provide some preliminary insight. For example, individuals labelled as “stoic” might subordinate hedonic well-being to eudaimonic goals (for example hiding ill health to retain freedom in older adults, for a discussion of the difficulties in attributing the stoic label see: Moore et al., 2013). Currently no research is available that directly and explicitly compares the associations of Stoic Ideology with hedonic and eudaimonic well-being or orientations to happiness. Eudaimonic well-being is an essential part of overall well-being (Ryan & Deci, 2001) and motivations

to attain each aspect have been shown to vary substantially within the population (LeFebvre & Huta, 2021). Hence, we believe it is important to expand the examination of Stoic Ideology beyond hedonic well-being, to obtain a more holistic picture of its association with well-being, including the eudaimonic meaning component, which should be more central to Stoic Ideology.

## 4 Aims and Hypotheses of the Current Study

Across three countries, we aim to assess the association between Stoic Ideology and the two higher order aspects of well-being. Based on previous research we predicted that 1) Stoic Ideology would have a greater negative association with hedonic well-being compared to eudaimonic well-being, and that 2) Stoic Ideology would be more negatively associated with orientation to hedonic well-being than orientation to eudaimonic well-being.<sup>1</sup> Collecting data from three study sites, we also provide new information on the cross-cultural validity and comparability of these measures.

## 5 Methods

### 5.1 Open Science Statement

All code, materials, and data are available on the OSF. In addition to the variables reported here we also collected additional descriptive statistics about participants' mindfulness practice, meditation practice, yoga practice, and religiousness in New Zealand. These variables are available in the public data on the OSF (<https://osf.io/r7fye/>).

### 5.2 Participants

Samples in the USA, New Zealand, and Norway were drawn from university populations, utilizing convenience sampling. The total sample in the US ( $N=381$ ) had a mean age of 19.52 ( $SD=2.61$ ) and was majority female (59.32%). The total sample in the New Zealand ( $N=636$ ) had a mean age of 19.06 years ( $SD=3.12$ ) and was majority female (75%). Similarly, the Norwegian sample ( $N=290$ ) had a mean age of 25.08 ( $SD=8.39$ ) and was majority female (69.31%). Ethical approval for the studies was granted by the responsible ethics bodies at each collection site and consent was given by all participants included in the study.

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<sup>1</sup> Our pre-registration (<https://osf.io/w4b6t>) focused on positive associations of Stoic philosophical beliefs. As outlined in the introduction to this manuscript the PWSIS captures Stoic ideology, which represents an ideological belief system rather than adherence to the tenants of stoic philosophy. Our focus in this paper, therefore, is on the differential effects of Stoic Ideology on well-being. We show the results for our pre-registered analyses on the OSF.

### 5.3 Material

**Stoic Ideology.** We operationalized Stoic Ideology using the twelve item Pathak-Wieten Stoicism Ideology Scale (PWSIS Pathak et al., 2017). The scale measures four components: Endurance (e.g., “I expect myself to hide my aches and pains from others.”), Taciturnity (e.g., “I don’t believe in talking about my personal problems.”), Serenity (e.g., “I would prefer to be unemotional.”), and Death Acceptance (e.g., “I would not allow myself to be bothered by the fear of death.”). All items were measured on a scale from 1 (“Disagree”) to 5 (“Agree”). Before the main analysis all items were recoded to range from -2 to +2 and averaged, following the original scoring instructions.

### 5.4 Orientation to Happiness.

We measured participants orientation to happiness using the eighteen-item orientation to happiness questionnaire (Peterson et al., 2005). This questionnaire assesses three dimensions (the current study focused on pleasure and meaning): “A life of pleasure,” “A life of meaning,” and “A life of engagement.” The six items per scale were rated on a 6-point Likert-scale ranging from 1 (“Very much unlike me”) to 6 (“Very much like me”). Example items for each dimension are: “Life is too short to postpone the pleasures it can provide.” (Pleasure), “I have a responsibility to make the world a better place.” (Meaning).

## 6 Eudaimonic Well-being.

### 6.1 Flourishing

The Flourishing scale is an eight-item measure assessing individuals self-perceived success in associations as well as self-esteem, purpose, and optimism (Diener et al., 2010). Participants responded on a Likert-scale from 1 (“Strongly disagree”) to 7 (“Strongly agree”). An example item is “I am a good person and live a good life.”

### 6.2 Meaning in Life.

The Meaning in Life Questionnaire (Steger et al., 2006) assesses the presence of meaning as well as the search for meaning, using ten items measured on a six-point Likert-scale ranging from 1 (“Absolutely untrue”) to 6 (“Absolutely true”). To measure eudaimonic well-being we used the five-item presence of meaning sub-scale, separating out the search for meaning sub-scale as it is conceptually different. An example item is “I understand my life’s meaning.”

## 7 Hedonic Well-being.

### 7.1 Subjective Happiness

The subjective happiness scale (Lyubomirsky & Lepper, 1999) is a four-item measure of global happiness measured on a Likert-scale from 1 to 6. The item anchors are relative to the items, the first pair of items are anchored at 1 (Less happy) and 7 (More happy), the second pair of items are anchored at 1 (Not at all) to 6 (A great deal).

### 7.2 Satisfaction With Life.

The Satisfaction with Life Scale (Diener et al., 1985) is a five-item measure of present, global life satisfaction, which comprise a cognitive judgment of a person's quality of life. Participants responded on a Likert-scale from 1 ("Strongly disagree") to 7 ("Strongly agree"). An example item is "I am satisfied with my current life."

As the scales were measured on different scale lengths and to allow comparability, all well-being variables and orientation to happiness were transformed to POMP (percentage of maximum possible) scores ranging from 0–100.

## 8 Equivalence of Measures

To ensure the cross-cultural validity of our measures, we examined the equivalence of measures using Multi-Group Confirmatory Factor Analysis (MG-CFA) on the item-level data. To test for the equivalence of the measures we fitted a two-factor model of well-being, a model of Stoic Ideology with a higher order stoicism factor, and separate models for each OTH- (Orientation to Happiness) dimensions as they were modeled as uncorrelated in the original study. Following established procedures (Fischer & Karl, 2019), we initially fitted a model across countries in which the structure was fixed, but loadings and intercepts were allowed to vary (configural equivalence). Subsequently we constricted this model by first fixing loadings to be equal across countries (metric equivalence), and finally constraining the intercept to be equal across countries (scalar equivalence). While configural equivalence only allows for the comparison of structures between cultures, metric equivalence allows for the comparison of correlations between constructs, and scalar equivalence is needed for direct mean comparisons.

All measures showed good fit and at least partial metric equivalence across samples, which allows for the comparison of associations between constructs between countries. We did not find scalar equivalence, which means that we cannot directly compare means due to the potential presence of intercept-level biases. We show the model fit for all models in Table 1. Information on reliability is presented in Table 2 (some facets of the PWSIS scale and the OTH scale showed low reliability similar to previous validation studies, we retained all items due to the brevity of the measures and to allow for comparability with other studies). Finally, the inter-correlation of all measures is shown in Table 3.

**Table 1** Equivalence of the measures across the samples

Level	CFI	RMSEA	LC	UC	SRMR	$\Delta$ CFI
<i>Stoic-Ideology</i>						
Configural	.9469	.0596	.0517	.0675	.0479	
Metric	.9372	.0605	.0532	.0679	.0610	.0097
Scalar	.8889	.0774	.0707	.0841	.0720	.0483
<i>Well-being</i>						
Configural	.9439	.0593	.0550	.0635	.0446	
Metric	.9350	.0618	.0577	.0658	.0721	.0089
Scalar	.8852	.0802	.0765	.0839	.0871	.0499
<i>OTH-Eudaimonic</i>						
Configural	.9498	.0980	.0787	.1182	.0421	
Metric	.9408	.0895	.0730	.1065	.0539	.0090
Scalar	.8869	.1087	.0949	.1229	.0776	.0539
<i>OTH-Hedonic</i>						
Configural	.9369	.0948	.0764	.114	.0416	
Metric	.9327	.0915	.0739	.1097	.0500	.0043
Scalar	.8890	.1021	.0875	.1172	.0703	.0436

All item-level models were fitted with a MLR estimator to account for multi-variate non-normality. For OTH-Meaning the items “My life serves a higher purpose.” and “My life has a lasting meaning.”. For OTH-Pleasure the loadings of the items “I go out of my way to feel euphoric.”, “Life is short – eat dessert first.”, and “I love to do things that excite my senses.” were allowed to freely vary between samples

## 9 Results

### 9.1 Hypothesis 1 (Negative Association between Stoic Ideology and Hedonic Well-being)

To test our first hypothesis, we ran a path-model with observed indicators and 1000 bootstraps in which Stoic Ideology predicted Eudaimonic and Hedonic well-being across all countries. Again, we allowed paths to vary freely across samples. We compared the path between Eudaimonic and Hedonic well-being in each country using a Wald’s test (see Fig. 1). Overall, we found similar negative associations between Stoic Ideology, Hedonic and Eudaimonic well-being in the US ( $W=1.222$ ,  $p=0.269$ ) and Norway ( $W=0.021$ ,  $p=0.884$ ). In New Zealand, we found that Stoic Ideology had a substantially more negative association with Hedonic than Eudaimonic well-being ( $W=6.056$ ,  $p=0.014$ ). We explored this association on a facet level of Stoic Ideology (Fig. 2) and found that for Eudaimonic the association seemed to mostly be driven by Serenity and Taciturnity. In contrast, for Hedonic well-being, we found a consistent negative association of Taciturnity with Hedonic well-being, but the association with Serenity was only significant in the US. Finally, Endurance showed a significant negative association with Hedonic well-being in New Zealand, which was in contrast to our other samples.

**Table 2** Reliability of Measures in the Study

Measure	Country	$\alpha$	$\omega$
Endurance	NO	.589[.507, .671]	.602[.523, .682]
Taciturnity	NO	.550[.462, .638]	.564[.473, .654]
Serenity	NO	.639[.567, .710]	.647[.577, .718]
Death Acceptance	NO	.707[.649, .764]	.707[.649, .766]
Stoic Ideology	NO	.779[.742, .817]	.775[.736, .814]
Satisfaction with Life	NO	.858[.833, .882]	.858[.832, .885]
Subjective Happiness	NO	.864[.840, .888]	.866[.841, .892]
Flourishing	NO	.857[.832, .881]	.863[.839, .887]
Meaning Presence	NO	.797[.757, .837]	.833[.803, .863]
OTH Eudaimonic	NO	.673[.615, .731]	.690[.635, .745]
OTH Hedonic	NO	.560[.480, .641]	.605[.536, .674]
Endurance	NZ	.793[.764, .821]	.793[.764, .821]
Taciturnity	NZ	.749[.715, .783]	.752[.718, .785]
Serenity	NZ	.587[.529, .644]	.627[.574, .679]
Death Acceptance	NZ	.705[.665, .746]	.717[.678, .755]
Stoic Ideology	NZ	.811[.788, .833]	.814[.792, .836]
Satisfaction with Life	NZ	.864[.848, .880]	.866[.850, .883]
Subjective Happiness	NZ	.862[.845, .880]	.867[.849, .884]
Flourishing	NZ	.886[.872, .899]	.888[.874, .901]
Meaning Presence	NZ	.849[.831, .868]	.853[.835, .871]
OTH Eudaimonic	NZ	.788[.763, .814]	.794[.769, .819]
OTH Hedonic	NZ	.767[.739, .794]	.769[.740, .797]
Endurance	US	.779[.741, .818]	.782[.744, .820]
Taciturnity	US	.738[.692, .783]	.739[.693, .784]
Serenity	US	.661[.602, .719]	.667[.608, .726]
Death Acceptance	US	.635[.571, .698]	.647[.586, .708]
Stoic Ideology	US	.817[.790, .845]	.822[.796, .849]
Satisfaction with Life	US	.865[.844, .886]	.869[.848, .890]
Subjective Happiness	US	.889[.872, .907]	.889[.870, .907]
Flourishing	US	.897[.881, .912]	.900[.884, .915]
Meaning Presence	US	.877[.858, .896]	.879[.860, .898]
OTH Eudaimonic	US	.779[.744, .814]	.784[.751, .818]
OTH Hedonic	US	.807[.777, .837]	.812[.783, .842]

OTH – Orientation to Happiness

## 9.2 Hypothesis 2 (Negative Association between Stoic Ideology and Hedonic Orientation)

To test our second hypothesis, we ran a path-model with observed indicators and 1000 bootstraps in which Stoic Ideology predicted Eudaimonic and Hedonic Orientation across all countries. We allowed paths to vary freely between samples. We compared the path between Eudaimonic and Hedonic Orientation in each country using a Wald's test (see Fig. 3). Overall, we found similar negative associations between Stoic Ideology, Hedonic and Eudaimonic Orientation in the US ( $W=0.839$ ,  $p=0.360$ ) and New



**Table 3** Mean, Standard Deviation, and Correlation of Measures in each Country

	M	SD	1	2	3	4	5	6	7	8	9	10
US												
1 Endurance	0.04	1.08										
2 Taciturnity	0.05	1.06	.66***									
3 Serenity	-0.44	0.95	.46***	.56***								
4 Death Acceptance	-0.03	0.98	.20***	.12*	.14**							
5 Stoic Ideology	-0.10	0.74	.82***	.82***	.74***	.50***						
6 Satisfaction with Life	59.24	22.87	-0.10	-0.16**	-0.23***	-0.06	-0.19***					
7 Subjective Happiness	59.41	23.97	-0.17***	-0.27***	-0.30***	-0.05	-0.27***	.64***				
8 Flourishing	74.29	17.21	-0.21***	-0.28***	-0.32***	-0.10*	-0.31***	.68***	.68***			
9 Meaning Presence	57.92	22.54	-0.20***	-0.26***	-0.25***	.02	-0.24***	.58***	.53***	.69***		
10 OTH Eudaimonic	65.35	19.21	-0.10	-0.14**	-0.20***	.01	-0.15**	.44***	.42***	.61***	.61***	
11 OTH Hedonic	61.68	19.26	-0.10*	-0.15**	-0.24***	-0.10	-0.20***	.28***	.37***	.38***	.25***	.30***
Norway												
1 Endurance	-0.17	0.87										
2 Taciturnity	-0.50	0.84	.65***									
3 Serenity	-0.76	0.87	.29***	.47***								
4 Death Acceptance	-0.65	1.02	.25***	.25***	.23***							
5 Stoic Ideology	-0.52	0.64	.75***	.80***	.68***	.64***						
6 Satisfaction with Life	60.84	18.98	-0.15*	-0.26***	-0.19***	-0.07	-0.23***					
7 Subjective Happiness	61.24	19.15	-0.09	-0.23***	-0.18**	-0.05	-0.19**	.69***				
8 Flourishing	74.62	13.96	-0.15*	-0.26***	-0.23***	-0.11	-0.26***	.68***	.69***			
9 Meaning Presence	60.60	17.26	-0.08	-0.21***	-0.18**	.02	-0.15*	.52***	.52***	.56***		
10 OTH Eudaimonic	60.92	17.10	-0.07	-0.18**	-0.21***	.09	-0.12	.23***	.29***	.37***	.59***	
11 OTH Hedonic	51.85	14.90	.04	.06	-0.02	.03	.04	.06	.04	.01	.04	.18**

**Table 3** (continued)

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10
New Zealand												
1 Endurance	-0.03	1.05										
2 Taciturnity	-0.03	1.02	.65***									
3 Serenity	-0.61	0.86	.35***	.53***								
4 Death Acceptance	-0.21	1.02	.21***	.18***	.14***							
5 Stoic Ideology	-0.22	0.71	.79***	.83***	.68***	.55***						
6 Satisfaction with Life	60.10	21.80	-.27***	-.32***	-.20***	-.08	-.30***					
7 Subjective Happiness	62.87	25.24	-.29***	-.35***	-.23***	-.12**	-.34***	.60***				
8 Flourishing	72.98	15.60	-.29***	-.39***	-.32***	-.09*	-.38***	.67***	.65***			
9 Meaning Presence	57.50	24.46	-.19***	-.26***	-.15***	.05	-.19***	.50***	.48***	.60***		
10 OTH Eudaimonic	70.36	20.69	-.12**	-.23***	-.21***	.04	-.18***	.31***	.34***	.56***	.53***	
11 OTH Hedonic	75.95	17.66	-.09*	-.08	-.09*	-.05	-.11**	.27***	.27***	.34***	.16***	.24***

\*\*\**p* < .001, \*\**p* < .01, \**p* < .05

Association between Stoic Ideology and Dimensions of Happiness.

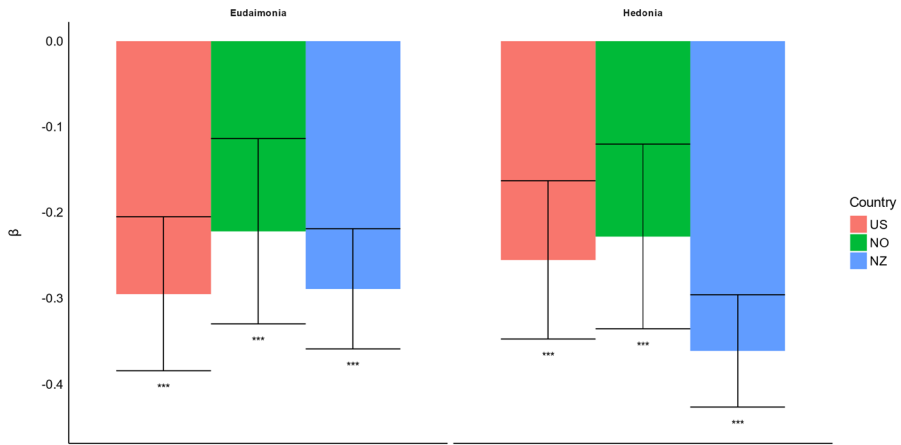


Fig. 1 Association between Stoic Ideology and Dimensions of Happiness

Association between Stoic Ideology facets and Dimensions of Happiness.

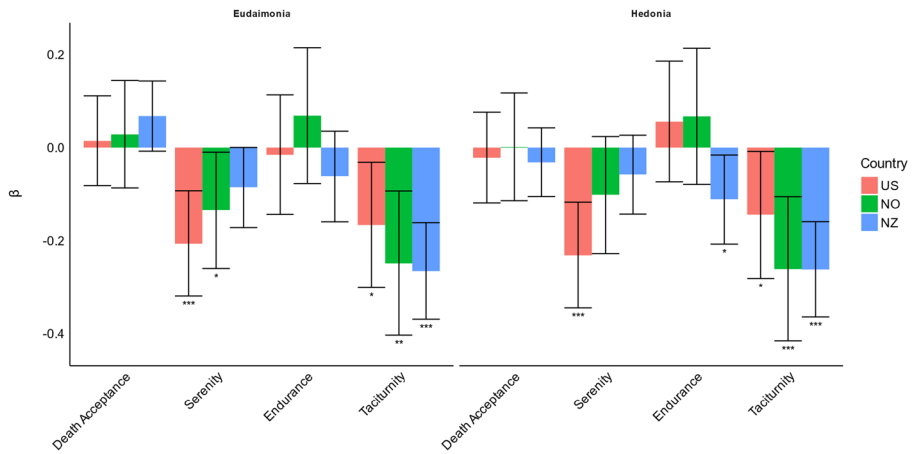
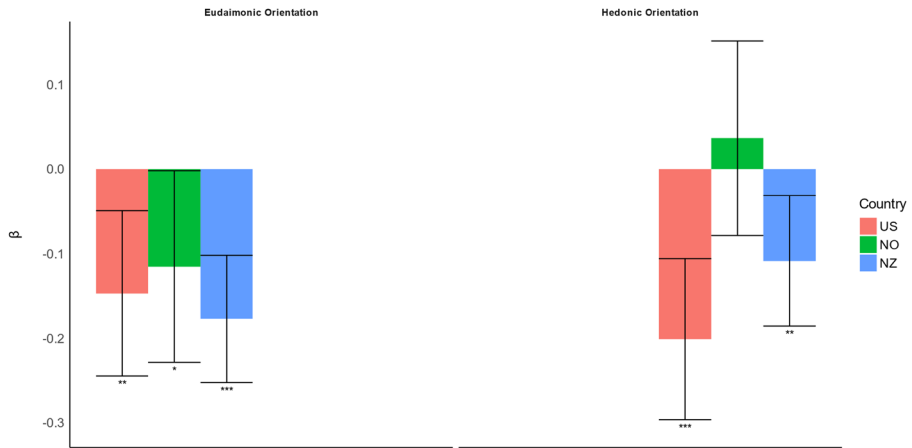


Fig. 2 Association between Stoic Ideology facets and Dimensions of Happiness

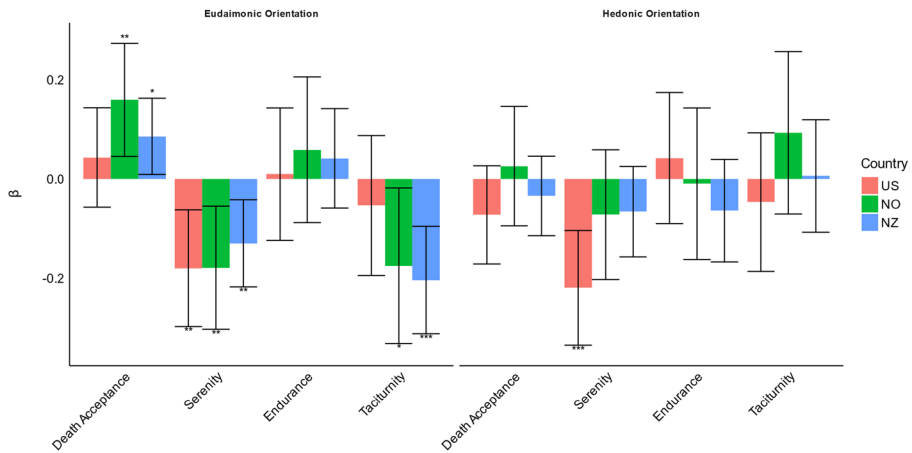
Zealand ( $W=2.008, p=0.156$ ). In Norway we found that Stoic Ideology had a substantially more negative association with Eudaimonic than Hedonic Orientation ( $W=4.145, p=0.042$ ). We explored this association on a facet level of Stoic Ideology (Fig. 4) and found that for Eudaimonic Orientation the association seemed to mostly be driven by Serenity and Taciturnity. Interestingly Death Acceptance showed a positive association with Eudaimonic Orientation. In contrast the picture was less clear for Hedonic Orientation with only one facet (Serenity) showing a significant negative association in one sample (US). Therefore, our second hypothesis did not find consistent support.

Association between Stoic Ideology and Orientations to Happiness.



**Fig. 3** Association between Stoic Ideology and Orientations to Happiness

Association between Stoic Ideology facets and Orientations to Happiness.



**Fig. 4** Association between Stoic Ideology facets and Orientations to Happiness

**Table 4** Model equivalence between male and female participants across all samples

CFI	RMSEA	LC	UC	SRMR	$\Delta$ CFI	$\Delta$ RMSEA	Level
.96	.05	.04	.06	.04			Configural
.96	.05	.04	.06	.04	.0007	.0022	Metric
.96	.05	.04	.06	.05	.0028	-.0001	Scalar

Differences in Stoic Ideology between male and female participants

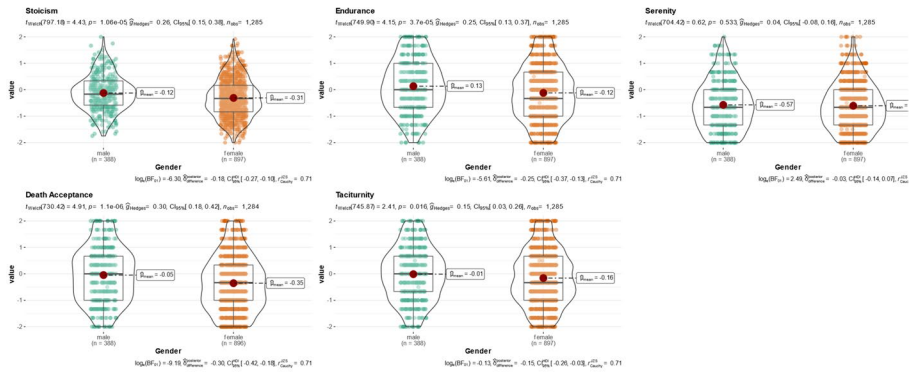


Fig. 5 Differences in Stoic Ideology between male and female participants

### 10 Explorative Analysis on Gender Differences in Stoic Ideology

To compare the difference between male and female participants across countries we initially repeated our equivalence test with gender as grouping variable. Overall, we found scalar equivalence between these groups allowing for a direct mean comparison. We show this result in Table 4.

Following this we compared the mean level differences between male and female participants for Stoic Ideology and the facets (We show the results in Fig. 5). In line with the original development article of the PWSIS we found that male participants scored significantly higher in Stoic Ideology and all its facets with the exception of Serenity. Similarly, to the original article we found that both male and female participants scored closely to the scale middle-point.

### 11 Discussion

Across three cultures we investigated how a naïve stoic ideology, which captures a laypersons’ misunderstood Stoicism (as expressed in stoic ideology), might be associated with approaches to, and actual levels of, well-being. We initially predicted that stoic ideology would show a more negative association with hedonic compared to eudaimonic aspects of well-being. This was overall not confirmed. While we found that stoic ideology was more negatively associated with hedonic well-being in New Zealand, this was the only relationship in the predicted direction. Our findings, using the stoic ideology scale, are consistent with previous studies using similar measures of hedonic well-being (Bei et al., 2013; Murray et al., 2008). Importantly, on a facet level this effect was mostly driven by Taciturnity and Serenity for Eudaimonia and Hedonia. The exception was hedonic orientation to happiness which was only associated with Serenity. This pattern implies that the tendency and desire to suppress one’s problems, both experience and expression, is related to lower well-being, both hedonic and eudaimonic. Across the three countries the pattern of relationships was largely identical for higher order

stoic ideology with the potential exception of the association between stoic ideology and hedonic orientation in Norway. The traditional stereotype of Nordic cultures also features a rather stoic outlook on life, which emphasizes emotional control, doing ‘your own thing’ without complaining or expressing strong emotional reactions (Saville-Troike & Tannen, 1985; Stivers et al., 2009; Tsai & Chentsova-Dutton, 2003), stoic ideology might therefore be less related to orientations to well-being. Due to the cross-sectional nature of our study, we cannot untangle whether stoic ideology only influences responding, or, as some studies have indicated, has conceptually causal relationships to well-being, theoretically driven by reduced help-seeking for example (Kaukiainen & Kõlves, 2020; Rughani et al., 2011).

It is important to highlight that our hypotheses were based on a measure which captures stoic ideology as a naïve belief system, which does not represent the philosophical ethical system underpinning Stoicism. Current psychological measures of naïve stoic ideology do not capture the richness of the wider stoic belief system within classic philosophical discussions. We encourage researchers to make it explicitly clear when they are referring to Stoicism (the philosophical belief system) or stoic ideology (as captured in the Pathak-Wieten Stoic ideology scale) as an expression of a lay stoic ideological system. Future research should clarify the relationship between Stoicism and stoicism, to explore overlaps and divergences. Investigations into this area appear important, especially given the positive well-being effects of the aforementioned therapeutic approaches that are conceptually based in Stoicism (Beck, 1979; Ellis, 1962; Robertson, 2019), and the presumed malleability of stoic ideology (Pathak et al., 2017).

In future research, it would be essential to compare the relationship of the Pathak-Wieten scale empirically with measures incorporating a wider range of stoic attitudes and behaviors (centering around issues of controllability of the environment, and teleology of the universe). This is not to indicate that the Pathak-Wieten scale is not a useful tool to measure stoic ideology (but possibly not Stoicism). As we have shown here, the scale shows good measurement properties across the cultures included in our study, and reliably shows good fit across samples. From a psychometric perspective, it is a reliable and equivalent scale that can be used to compare correlation patterns across samples. The major question to be addressed in further research is what the instrument measures conceptually. As the lack of scalar invariance implies, the items measure potentially additional concepts across the different cultural contexts, which together with the philosophical questions, clearly requires further analyses and development.

At the same time, the measure provides important insight into potential determinants of reduced well-being. Given the consistent negative relationships that we found between stoic ideology and well-being across cultures, clinical practitioners might consider how these naïve beliefs could be built upon for beneficial health outcomes. Given the findings of negative relationships between both aspects of well-being and the Taciturnity and Serenity facets in particular, individuals might be encouraged to share personal problems in appropriate ways and to acknowledge emotions, rather than suppressing or ignoring emotional experiences. Our study also supports previous notions (Benita et al., 2020; Gross, 2013) that it might be beneficial for individuals’ well-being to engage in practices that foster an accepting or non-judgmental stance to their emotions, for example mindfulness practices (Dundas et al., 2017), rather than suppressing their emotions. Obviously, we are unable to point towards causal directions, but the therapeutic literature using stoic philosophy principles as well as related philosophical concepts, such as mindfulness, clearly suggests that such behavioral changes may have positive health consequences.

## 12 Limitations

Our current study was mostly limited by our samples, based on student populations. This limits the generalizability of our findings to the general population. However, it should be noted that the original instruments were largely developed in student samples, hence, our findings are compatible with previous research contexts. Further, we have no information on participants' exposure to stoic philosophy, which might alter the observed association between stoic ideology and well-being. Finally, the current study, in line with previous research, focused on well-being, but not specifically on affective components. Given the conceptual overlap between stoic ideology and affective experience, future research should examine the potential link between stoic ideology beliefs, well-being, and the potential mediation role of affective experience.

## 13 Conclusion

Overall, our study shows that a naive endorsement of stoic ideology might have negative well-being consequences. This finding holds important implications for clinical practice, because stoic ideology is thought to be malleable and responsive to interventions (Pathak et al., 2017) and to improve well-being. We found that while endorsement of stoic ideology might capture individual's orientation towards lay stoic beliefs, it does not capture individuals' skill in behaving in a stoic way consistent with the implied wider ethical and philosophical system that should lead to higher meaning and purpose in life. At best, a better understanding of stoic ideology can help practitioners to mold their interventions and education on stoic thought around individuals' existing naive stoic ideology and thereby help them to transform naive stoic ideology into a beneficial factor for well-being through the lens of explicit stoic philosophy and ethics.

**Author Contributions** The pre-registration, material, and analytical code for this study can be found on the OSF (<https://osf.io/r7fye/>) The authors made the following contributions. Johannes Alfons Karl: Conceptualization, Writing Original Draft Preparation, Writing—Review & Editing, Data Collection in NZ, Data Analysis; Paul Verhaeghen: Writing—Review & Editing, Data Collection in the US; Shelley N. Aikman: Writing—Review & Editing, Data Collection in the US; Stian Solem: Writing—Review & Editing, Translations of Measures, Data Collection in NO; Espen R. Lassen: Writing—Review & Editing, Translations of Measures, Data Collection in NO; Ronald Fischer: Writing—Review & Editing, Data Collection in NZ, Data Analysis.

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### Declarations

**Conflict of interest** All authors declare that they have no conflict of interest.

**Ethical Approval** The Ethics Committee of the Victoria University of Wellington reviewed and approved the research (#0,000,027,072).

**Consent to Participate** All participants provided informed consent before participating.

**Consent for Publication** All authors consent the publication of this work.

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## References

- Beck, A. T. (1979). *Cognitive Therapy of Depression*. Guilford Press.
- Becker, L. C. (2017). *A new stoicism*. Princeton University Press.
- Bei, B., Bryant, C., Gilson, K.-M., Koh, J., Gibson, P., Komiti, A., Jackson, H., & Judd, F. (2013). A prospective study of the impact of floods on the mental and physical health of older adults. *Aging & Mental Health*, 17(8), 992–1002. <https://doi.org/10.1080/13607863.2013.799119>
- Benita, M., Benish-Weisman, M., Matos, L., & Torres, C. (2020). Integrative and suppressive emotion regulation differentially predict well-being through basic need satisfaction and frustration: A test of three countries. *Motivation and Emotion*, 44(1), 67–81. <https://doi.org/10.1007/s11031-019-09781-x>
- Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment*, 49(1), 71–75. [https://doi.org/10.1207/s15327752jpa4901\\_13](https://doi.org/10.1207/s15327752jpa4901_13)
- Diener, E., Wirtz, D., Tov, W., Kim-Prieto, C., & won Choi, D., Oishi, S., & Biswas-Diener, R. (2010). New well-being measures: Short scales to assess flourishing and positive and negative feelings. *Social Indicators Research*, 97(2), 143–156. <https://doi.org/10.1007/s11205-009-9493-y>
- Dundas, I., Binder, P.-E., Hansen, T. G. B., & Stige, S. H. (2017). Does a short self-compassion intervention for students increase healthy self-regulation? A randomized control trial. *Scandinavian Journal of Psychology*, 58(5), 443–450. <https://doi.org/10.1111/sjop.12385>
- Ellis, A. (1962). *Reason and Emotion in Psychotherapy: A New and Comprehensive Method of Treating Human Disturbances*. Citadel Press.
- Extremera, N., Ruiz-Aranda, D., Pineda-Galán, C., & Salguero, J. M. (2011). Emotional intelligence and its relation with hedonic and eudaimonic well-being: A prospective study. *Personality and Individual Differences*, 51(1), 11–16. <https://doi.org/10.1016/j.paid.2011.02.029>
- Fischer, R., & Karl, J. A. (2019). A primer to (cross-cultural) multi-group invariance testing possibilities in R. *Frontiers in Psychology*, 10, 1507. <https://doi.org/10.3389/fpsyg.2019.01507>
- Fowers, B. J., Mollica, C. O., & Procacci, E. N. (2010). Constitutive and instrumental goal orientations and their relations with eudaimonic and hedonic well-being. *The Journal of Positive Psychology*, 5(2), 139–153. <https://doi.org/10.1080/17439761003630045>
- Gross, J. J. (2013). Emotion regulation: Taking stock and moving forward. *Emotion*, 13(3), 359–365. <https://doi.org/10.1037/a0032135>
- Henderson, L. W., Knight, T., & Richardson, B. (2014). The Hedonic and Eudaimonic Validity of the Orientations to Happiness Scale. *Social Indicators Research*, 115(3), 1087–1099. <https://doi.org/10.1007/s11205-013-0264-4>
- Huta, V. (2016). *Eudaimonic and Hedonic Orientations: Theoretical Considerations and Research Findings* (pp. 215–231). Springer, Cham. [https://doi.org/10.1007/978-3-319-42445-3\\_15](https://doi.org/10.1007/978-3-319-42445-3_15)
- Huta, V., & Ryan, R. M. (2010). Pursuing Pleasure or Virtue: The Differential and Overlapping Well-Being Benefits of Hedonic and Eudaimonic Motives. *Journal of Happiness Studies*, 11(6), 735–762. <https://doi.org/10.1007/s10902-009-9171-4>
- Inwood, B. (2003). *The Cambridge companion to the Stoics*. Cambridge University Press. <https://doi.org/10.1017/CCOL052177005X>
- Joshanloo, M., Jovanović, V., & Park, J. (2020). Differential Relationships of Hedonic and Eudaimonic Well-Being with Self-Control and Long-Term Orientation. *Japanese Psychological Research*, jpr.12276. <https://doi.org/10.1111/jpr.12276>
- Kaukiainen, A., & Kõlves, K. (2020). Too tough to ask for help? Stoicism and attitudes to mental health professionals in rural Australia. *Rural and Remote Health*, 20(2), 5399. <https://doi.org/10.22605/RRH5399>
- LeFebvre, A., & Huta, V. (2021). Age and Gender Differences in Eudaimonic, Hedonic, and Extrinsic Motivations. *Journal of Happiness Studies*, 22(5), 2299–2321. <https://doi.org/10.1007/s10902-020-00319-4>



- Lyubomirsky, S., & Lepper, H. S. (1999). A measure of subjective happiness: Preliminary reliability and construct validation. *Social Indicators Research*, 46(2), 137–155. <https://doi.org/10.1023/A:1006824100041>
- Moore, A., Grime, J., Campbell, P., & Richardson, J. (2013). Troubling stoicism: Sociocultural influences and applications to health and illness behaviour. *Health*, 17(2), 159–173. <https://doi.org/10.1177/1363459312451179>
- Murray, G., Judd, F., Jackson, H., Fraser, C., Komiti, A., Pattison, P., Wearing, A., & Robins, G. (2008). Big boys don't cry: An investigation of stoicism and its mental health outcomes. *Personality and Individual Differences*, 44(6), 1369–1381. <https://doi.org/10.1016/j.paid.2007.12.005>
- Pancheva, M. G., Ryff, C. D., & Lucchini, M. (2021). An Integrated Look at Well-Being: Topological Clustering of Combinations and Correlates of Hedonia and Eudaimonia. *Journal of Happiness Studies*, 22(5), 2275–2297. <https://doi.org/10.1007/s10902-020-00325-6>
- Pathak, E. B., Wieten, S. E., & Wheldon, C. W. (2017). Stoic beliefs and health: Development and preliminary validation of the Pathak-Wieten Stoicism Ideology Scale. *British Medical Journal Open*, 7(11), e015137. <https://doi.org/10.1136/bmjopen-2016-015137>
- Peterson, C., Park, N., & Seligman, M. E. P. (2005). Orientations to happiness and life satisfaction: The full life versus the empty life. *Journal of Happiness Studies*, 6(1), 25–41. <https://doi.org/10.1007/s10902-004-1278-z>
- Robertson, D. (2016). The Stoic influence on modern psychotherapy. In J. Sellars (Ed.), *The Routledge Handbook of the Stoic Tradition* (pp. 394–408). Routledge. <https://doi.org/10.4324/9781315771588-39>
- Robertson, D. (2019). The Philosophy of Cognitive-Behavioural Therapy (CBT): Stoic Philosophy as Rational and Cognitive Psychotherapy. *Routledge*. <https://doi.org/10.4324/9780429268700>
- Rughani, J., Deane, F. P., & Wilson, C. J. (2011). Rural adolescents' help-seeking intentions for emotional problems: The influence of perceived benefits and stoicism. *Australian Journal of Rural Health*, 19(2), 64–69. <https://doi.org/10.1111/j.1440-1584.2011.01185.x>
- Ryan, R. M., & Deci, E. L. (2001). On Happiness and Human Potentials: A Review of Research on Hedonic and Eudaimonic Well-Being. *Annual Review of Psychology*, 52(1), 141–166. <https://doi.org/10.1146/annurev.psych.52.1.141>
- Saville-Troike, M., & Tannen, D. (1985). *Perspectives on Silence*. Praeger.
- Steger, M. F., Frazier, P., Oishi, S., & Kaler, M. (2006). The meaning in life questionnaire: Assessing the presence of and search for meaning in life. *Journal of Counseling Psychology*, 53, 80–93. <https://doi.org/10.1037/0022-0167.53.1.80>
- Stivers, T., Enfield, N. J., Brown, P., Englert, C., Hayashi, M., Heinemann, T., Hoymann, G., Rossano, F., de Ruiter, J. P., Yoon, K.-E., & Levinson, S. C. (2009). Universals and cultural variation in turn-taking in conversation. *Proceedings of the National Academy of Sciences*, 106(26), 10587–10592. <https://doi.org/10.1073/pnas.0903616106>
- Tsai, J. L., & Chentsova-Dutton, U. (2003). Variation among European Americans in Emotional Facial Expression. *Journal of Cross-Cultural Psychology*, 34(6), 650–657. <https://doi.org/10.1177/0022022103256846>
- Vittersø, J., & Søholt, Y. (2011). Life satisfaction goes with pleasure and personal growth goes with interest: Further arguments for separating hedonic and eudaimonic well-being. *The Journal of Positive Psychology*, 6(4), 326–335. <https://doi.org/10.1080/17439760.2011.584548>
- Wagstaff, G. F., & Rowledge, A. M. (1995). Stoicism: Its relation to gender, attitudes toward poverty, and reactions to emotive material. *The Journal of Social Psychology*, 135(2), 181–184. <https://doi.org/10.1080/00224545.1995.9711421>
- Watts, S. E., Turnell, A., Kladnitski, N., Newby, J. M., & Andrews, G. (2015). Treatment-as-usual (TAU) is anything but usual: A meta-analysis of CBT versus TAU for anxiety and depression. In *Journal of Affective Disorders* (Vol. 175). Elsevier. <https://doi.org/10.1016/j.jad.2014.12.025>
- Yoon, E., Chang, C.C.-T., Clawson, A., Knoll, M., Aydin, F., Barsigian, L., & Hughes, K. (2015). Religiosity, spirituality, and eudaimonic and hedonic well-being. *Counselling Psychology Quarterly*, 28(2), 132–149. <https://doi.org/10.1080/09515070.2014.968528>