SUPPLEMENTARY ANALYSES FOR

"Psychosocial and health-related factors associated with discordance between 13-year trajectories of self-reported functional limitations and performance-based physical functioning in old age"

SUPPLEMENT 1. SENSITIVITY ANALYSES ON CLASSIFICATION ACCURACY

As the entropy values in the LCGA models were relatively low, we carried out two sensitivity analyses to provide some indication whether the classification uncertainty led to inaccuracy in defining discordant and concordant groups.

First, we examined whether the correlation between the LCGA-based groups of subjective and performance-based functioning was similar to the correlations between observed continuous measures of physical functioning at the different measurement waves, assuming that similar correlations indicate accurate classification. For the categorical latent class variables, we used Somer's D as a measure resembling a correlation coefficient. The analysis showed that the correlations between the five groups of performance-based functioning and five groups of subjective functioning were similar to the cross-sectional, continuous correlations between performance-based and subjective functioning across the different measurement waves (Somer's D=0.57 versus correlations ranging between 0.59 to 0.64, respectively).

Second, at baseline, we calculated continuous discordance scores by subtracting individual performance-based scores from subjective scores, after transforming both scores to an identical scale, ranging from 0 to 24. We reasoned that if the LCGA-based classifications are accurate, we should observe strong contrasts in individual discordance scores between the LCGA-based groups. As expected, the means of the continuous discrepancy scores differed very strongly between the five categorical discrepancy groups (See Figure 1S), and in the expected direction (ANOVA *F*-value = 337, p<.001; Bonferroni-corrected differences between all categories p<.05).

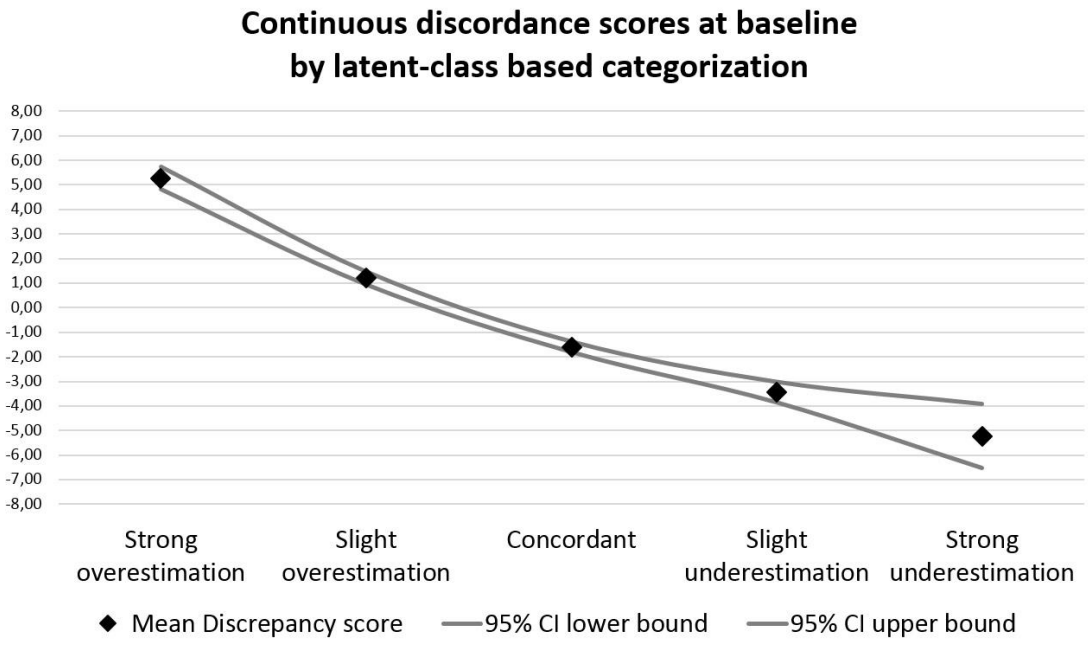


Figure 1S

SUPPLEMENT 2A

Cross-Tabulation of trajectories of self-reported functional limitations and performance-based physical functioning, including a qualitative description of the changes in overestimation/underestimation over time (see also SUPPLEMENT 2B for a graphical depiction of these changes)

		Performance-Based (%)				
	Trajectory[a)]	PBA	PBB	PBC	PBD	PBE
Self-Report (%)	SRA	**12.4** no discordance	**11.1** OV increases	**4.0** OV increases	**0.6** OV increases	**0.7** OV remains stable
	SRB	**6.3** UND remains stable	**12.6** no discordance	**10.9** OV increases	**2.4** OV increases	**2.4** OV remains stable
	SRC	**0.5** UND increases	**3.0** UND increases	**7.4** no discordance	**4.2** OV increases, then decreases	**4.1** OV decreases
	SRD	**0.0** UND increases	**0.6** UND increases, then decreases	**1.9** UND increases, then decreases	**2.3** no discordance	**5.8** OV decreases
	SRE	**0.0** UND increases	**0.1** UND increases, then decreases	**0.4** UND increases, then decreases	**0.2** UND decreases	**5.9** no discordance

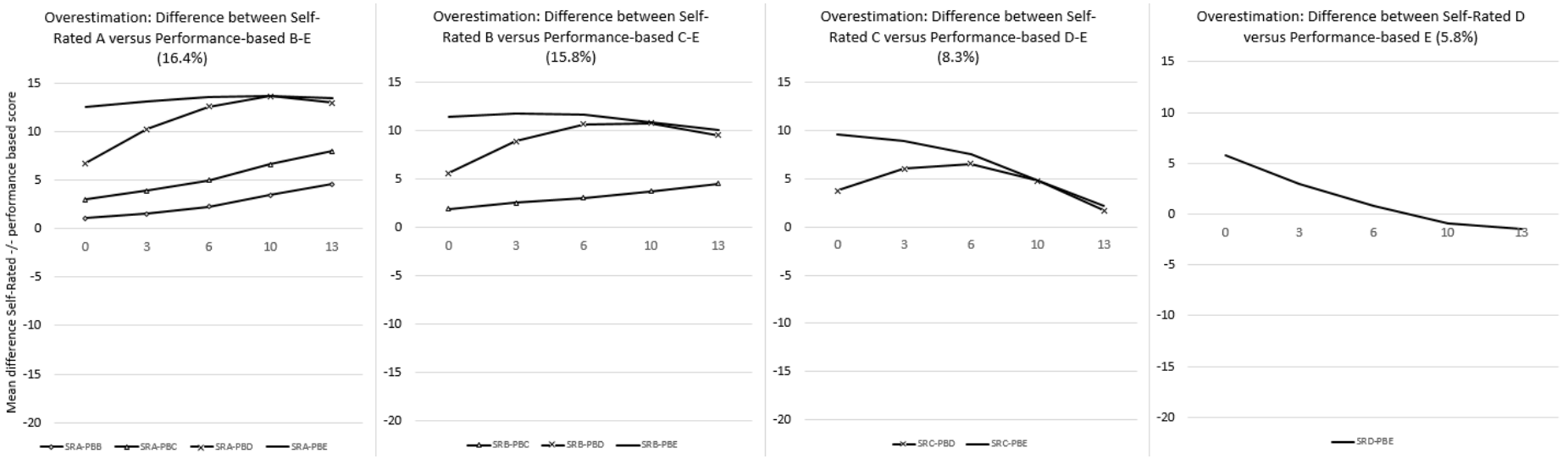
Notes:

Abbreviations: SR = Self-Reported; **PB =** Performance-Based. **A to E** correspond to trajectories A to E in the manuscript, Figure 1a and 1b, where A is the highest functioning trajectory and E the lowest functioning trajectory. For example, "SRA" means Self-Reported functional limitations Trajectory A, and "PBD" means Performance-Based functioning Trajectory D. **OV =** Overestimation; **UND =** Underestimation

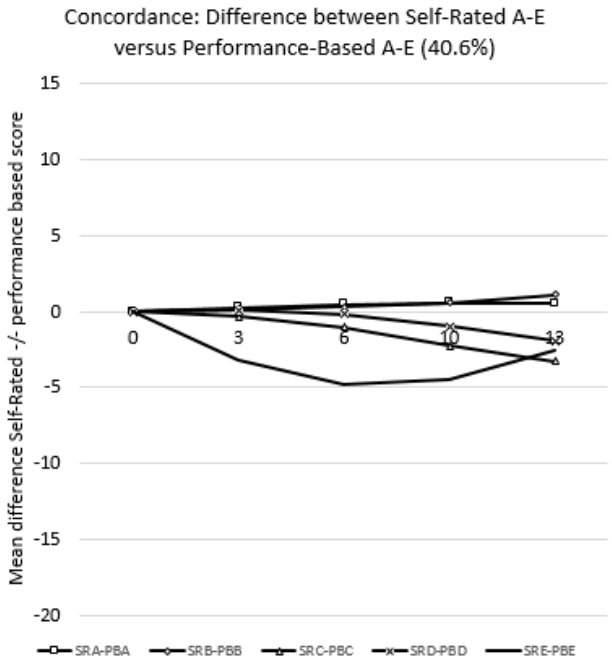
SUPPLEMENT 2B. Graphical depiction of changes in discordance over time for each combination of self-reported and performance-based latent class

Notes:
a) the change scores are based on rescaling the self-report and performance-based measures into the same range, i.e. scores of 1-25. Then, the discordance scores were based on subtracting the average score of the performance-based latent class from the average score of the self-reported latent class at each time point
b) For the "Concordant group", the initial difference was set at zero
c) The graphs use the same abbreviations as in Supplement 2A

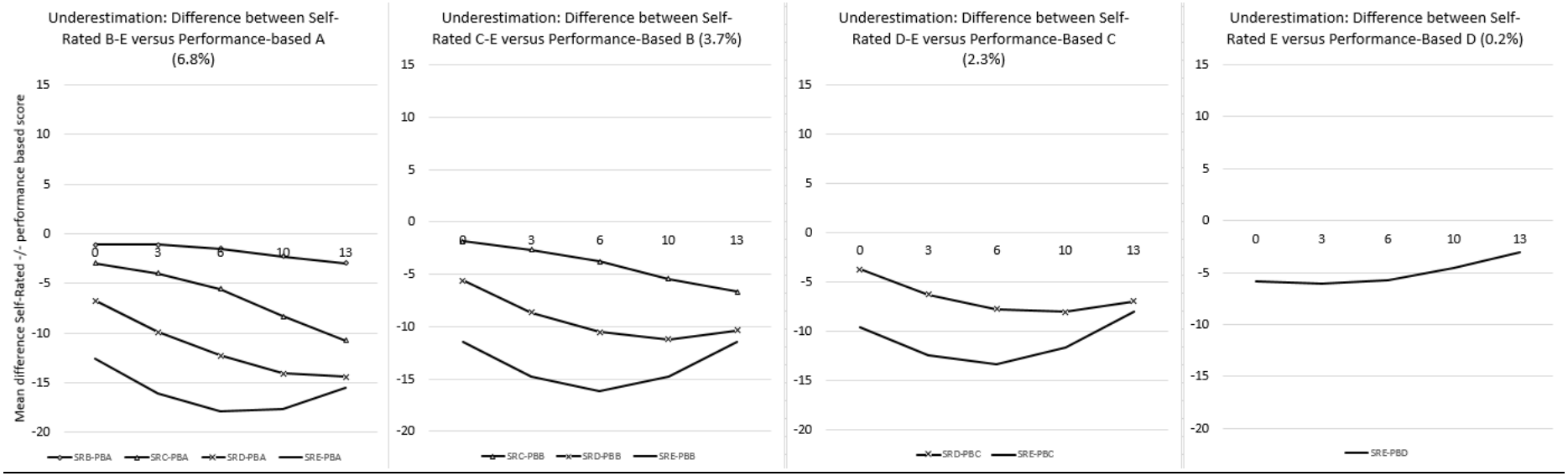
Overestimation: SR latent class > PB latent class



Concordance: SR latent class = PB latent class



Underestimation: SR latent class < PB latent class



SUPPLEMENT 3. SENSITIVITY ANALYSES: USING FIVE CATEGORIES AS OUTCOME INSTEAD OF THREE

3A. FIVE OUTCOME GROUPS: UNIVARIATE COMPARISON.

Unadjusted baseline differences in characteristics between groups, based on concordance and discordance patterns (n=2135)

Pattern	Strong Overestim.	Slight Overestim.	Concordance	Slight Underestim.	Strong Underestim.	Overall p-value
	N=304	N=683	N=867	N=243	N=38	
	M (s.e) / %	M (s.e) / %	M (s.e) / %	M (s.e) / %	M (s.e) / %	a)
Demographics						
Age	77.7 (0.4)	72.5 (0.3)	70.8 (0.3)	68.4 (0.5)	73.3 (1.2)	<.001
Sex (% female)	43.4	48.5	54.9	65.4	63.2	<.001
Education	8.8 (0.2)	9.0 (0.1)	9.2 (0.1)	9.2 (0.2)	8.5 (0.5)	.49
Physical Functioning						
Functional Limitations	28.4 (0.1)	27.9 (0.1)	26.9 (0.2)	27.4 (0.2)	24.2 (0.7)	<.001
Physical Performance	1.9 (0.04)	2.5 (0.03)	2.8 (0.03)	3.2 (0.04)	3.0 (0.10)	<.001
Psychological Factors						
Depressive Symptoms	8.2 (0.4)	7.4 (0.3)	7.5 (0.3)	8.8 (0.6)	10.9 (1.5)	.01
Anxiety Symptoms	2.6 (0.2)	2.4 (0.1)	2.6 (0.1)	3.4 (0.2)	3.8 (0.7)	<.001
MMSE score ≤23 (%)	21.4	10.7	7.4	5.3	7.9	<.001
Mastery	17.0 (0.2)	17.4 (0.1)	17.6 (0.1)	17.3 (0.2)	17.3 (0.5)	.06
Self-Esteem	15.2 (0.1)	15.4 (0.1)	15.4 (0.1)	15.3 (0.1)	14.4 (0.4)	.07
Self-Efficacy	40.9 (0.3)	41.9 (0.2)	42.5 (0.2)	41.8 (0.4)	41.2 (1.0)	<.001
Neuroticism	6.0 (0.3)	5.8 (0.2)	5.5 (0.2)	7.0 (0.4)	6.9 (1.0)	.01
Social Factors						
Instrumental Support	14.4 (0.4)	14.8 (0.3)	14.9 (0.2)	14.7 (0.4)	15.9 (1.1)	.62
Partner in house (%)	54.6	58.9	61.7	67.5	63.2	.03
Health-related Factors						
Self-Rated Health	3.7 (0.05)	3.6 (0.03)	3.6 (0.03)	3.5 (0.06)	3.1 (0.19)	<.001
Chronic Diseases	1.7 (0.07)	1.6 (0.05)	1.6 (0.04)	1.7 (0.09)	2.2 (0.21)	.05
Pain	0.6 (0.06)	0.7 (0.05)	0.8 (0.05)	1.0 (0.09)	1.5 (0.27)	<.001
Physical Activity	5.0 (0.2)	5.8 (0.1)	5.9 (0.1)	6.5 (0.3)	4.9 (0.6)	<.001
BMI: <25	39.0	35.2	28.4	28.1	31.6	
25-30	45.3	44.1	45.9	44.5	43.2	
≥30	15.8	20.7	25.6	27.4	25.5	.01
Smoking: No	64.8	61.8	62.6	66.9	53.2	
Former	16.8	14.5	16.2	14.9	17.9	
Current	18.4	23.6	21.2	18.2	29.2	.25
Alcohol: Does not drink	25.0	20.6	24.7	20.7	33.2	
Light	51.8	53.1	46.2	47.0	44.7	
Moderate	15.6	19.9	21.6	22.2	17.6	
(Very) Excessive	7.7	6.4	7.5	10.2	4.7	.07

a) Based on F-tests for continuous variables and Chi-square tests for categorical variables. As pooled p-values were not available with multiply imputed datasets, we report the mean p-value of all separate imputed datasets as an approximation of the pooled p-values

3B. FIVE OUTCOME GROUPS: SINGLE RISK FACTORS ADJUSTED FOR AGE AND SEX.

Multinomial logistic regression of discordance patterns on single risk factors adjusted for age, age squared and sex. Reference category is concordance (n=2135)				
	Overestimation		**Underestimation**	
Ref = Concordance	**Strong; n=304**	**Slight; n=683**	**Slight; n=243**	**Strong; n=38**
	OR (95% C.I.)	**OR (95% C.I.)**	**OR (95% C.I.)**	**OR (95% C.I.)**
Demographic factors				
Age	2.01	1.70	0.96	1.04
	1.41 to 2.86*	1.35 to 2.14*	0.94 to 0.98*	1.00 to 1.08†
Age squared	0.996	0.997		
	.994 to .998*	.995 to .998*		
Sex	0.61	0.77	1.58	1.39
	0.47 to 0.81*	0.63 to 0.94*	1.17 to 2.13*	0.71 to 2.73
Education	0.98	0.99	1.01	0.96
	0.94 to 1.02	0.97 to 1.00	0.96 to 1.05	0.92 to 1.02
Psychological factors				
Depressive Symptoms	1.00	1.00	1.02	1.04
	0.98 to 1.02	0.98 to 1.01	1.00 to 1.04*	1.00 to 1.08*
Anxiety Symptoms	1.00	0.99	1.06	1.08
	0.96 to 1.05	0.96 to 1.02	1.02 to 1.10*	1.01 to 1.16†
MMSE score ≤23	1.97	1.41	0.90	0.92
	1.32 to 2.94*	0.98 to 2.04†	0.48 to 1.71	0.27 to 3.20
Mastery	0.98	0.99	0.96	1.00
	0.94 to 1.02	0.96 to 1.02	0.92 to 1.00†	0.90 to 1.11
Self-Esteem	0.97	0.99	0.98	0.85
	0.91 to 1.03	0.94 to 1.04	0.92 to 1.04	0.75 to 0.97*
Self-Efficacy	0.96	0.98	0.97	0.97
	0.94 to 0.99*	0.96 to 1.00*	0.95 to 1.00†	0.91 to 1.03
Neuroticism	1.01	1.01	1.04	1.04
	0.99 to 1.04	0.99 to 1.03	1.02 to 1.07*	0.98 to 1.10
Social factors				
Instrumental Support	0.99	1.00	1.00	1.02
	0.97 to 1.01	0.98 to 1.01	0.98 to 1.02	0.98 to 1.07
Partner in house (%)	1.14	0.89	1.23	1.54
	0.83 to 1.56	0.70 to 1.12	0.88 to 1.73	0.72 to 3.28
Health-related Factors				
Self-Rated Health	1.23	1.03	0.82	0.58
	1.05 to 1.44*	0.92 to 1.15	0.71 to 0.96*	0.42 to 0.79*
Chronic Diseases	0.93	0.99	1.14	1.30
	0.83 to 1.03	0.92 to 1.08	1.02 to 1.27*	1.04 to 1.63*
Pain	0.80	0.93	1.10	1.33
	0.69 to 0.92*	0.85 to 1.02	0.99 to 1.22†	1.08 to 1.64*
Physical Activity	1.01	1.01	1.00	0.93
	0.97 to 1.05	0.98 to 1.04	0.97 to 1.04	0.83 to 1.03
BMI: 25-30	0.75	0.78	0.95	0.85
	0.54 to 1.05†	0.59 to 1.04†	0.62 to 1.47	0.37 to 1.94
BMI: ≥30	0.54	0.72	0.96	0.87
	0.33 to 0.87*	0.49 to 1.04†	0.59 to 1.58	0.29 to 2.57
Smoking: Former	1.16	0.88	0.89	1.73
	0.74 to 1.81	0.60 to 1.30	0.49 to 1.62	0.56 to 5.38
Smoking: Current	1.00	1.15	0.79	2.12
	0.65 to 1.54	0.82 to 1.60	0.46 to 1.36	0.87 to 5.15†
Alcohol: Light	1.27	1.40	1.22	0.81
	0.86 to 1.86	1.04 to 1.90*	0.73 to 2.02	0.33 to 2.00
Alcohol: Moderate	0.75	1.06	1.39	0.72
	0.64 to 1.25	0.71 to 1.60	0.75 to 2.56	0.22 to 2.30
Alcohol: Excessive	1.46	1.05	1.75	0.63
	0.73 to 2.92	0.57 to 1.93	0.75 to 4.09	0.09 to 4.41

† p<.10; **p<.05

3C. RESULTS OF FIVE GROUP COMPARISON AFTER FORWARD SELECTION

Sens. 3B. Multinomial logistic regression of discordance patterns on all risk factors selected by forward selection procedures. Reference category is concordance (n=2135)				
	Overestimation		**Underestimation**	
Ref = Concordance	**Strong; n=304**	**Slight; n=683**	**Slight; n=243**	**Strong; n=38**
	OR (95% C.I.)	**OR (95% C.I.)**	**OR (95% C.I.)**	**OR (95% C.I.)**
Demographic factors				
Age	2.19	1.73	0.96	1.04
	1.52 to 3.16*	1.37 to 2.20*	0.94 to 0.98*	0.99 to 1.08ᵀ
Age squared	0.995	0.996		
	.993 to .998*	.995 to .998*		
Sex	0.66	0.76	1.56	1.36
	0.48 to 0.91*	0.60 to 0.96*	1.08 to 2.26*	0.62 to 3.00
Psychological factors				
MMSE score ≤23	1.99	1.42	0.88	0.80
	1.31 to 3.02*	0.98 to 2.08ᵀ	0.46 to 1.68	0.23 to 2.80
Self-Efficacy	0.97	0.99	0.99	0.98
	0.94 to 1.00*	0.97 to 1.01	0.96 to 1.02	0.92 to 1.05
Neuroticism	1.02	1.01	1.03	1.00
	0.99 to 1.05	0.99 to 1.03	1.00 to 1.06*	0.94 to 1.07
Health-related factors				
Self-Rated Health	1.17	1.00	0.87	0.67
	0.98 to 1.40ᵀ	0.88 to 1.14	0.72 to 1.04	0.47 to 0.97*
Pain	0.82	0.92	1.04	1.18
	0.69 to 0.96*	0.83 to 1.02ᵀ	0.92 to 1.18	0.92 to 1.52
BMI: 25-30	0.77	0.81	0.95	0.90
	0.55 to 1.08	0.61 to 1.08	0.61 to 1.47	0.39 to 2.07
BMI: ≥30	0.60	0.76	0.92	0.80
	0.36 to 0.99*	0.52 to 1.12	0.55 to 1.55	0.27 to 2.41
Smoking: Former	1.26	0.90	0.86	1.68
	0.80 to 1.98	0.61 to 1.34	0.47 to 1.57	0.52 to 5.43
Smoking: Current	0.98	1.13	0.71	1.98
	0.63 to 1.53	0.81 to 1.59	0.42 to 1.23	0.79 to 4.93
Alcohol: Light	1.26	1.40	1.34	0.98
	0.84 to 1.89	1.02 to 1.93*	0.80 to 2.23	0.39 to 2.46
Alcohol: Moderate	0.75	1.07	1.60	0.80
	0.45 to 1.25	0.70 to 1.63	0.85 to 3.01	0.24 to 2.65
Alcohol: Excessive	1.49	1.04	2.06	0.81
	0.73 to 3.04	0.56 to 1.94	0.86 to 4.94	0.11 to 5.75

ᵀ p<.10; **p<.05