## Supplementary Material

## Additional information on the samples

## *Somatoform disorder*

In addition to the diagnosis of a SFD, further inclusion criteria were: 18-69 years old; sufficiently good German language skills. People were excluded if they had an acute life-threatening illness. Comorbid mental disorders were not excluded as long as somatic complaints were the primary diagnosis[[1]](#footnote-1). Participants were recruited in two university psychotherapeutic outpatient clinics (*n* = 46 and *n* = 5) as well as via flyers and public posts in private psychotherapeutic clinics and self-help groups (*n* = 10). One person had to be excluded due to diagnostic failure. Thus, the sample of people with SFD consisted of *N* = 60 people. About half of the sample (51.7%) met the criteria of a persistent somatoform pain disorder (F45.40) or chronic pain with somatic and psychological factors (F45.41); another 13.3% met the criteria of the undifferentiated somatoform disorder (F45.1); 11.6% the hypochondriacal disorder (F45.2); 8.3% the somatization disorder (F45.0); 8.3% the somatoform autonomic dysfunction (F45.3); and 3.3% other somatoform disorders (F.45.8). About two third (65.0%) had at least one comorbid diagnosis, with major depression being the most frequent comorbid mental disorder (40% of the entire SFD sample).

## *Depression*

In terms of a clinical control group, we examined people with a diagnosed major depressive disorder as assessed with the SCID interview according to DSM-IV. Further inclusion criteria were: age 18-69; sufficient German language skills. Participants were excluded if they had a diagnosed somatoform disorder as a comorbid diagnosis. We recruited 33 people with major depression from one university outpatient clinic, of whom one person had to be excluded due to diagnostic failure. The mean age of the 32 persons from the clinical control group was *M*= 42.22 ± 9.74 years, 78.1% were female. Of these, 37.5% had a major depressive episode as the primary diagnosis, and 62.5% a recurrent major depressive disorder. Further, 31.2% of the sample had at least one comorbid diagnosis, with similar frequencies of anxiety disorders, eating disorders, and personality disorders.

## *Healthy control group*

People were included in the healthy control group if they were between 18 and 69 years old, had sufficient German language skills, and did not meet the criteria of any current mental disorder as assessed with a SCID interview according to DSM-IV. For the healthy control group, we recruited 38 people. Of these, one person was excluded as a statistical outlier on the primary outcome (i.e., > 3 *SD* above/below the mean). The mean age of the healthy control group (*n* = 37) was *M*= 41.78 ± 11.26 years, 70.3% were female.

## Differences between samples

The three samples did not differ in sociodemographic variables, except for educational degrees (with higher educational degrees in the healthy control group than in the two clinical samples) and employment status (with more disabled people in the SFD sample than in the two control samples). The SFD group and the clinical control group did not differ in their somatic symptom burden (although both groups had significantly higher burden than the healthy sample). However, patients with SFD showed more excessive and disproportionate thoughts, feelings, and behaviors associated with somatic complaints than patients with depression.

## Detailed results for the degree of concern as a function of likelihood framing

***1:10,000 vs. 0.01% vs. ¬ 99.99%.*** The ANOVA indicated a significant main effect for the presentation form, *F*(2, 252) = 23.556, *p* < .001, ɳ²p= .158, 95% CI [.080, .235], with the likelihood of 99.99% for the absence of a serious disease causing less concern than the likelihood of 1:10,000, *t*(129) = 7.242, *p* < .001, *d* = 0.635, 95% CI [0.446, 0.823] an 0.01% for its presence, *t*(129) = 5.276, *p* < .001, *d* = 0.463, 95% CI [0.281, 0.643]. The degree of concern caused by the presentation form 1:10,000 was not different from 0.01%, *t*(129) = 1.747, *p* = .083, *d* = 0.153, 95% CI [-.020, 0.326]. The sample by presentation form interaction was not significant, *F*(4, 252) = 1.044, *p* = .385, ɳ²p= .016, 95% CI [0, .044].

***1:100 vs. 1% vs. ¬ 99%.*** The ANOVA indicated a significant main effect for the presentation form, *F*(2, 252) = 100.912, *p* < .001, ɳ²p= .445, 95% CI [.355, .516], with the likelihood of 99% for the absence of a serious disease causing less concern than the likelihood of 1:100, *t*(129) = 14.490, *p* < .001, *d* = 1.271, 95% CI [1.038, 1.501] and 1% for its presence, *t*(129) = 6.422, *p* < .001, *d* = 0.563, 95% CI [0.377, 0.747]. The presentation form 1:100 caused significantly more concern than 1%, *t*(129) = 8.757, *p* < .001, *d* = 0.768, 95% CI [0.571, 0.963]. The sample by presentation form interaction was not significant, *F*(4, 252) = .681, *p* = .605, ɳ²p= .011, 95% CI [0, .032].

***1:10 vs. 10% vs. ¬ 90%.*** The ANOVA indicated a significant main effect for the presentation form, *F*(2, 252) = 165.825, *p* < .001, ɳ²p= .568, 95% CI [.489, .627], with the likelihood of 90% for the absence of a serious disease causing less concern than the likelihood of 1:10, *t*(129) = 17.826, *p* < .001, *d* = 1.563, 95% CI [1.305, 1.819] and 10% for its presence, *t*(129) = 7.853, *p* < .001, *d* = 0.689, 95% CI [0.496, 0.879]. The presentation form 1:10 caused significantly more concern than 10%, *t*(129) = 11.057, *p* < .001, *d* = 0.970, 95% CI [0.760, 1.177]. The sample by presentation form interaction was not significant, *F*(4, 252) = 2.027, *p* = .091, ɳ²p= .031, 95% CI [0, .070].

***1:5 vs. 20% vs. ¬ 80%.*** The ANOVA indicated a significant main effect for the presentation form, *F*(2, 252) = 160.284, *p* < .001, ɳ²p= .560, 95% CI [.480, .619], with the likelihood of 80% for the absence of a serious disease causing less concern than the likelihood of 1:5, *t*(129) = 17.302, *p* < .001, *d* = 1.517, 95% CI [1.264, 1.769] and 20% for its presence, *t*(129) = 7.370, *p* < .001, *d* = 0.646, 95% CI [0.456, 0.834]. The presentation form 1:5 caused significantly more concern than 20%, *t*(129) = 10.943, *p* < .001, *d* = 0.960, 95% CI [0.751, 1.166]. The sample by presentation form interaction was not significant, *F*(4, 252) = 1.767, *p* = .136, ɳ²p= .027, 95% CI [0, .064].

***1:2 vs. 50% vs. ¬ 50%.*** The ANOVA indicated a significant main effect for the presentation form, *F*(2, 252) = 90.050, *p* < .001, ɳ²p= .417, 95% CI [.325, .490], with the likelihood of 50% for the absence of a serious disease causing less concern than the likelihood of 1:2, *t*(129) = 12.212, *p* < .001, *d* = 1.071, 95% CI [0.854, 1.286] and 50% for its presence, *t*(129) = 8.393, *p* < .001, *d* = 0.736, 95% CI [0.541, 0.929]. The presentation form 1:2 caused significantly more concern than 50%, *t*(129) = 6.173, *p* < .001, *d* = 0.541, 95% CI [0.356, 0.725]. The sample by presentation form interaction was not significant, *F*(4, 252) = .665, *p* = .617, ɳ²p= .010, 95% CI [0, .031].

## Exploratory findings

We exploratorily analyzed the associations of the degree of concern in response to the three framing versions with somatic symptom burden (as assessed with the SSS-8), disproportionate thoughts, emotions, and behaviors associated with somatic symptoms (as assessed with the SSD-12), and generalized anxiety (as assessed with the GAD-7). We found that for both the positive framing approach and the negative framing approach using frequencies, higher somatic symptom burden, higher level of disproportionate thoughts, emotions, and behaviors associated with somatic symptoms, and higher levels of generalized anxiety were associated with a higher degree of concern. For the negative framing approach using percentages, the degree of concern was associated with generalized anxiety, but not with SSS-8 nor SSD-12 sum scores. All aforementioned correlations are presented in Table S1.

Table S1

*Correlations of the degree of concern for different likelihood framings with SSS-8, SSD-12, and GAD-7 sum scores.*

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| --- | --- | --- | --- |
| **Likelihood framing** | **SSS-8** | **SSD-12** | **GAD-7** |
| Positive framing | *r* = .177, *p* = .044 | *r* = .311, *p* < .001 | *r* = .323, *p* < .001 |
| Negative framing – frequencies | *r* = .214, *p* = .014 | *r* = .360, *p* < .001 | *r* = .361, *p* < .001 |
| Negative framing - percentages | *r* = .063, *p* = .476 | *r* = .129, *p* = .144 | *r* = .175, *p* = .046 |

1. Of note, in three people, the somatoform disorder was the secondary diagnosis, yet these people were included in the SFD sample because the decision to use another diagnosis as the primary diagnosis was based on formal rather than clinical reasons, and the somatic complaints were in the foreground from a clinical perspective. [↑](#footnote-ref-1)