Supplemental Material for:

Common Genetic Contributions to High-Risk Trauma Exposure and

Self-Injurious Thoughts and Behaviors

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Table S1. Odds Ratios Indicating the Associations Between Non-Suicidal Self-Injury, Suicidal Ideation, and Suicide Attempt, Prior to and After Controlling for High-Risk Trauma Exposure

Table S2. Univariate Model Estimates for High-Risk Trauma Exposure

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Table S1

Odds Ratios Indicating the Associations Between Non-Suicidal Self-Injury, Suicidal Ideation, and Suicide Attempt, Prior to and After Controlling for High-Risk Trauma Exposure

	Cohort II (n = 6,237)[a]	Men (n = 2,791)	Women (n = 3,446)
Model	Baseline		
NSSI -- Ideation	8.20 [6.26, 10.76]	5.83 [4.07, 8.36]	12.30 [8.03, 18.84]
NSSI -- Attempt	9.85 [7.34, 13.22]	9.58 [6.03, 15.23]	10.69 [7.27, 15.73]
Ideation – Attempt	222.03 [82.76, 595.70]	154.59 [38.02, 628.63]	291.68 [71.98, > 999.99]
Model	Adjusted for High-Risk Trauma Exposure		
NSSI -- Ideation	6.15 [4.61, 8.20]	4.74 [3.25, 6.91]	8.52 [5.40, 13.45]
NSSI -- Attempt	6.09 [4.44, 8.36]	6.87 [4.21, 11.21]	6.00 [3.95, 9.12]
Ideation – Attempt	165.58 [61.46, 446.08]	122.78 [30.00, 502.59]	208.56 [50.75, 857.10]

Because trauma exposure was only assessed among Cohort II participants, both baseline and adjusted models were estimated in Cohort II.

Nearly all individuals (430 [99.1%] of 434) who reported suicide attempt also reported suicidal ideation, resulting in very high associations between the phenotypes.

[a] Includes 1,532 twins who also participated in the Childhood Trauma Study.

95% confidence limits presented in brackets.

NSSI = non-suicidal self-injury, Ideation = suicidal ideation, Attempt = suicide attempt.

Table S2

Univariate Model Estimates for High-Risk Trauma Exposure

	Full Sample	Women	Men
Proportion of Variation			
Additive Genetic	.62 [.34, .90]	.70 [.42, .98]	.19 [.00, .50]
Shared Environment	.02 [.00, .26]	.00 [.00, .28]	.20 [.00, .42]
Unique Environment	.36 [.29, .44]	.30 [.21, .38]	.61 [.44, .77]

95% confidence limits presented in brackets.
Bootstrapping was used to obtain confidence limits for estimates that were not statistically significant.

Table S3

Common Pathway Model Estimates of the Proportion of Variation in Self-Injurious Thoughts and Behaviors Attributable to Common and Specific Genetic, Shared Environmental, and Unique Environmental Factors

Phenotype	Additive Genetic			Shared Environment			Unique Environment		
	CF	Sp	Total	CF	Sp	Total	CF	Sp	Total
Men									
Common Factor	.54	--	.54	.00	--	.00	.46	--	.46
NSSI	.19	.33	.52	.00	.00	.00	.16	.32	.48
Suicidal Ideation	.39	.00	.39	.00	.00	.00	.33	.28	.61
Suicide Attempt	.49	.00	.49	.00	.00	.00	.41	.09	.50
Women									
Common Factor	.51	--	.51	.00	--	.00	.49	--	.49
NSSI	.24	.46	.70	.00	.00	.00	.23	.07	.30
Suicidal Ideation	.45	.07	.52	.00	.00	.00	.43	.05	.48
Suicide Attempt	.43	.00	.43	.00	.08	.08	.41	.08	.49

Variance estimates do not always sum exactly to 1.00 due to rounding.

CF = common factor, Sp = specific factor, NSSI = non-suicidal self-injury.

Table S4

Common Pathway Model Estimates of the Proportion of Variation in Self-Injurious Thoughts and Behaviors Attributable to Common and Specific Additive Genetic, Dominant Genetic, and Unique Environmental Factors

Phenotype	Additive Genetic			Dominant Genetic			Unique Environment		
	CF	Sp	Total	CF	Sp	Total	CF	Sp	Total
Men									
Common Factor	.41	--	.41	.14	--	.14	.45	--	.45
NSSI	.14	.00	.14	.05	.36	.41	.15	.29	.44
Suicidal Ideation	.30	.00	.30	.10	.00	.10	.32	.28	.60
Suicide Attempt	.37	.00	.37	.13	.00	.13	.40	.09	.49
Women									
Common Factor	.25	--	.25	.27	--	.27	.48	--	.48
NSSI	.12	.41	.53	.13	.05	.18	.22	.07	.29
Suicidal Ideation	.23	.00	.23	.25	.09	.34	.43	.01	.44
Suicide Attempt	.21	.07	.28	.23	.00	.23	.39	.10	.49

Variance estimates do not always sum exactly to 1.00 due to rounding.
CF = common factor, Sp = specific factor, NSSI = non-suicidal self-injury.

Table S5

Common Pathway Model-Fitting Results

	$\Delta\chi^2$	df	*p*-value
	ACE Common Pathway		
I. ACE model	--	124	--
II. Model I without A	51.14	132	< .0001
III. Model I without C	0.49	132	.9999
	ADE Common Pathway		
I. ADE model	--	124	--
II. Model I without A	5.70	132	.68
III. Model I without D	4.24	132	.83
IV. Model I without A or D	537.25	140	< .0001

Bold type indicates the best-fitting model.

Nested models were compared using the Satorra-Bentler scaled chi-square difference test.

A = additive genetic, D = dominant genetic, C = shared environment, E = unique environment.

Table S6

Tests of Sex Differences Within Common Pathway Models

	$\Delta\chi^2$	df	*p*-value
	ACE Common Pathway		
I. ACE model	--	124	--
II. Model I with common factor paths constrained	1.82	127	.61
III. Model II with common ACE constrained[a]	0.17	129	.92
IV. Model III with specific ACE constrained	18.22	138	.03
	ADE Common Pathway		
I. ADE model	--	124	--
II. Model I with common factor paths constrained	2.83	127	.42
III. Model II with common ADE constrained[a]	0.47	129	.79
IV. Model III with specific ADE constrained	18.42	138	.03

Nested models were compared using the Satorra-Bentler scaled chi-square difference test.

A = additive genetic, D = dominant genetic, C = shared environment, E = unique environment.

[a] Constraining the common A, C, and E or A, D, and E components across men and women comprised a 2 df test as the variance of the latent factor was fixed to 1.0 and the variance of E was computed as $1 - A - C$ or $1 - A - D$.
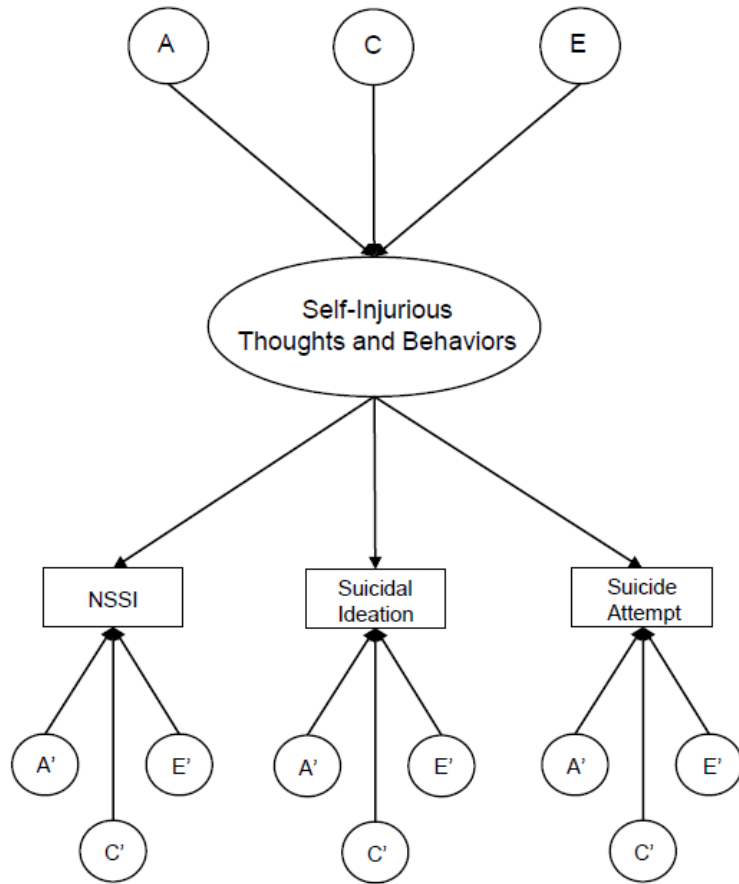
Figure S1. Common pathway model for self-injurious thoughts and behaviors.

    For ease of presentation, this path diagram represents only one twin in a pair.
    Primed factors are specific to NSSI, suicidal ideation, and suicide attempt.
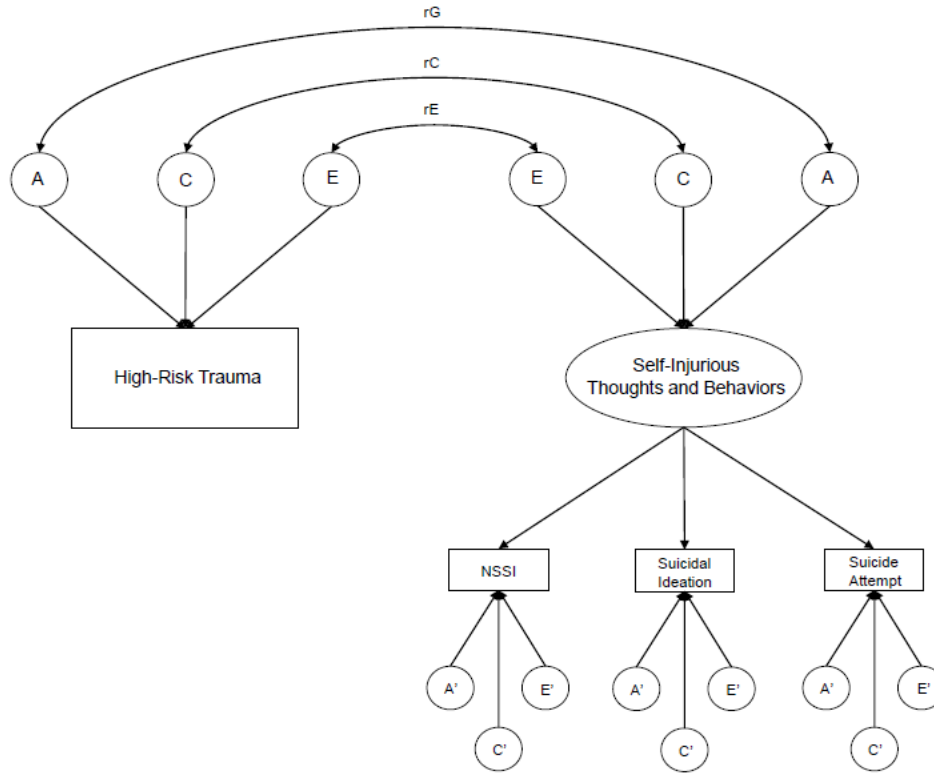   NSSI = non-suicidal self-injury, A = additive genetic, C = shared environment, E = unique environment.

Figure S2. Correlated factors model for high-risk trauma exposure and self-injurious thoughts and behaviors.

  For ease of presentation, this path diagram represents only one twin in a pair.
  Primed factors are specific to NSSI, suicidal ideation, and suicide attempt.
  NSSI = non-suicidal self-injury, A = additive genetic, C = shared environment, E = unique environment, rG = genetic correlation, rC = shared environmental correlation, rE = unique environmental correlation.
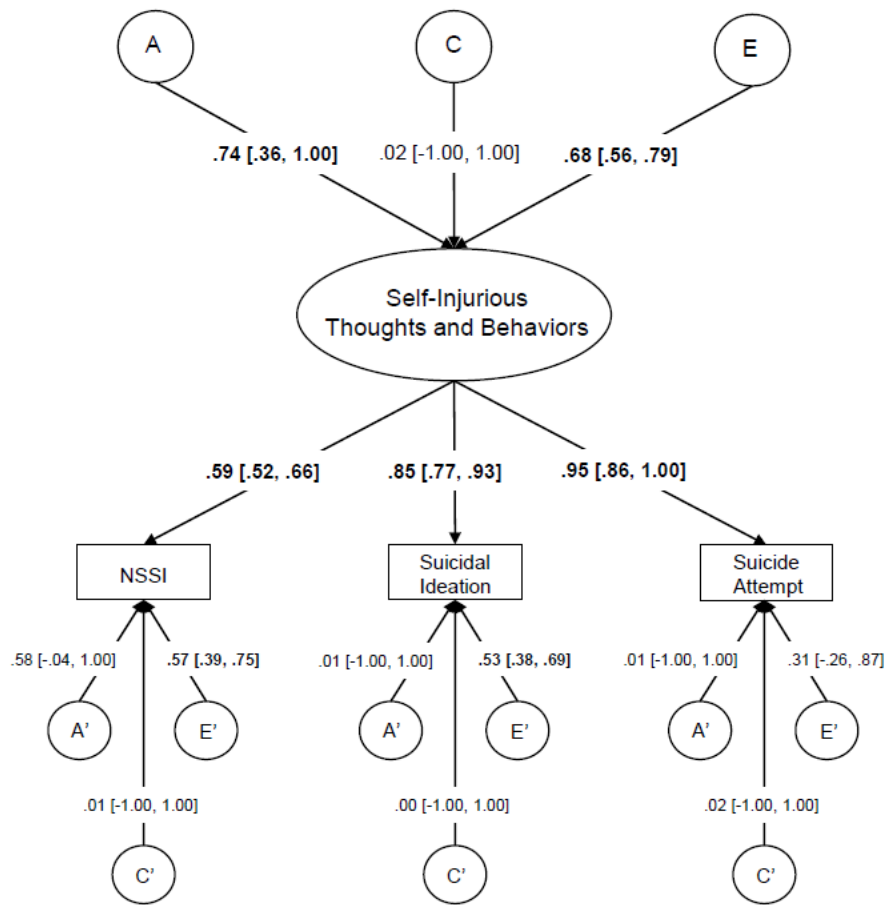
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Figure S3. Standardized parameter estimates of the ACE common pathway model for men.

    Primed factors are specific to NSSI, suicidal ideation, and suicide attempt.
    95% confidence limits presented in brackets.
    Bolded estimates are statistically significant.
    NSSI = non-suicidal self-injury, A = additive genetic, C = shared environment, E = unique environment.
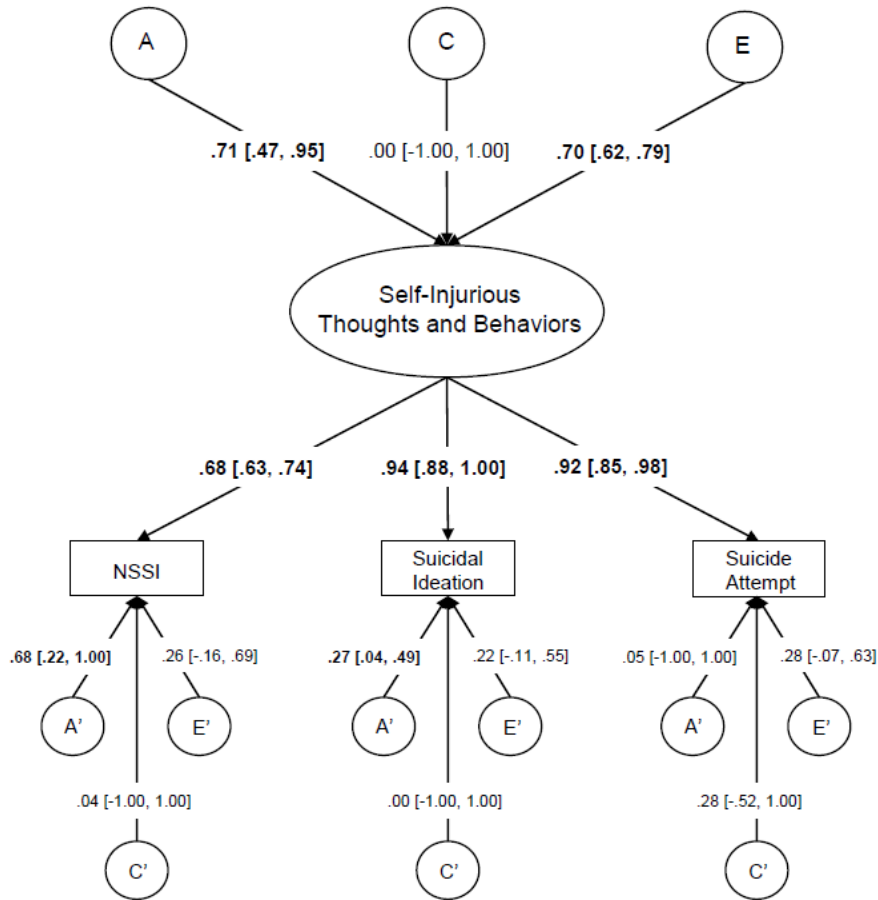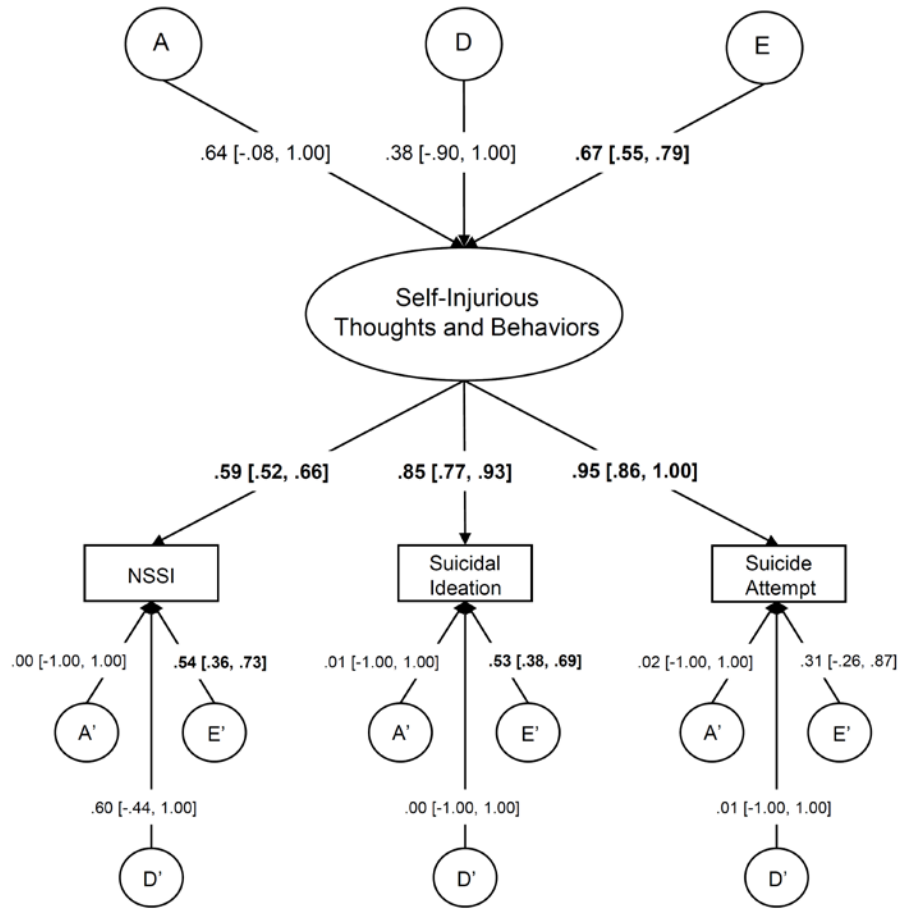
Figure S4. Standardized parameter estimates of the ACE common pathway model for women.

   Primed factors are specific to NSSI, suicidal ideation, and suicide attempt.
   95% confidence limits presented in brackets.
   Bolded estimates are statistically significant.
   NSSI = non-suicidal self-injury, A = additive genetic, C = shared environment, E = unique environment.

Figure S5. Standardized parameter estimates of the ADE common pathway model for men.

Primed factors are specific to NSSI, suicidal ideation, and suicide attempt.
95% confidence limits presented in brackets.
Bolded estimates are statistically significant.
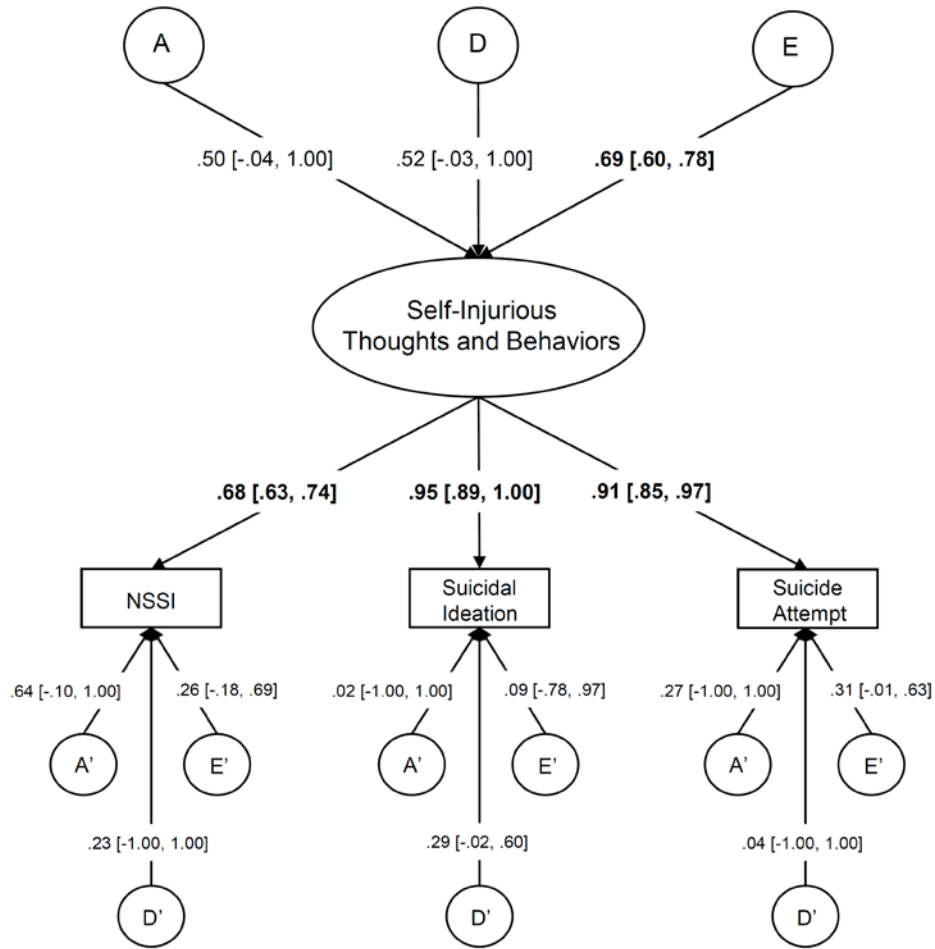NSSI = non-suicidal self-injury, A = additive genetic, D = dominant genetic, E = unique environment.

Figure S6. Standardized parameter estimates of the ADE common pathway model for women.

Primed factors are specific to NSSI, suicidal ideation, and suicide attempt.
95% confidence limits presented in brackets.
Bolded estimates are statistically significant.
NSSI = non-suicidal self-injury, A = additive genetic, D = dominant genetic, E = unique environment.
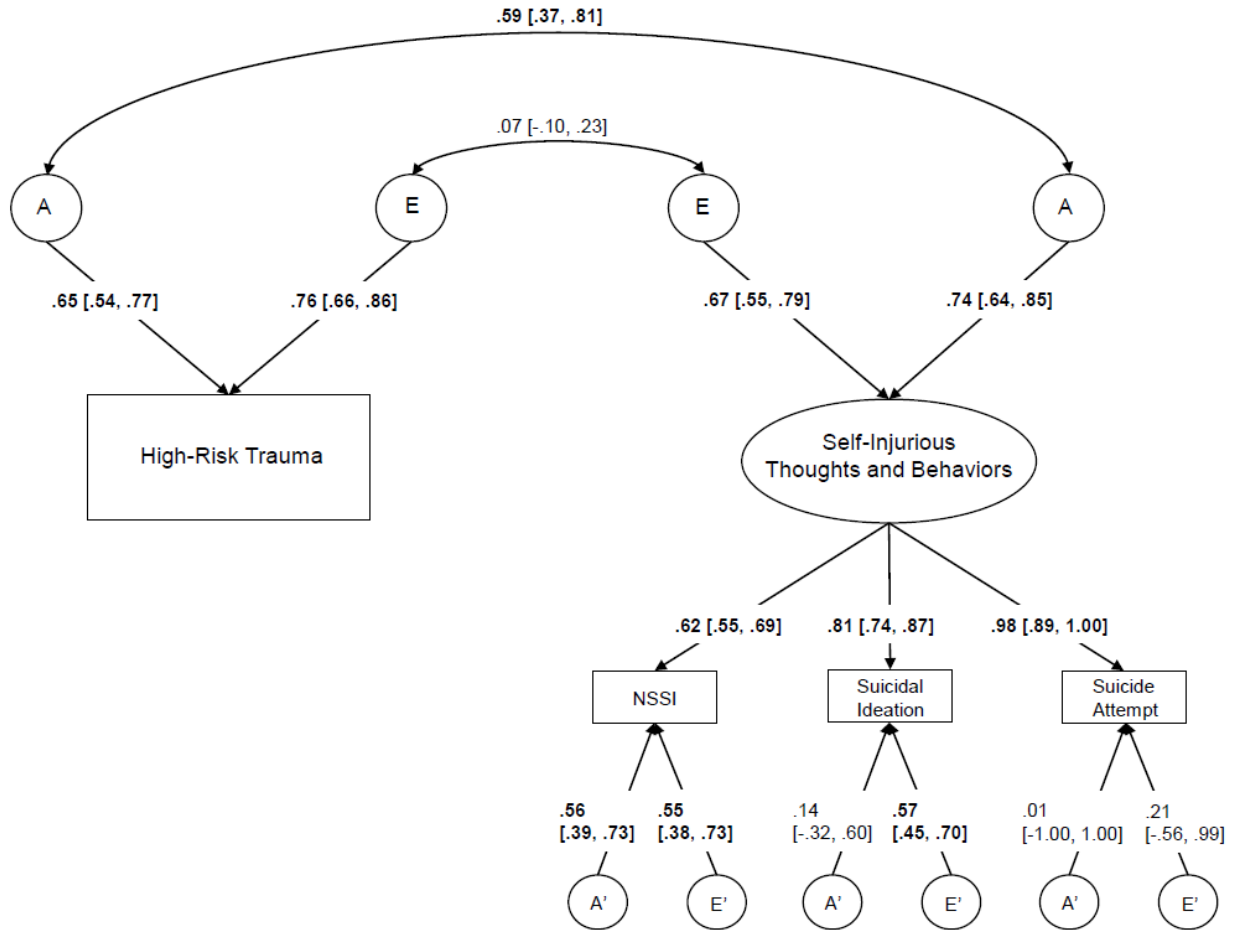
Figure S7. Standardized parameter estimates of the AE correlated factors model for men.

Primed factors are specific to NSSI, suicidal ideation, and suicide attempt.
95% confidence limits presented in brackets.
Bolded estimates are statistically significant.
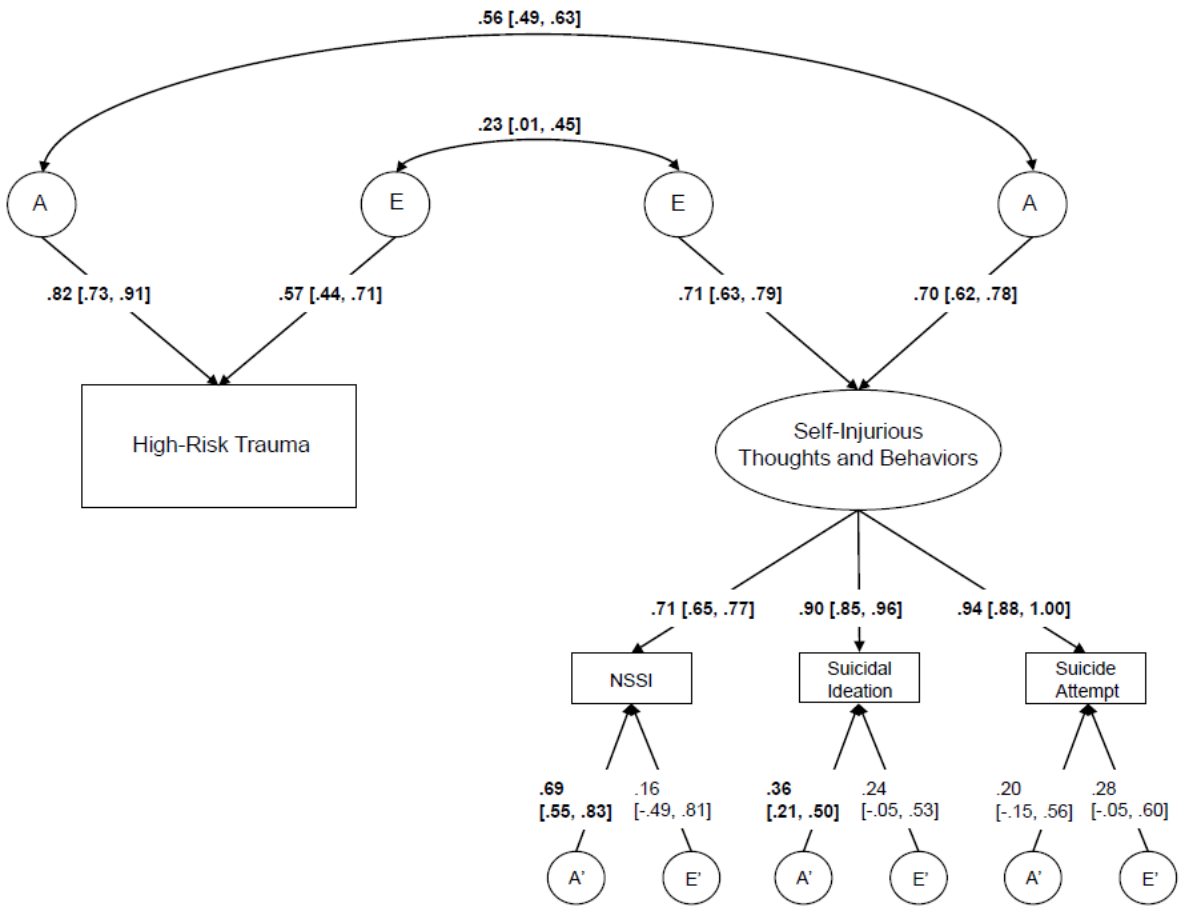NSSI = non-suicidal self-injury, A = additive genetic, E = unique environment.

Figure S8. Standardized parameter estimates of the AE correlated factors model for women.

Primed factors are specific to NSSI, suicidal ideation, and suicide attempt.
95% confidence limits presented in brackets.
Bolded estimates are statistically significant.
NSSI = non-suicidal self-injury, A = additive genetic, E = unique environment.