

Supplementary Material

Table S1: Diagnosis codes used to define mental illness categories in DIPS

Category	KCD-8 th code
Dementia related	F00-F03
Alcohol use related	F10
Psychoactive substance related	F11-F19
Psychosis or schizophrenia related	F20-F29
Mood disorder	F30-F39
Other	remainder of F00-F99

Table S2. Weighted headcount and percent prevalence (%) of self-injury

	Weighted headcount	Percent prevalence	
		%	95% CI
Total	337,441	1.9	(1.9-2.0)
Year			
2004	18,495	2.4	(2.1-2.6)
2005	18,744	2.3	(2.0-2.5)
2006	20,684	2.4	(2.2-2.7)
2007	16,236	1.9	(1.7-2.1)
2008	19,824	2.2	(2.0-2.4)
2009	19,320	2.1	(1.9-2.3)
2010	19,682	1.9	(1.8-2.1)
2011	19,595	1.9	(1.8-2.1)
2012	18,630	1.8	(1.6-1.9)
2013	20,193	1.9	(1.7-2.1)
2014	18,673	1.7	(1.6-1.9)
2015	18,896	1.7	(1.6-1.9)
2016	17,346	1.6	(1.5-1.8)
2017	16,726	1.5	(1.4-1.6)
2018	17,440	1.6	(1.5-1.7)
2019	19,273	1.8	(1.7-2.0)
2020	19,423	2.1	(1.9-2.2)
2021	18,260	2.2	(2.0-2.3)
Gender			
men	154,812	1.5	(1.5-1.6)
women	182,629	2.4	(2.4-2.5)
Age group			
≤20	27,695	1.4	(1.3-1.5)
21-30	52,811	2.5	(2.4-2.7)
31-40	55,824	2.5	(2.4-2.6)
41-50	68,061	2.4	(2.3-2.5)
51-60	47,356	1.6	(1.5-1.6)
61-70	34,371	1.5	(1.4-1.6)
71-80	33,089	1.7	(1.6-1.8)
>80	18,234	1.6	(1.5-1.8)
State	154,812		
Seoul	48,644	1.9	(1.8-2.0)
Pusan	19,005	1.5	(1.3-1.6)
Daegu	8,615	1.0	(0.9-1.1)
Incheon	19,378	3.1	(2.9-3.4)
Gwangju	13,530	1.4	(1.3-1.5)
Daejeon	13,046	2.3	(2.1-2.5)
Ulsan	7,415	1.2	(1.0-1.4)
Gyeonggi	74,842	2.4	(2.3-2.5)
Gangwon	16,382	2.6	(2.4-2.9)
North Chungcheong	14,175	2.2	(2.0-2.4)
South Chungchoeng	23,153	3.9	(3.6-4.1)
North Jeolla	12,482	1.3	(1.2-1.5)
South Jeolla	16,429	1.4	(1.3-1.6)
North Gyeongsang	21,063	2.1	(1.9-2.3)
South Gyeongsang	20,496	1.2	(1.1-1.3)
Jeju	8,786	2.7	(2.3-3.0)

Note: Prevalence is calculated as the proportion of the weighted incidence of self-injury among injury patients.

Table S3. Weighted headcount and percent prevalence (%) of self-injury over year groups

	2004-2006 (n=57294)		2007-2009 (n=55380)		2010-2012 (n=57907)		2013-2015 (n= 57762)		2016-2018 (n=51512)		2019-2021 (n=56956)	
	headcount	prevalence (%)	headcount	prevalence (%)	headcount	prevalence (%)	headcount	prevalence (%)	headcount	prevalence (%)	headcount	prevalence (%)
Gender												
men	26,284	1.74 (1.46-2.01)	25,444	1.57 (1.40-1.74)	26,859	1.48 (1.31-1.66)	27,107	1.48 (1.29-1.67)	23,956	1.36 (1.18-1.53)	25,162	1.67 (1.47-1.87)
women	31,640	3.37 (2.74-4.00)	29,935	2.80 (2.48-3.11)	31,048	2.44 (2.17-2.71)	30,655	2.19 (1.93-2.46)	27,556	1.84 (1.62-2.06)	31,794	2.38 (2.08-2.69)
Age group												
≤20	3,196	0.89 (0.65-1.13)	4,310	1.18 (0.93-1.43)	4,886	1.26 (1.02-1.51)	4,771	1.29 (1.04-1.54)	4,262	1.39 (1.12-1.67)	6,270	2.90 (2.41-3.39)
21-30	12,694	3.36 (2.64-4.09)	8,100	2.02 (1.73-2.31)	8,770	2.24 (1.90-2.58)	7,182	2.08 (1.74-2.42)	7,156	2.29 (1.92-2.65)	8,909	3.55 (2.99-4.11)
31-40	12,436	3.01 (2.39-3.63)	10,764	2.57 (2.11-3.03)	9,765	2.34 (1.95-2.72)	8,543	2.18 (1.78-2.57)	6,667	1.96 (1.62-2.29)	7,650	3.07 (2.55-3.58)
41-50	11,844	2.50 (1.95-3.05)	12,709	2.51 (2.16-2.85)	11,834	2.15 (1.84-2.45)	12,052	2.31 (1.96-2.67)	10,756	2.30 (1.98-2.63)	8,866	2.58 (2.19-2.97)
51-60	5,765	1.87 (1.39-2.35)	7,204	1.85 (1.51-2.18)	7,662	1.48 (1.22-1.74)	9,867	1.58 (1.32-1.83)	8,234	1.26 (1.05-1.47)	8,625	1.59 (1.35-1.83)
61-70	6,271	2.27 (1.71-2.84)	5,830	2.02 (1.63-2.41)	6,327	1.78 (1.48-2.08)	5,848	1.50 (1.20-1.81)	4,460	0.94 (0.75-1.12)	5,636	1.16 (0.97-1.35)
71-80	4,140	2.36 (1.76-2.95)	4,605	2.08 (1.68-2.47)	6,200	1.97 (1.64-2.30)	6,220	1.58 (1.26-1.90)	5,662	1.32 (1.09-1.55)	6,262	1.50 (1.27-1.73)
>80	1,578	2.17 (1.35-3.00)	1,858	1.94 (1.34-2.54)	2,463	1.70 (1.26-2.15)	3,281	1.68 (1.27-2.08)	4,316	1.56 (1.27-1.86)	4,739	1.43 (1.18-1.67)
State												
Seoul	9,161	2.39 (1.68-3.10)	9,378	2.35 (1.72-2.98)	8,801	1.94 (1.54-2.35)	7,915	1.66 (1.38-1.95)	7,694	1.71 (1.15-2.28)	5,695	1.56 (1.08-2.04)
Pusan	5,767	2.96 (2.00-3.92)	2,575	1.33 (0.72-1.93)	2,347	1.05 (0.56-1.55)	2,380	1.02 (0.54-1.50)	3,139	1.37 (0.61-2.12)	2,797	1.37 (0.64-2.10)
Daegu	1,595	1.69 (0.66-2.71)	1,294	0.99 (0.51-1.47)	785	0.59 (0.34-0.84)	1,069	0.77 (0.40-1.14)	1,332	0.75 (0.27-1.24)	2,540	1.53 (0.57-2.48)
Incheon	4,929	3.50 (1.69-5.30)	2,308	3.76 (2.89-4.64)	2,455	3.53 (2.24-4.83)	2,067	3.27 (2.01-4.53)	3,469	2.64 (1.30-3.99)	4,149	2.79 (1.17-4.40)
Gwangju	1,001	1.13 (0.73-1.53)	1,888	1.20 (0.85-1.55)	2,462	1.43 (0.71-2.15)	2,876	1.55 (0.78-2.31)	2,715	1.35 (0.41-2.30)	2,587	1.50 (0.50-2.50)
Daejeon	2,049	3.26 (2.21-4.31)	1,830	2.14 (1.52-2.76)	2,271	2.58 (1.33-3.84)	2,533	2.15 (0.96-3.35)	2,195	1.78 (0.79-2.77)	2,168	2.45 (0.96-3.94)
Ulsan	800	0.98 (-0.13-2.08)	1,868	1.96 (1.11-2.80)	1,751	1.57 (0.82-2.32)	1,463	1.31 (0.77-1.85)	736	0.62 (0.17-1.07)	797	0.77 (0.01-1.53)
Gyeonggi	13,928	3.35 (2.38-4.32)	10,232	2.28 (1.93-2.64)	11,925	2.36 (1.88-2.85)	12,879	2.29 (1.78-2.81)	10,940	1.82 (1.39-2.26)	14,938	2.68 (2.03-3.32)
Gangwon	1,999	2.82 (2.34-3.29)	2,492	2.19 (1.09-3.28)	3,117	2.72 (1.45-3.99)	3,703	3.08 (2.23-3.93)	2,273	2.20 (1.24-3.17)	2,797	2.91 (1.49-4.33)

North Chungcheong	1,784	1.91 (0.84-2.99)	2,441	2.72 (1.90-3.53)	4,099	3.12 (2.41-3.83)	2,910	1.88 (0.88-2.87)	1,689	1.39 (0.82-1.97)	1,253	2.05 (1.35-2.75)
South Chungchoeng	3,198	4.96 (1.42-8.50)	3,950	3.99 (1.56-6.42)	3,989	3.87 (1.47-6.27)	4,936	4.01 (1.39-6.62)	4,031	3.65 (1.78-5.52)	3,049	3.07 (1.61-4.52)
North Jeolla	1,241	0.95 (0.42-1.47)	2,888	1.97 (1.05-2.89)	1,877	1.10 (0.51-1.69)	1,971	1.30 (0.54-2.07)	2,062	1.15 (0.53-1.78)	2,443	1.52 (0.69-2.35)
South Jeolla	2,588	1.58 (1.03-2.12)	3,958	1.78 (1.23-2.33)	2,290	1.11 (0.76-1.46)	2,905	1.41 (0.88-1.95)	1,869	1.03 (0.67-1.38)	2,819	1.44 (0.92-1.97)
North Gyeongsang	4,064	2.45 (1.88-3.03)	4,274	2.69 (2.03-3.35)	3,122	1.69 (1.16-2.22)	3,243	1.85 (1.32-2.38)	3,535	2.01 (1.43-2.59)	2,824	1.94 (1.36-2.52)
South Gyeongsang	3,228	1.18 (0.04-2.32)	3,154	1.32 (0.86-1.78)	4,511	1.33 (0.79-1.87)	3,277	0.97 (0.51-1.43)	2,712	0.89 (0.46-1.33)	3,614	1.62 (0.83-2.40)
Jeju	594	2.19 (1.40-2.99)	849	1.84 (0.82-2.87)	2,104	2.79 (1.59-3.99)	1,634	2.17 (1.23-3.12)	1,121	2.00 (0.91-3.09)	2,484	4.93 (3.31-6.55)

Note: Prevalence is calculated as the proportion of weighted observations of self-injury among weighted observations of injury patients.

Table S4. Multivariate regression of self-injury with interaction terms

	Model 4			Model 5		
	Odds Ratio	95% CI	p-value	Odds Ratio	95% CI	p-value
Gender						
Men (Reference)						
Women	1.78	(1.46-2.16)		4.28	(3.61-5.07)	
Year						
2004(Reference)						
2005	0.97	(0.78-1.22)	0.819	0.98	(0.78-1.22)	0.843
2006	1.05	(0.85-1.30)	0.62	1.07	(0.87-1.32)	0.544
2007	0.81	(0.65-1.00)	0.054	0.81	(0.65-1.01)	0.064
2008	0.94	(0.73-1.21)	0.655	0.95	(0.73-1.23)	0.683
2009	0.91	(0.71-1.17)	0.465	0.92	(0.72-1.17)	0.502
2010	0.85	(0.66-1.09)	0.196	0.86	(0.67-1.10)	0.226
2011	0.87	(0.72-1.05)	0.139	0.87	(0.72-1.06)	0.177
2012	0.78	(0.63-0.97)	0.028	0.79	(0.64-0.98)	0.036
2013	0.84	(0.70-1.00)	0.053	0.85	(0.71-1.02)	0.074
2014	0.78	(0.65-0.93)	0.005	0.78	(0.66-0.94)	0.007
2015	0.76	(0.64-0.91)	0.002	0.77	(0.65-0.92)	0.003
2016	0.72	(0.55-0.94)	0.016	0.73	(0.56-0.95)	0.018
2017	0.67	(0.58-0.78)	0	0.68	(0.58-0.80)	0
2018	0.73	(0.60-0.89)	0.002	0.74	(0.61-0.89)	0.002
2019	0.81	(0.70-0.95)	0.008	0.82	(0.70-0.96)	0.012
2020	0.96	(0.81-1.13)	0.615	0.96	(0.81-1.14)	0.647
2021	1.00	(0.86-1.18)	0.956	1.02	(0.86-1.20)	0.859
Age group						
≤20 (Reference)						
21-30	1.87	(1.66-2.10)	0	1.92	(1.60-2.30)	0
31-40	1.84	(1.64-2.05)	0	2.13	(1.67-2.73)	0
41-50	1.70	(1.51-1.90)	0	2.45	(1.93-3.11)	0
51-60	1.09	(0.94-1.27)	0.233	2.25	(1.79-2.83)	0
61-70	1.02	(0.85-1.21)	0.856	2.56	(2.03-3.22)	0
71-80	1.07	(0.88-1.29)	0.519	3.69	(3.10-4.38)	0
>80	0.95	(0.74-1.23)	0.71	4.37	(3.57-5.36)	0
State						
Seoul (Reference)						
Pusan	0.77	(0.77-0.78)	0	0.77	(0.77-0.78)	0
Daegu	0.53	(0.53-0.54)	0	0.54	(0.53-0.54)	0
Incheon	1.65	(1.60-1.70)	0	1.65	(1.60-1.70)	0
Gwangju	0.72	(0.71-0.72)	0	0.71	(0.70-0.71)	0
Daejeon	1.25	(1.23-1.27)	0	1.24	(1.23-1.26)	0
Ulsan	0.61	(0.60-0.61)	0	0.6	(0.60-0.61)	0
Gyeonggi	1.26	(1.25-1.27)	0	1.25	(1.25-1.26)	0
Gangwon	1.44	(1.42-1.48)	0	1.43	(1.40-1.46)	0
North Chungcheong	1.17	(1.16-1.18)	0	1.15	(1.14-1.16)	0
South Chungcheong	2.11	(2.08-2.14)	0	2.08	(2.06-2.11)	0
North Jeolla	0.69	(0.69-0.70)	0	0.67	(0.67-0.68)	0
South Jeolla	0.74	(0.73-0.75)	0	0.73	(0.72-0.73)	0
North Gyeongsang	1.13	(1.11-1.14)	0	1.1	(1.09-1.12)	0
South Gyeongsang	0.62	(0.61-0.62)	0	0.61	(0.61-0.61)	0
Jeju	1.42	(1.40-1.45)	0	1.42	(1.40-1.44)	0
Gender # Age Group						
Women#≤20 (Reference)						
Women#21-30				0.96	(0.75-1.22)	0.734
Women#31-40				0.78	(0.56-1.09)	0.14
Women#41-50				0.51	(0.38-0.67)	0
Women#51-60				0.25	(0.20-0.32)	0
Women#61-70				0.18	(0.14-0.23)	0
Women#71-80				0.12	(0.10-0.14)	0
Women#≥80				0.09	(0.08-0.10)	0

Note: The p values under <0.001 is depicted as “0”.

Table S5: Sample distribution of payment methods, alcohol use and mental illnesses

	Injury (n=497,882)		Self-injury (n=13,139)	
	#	%	#	%
Payment Method				
Free of charge	80	0.0	2	0.0
National Health Insurance	312,322	62.7	10,536	80.2
Medical aid type 1	22,736	4.6	901	6.9
Medical aid type 2	4,983	1.0	283	2.2
Industrial accident insurance	17,953	3.6	4	0.0
Car insurance	126,348	25.4	22	0.2
Employer	1,313	0.3	10	0.1
Non-coverage	10,043	2.0	1,339	10.2
Other	2,033	0.4	40	0.3
Unknown	72	0.0	2	0.0
Alcohol				
Yes	6,412	1.3	1,157	8.8
No	73,641	14.8	2,058	15.7
unknown	417,829	83.9	9,924	75.5
Mental Illness				
<Primary Diagnosis>				
Mental Illness				
Yes	1,683	0.3	781	5.9
No	496,199	99.7	12,358	94.1
Mental Illness (category)				
Dementia related	216	12.8	6	0.8
Alcohol use related	0	0	0	0
Psychoactive substance related	39	2.3	23	2.9
Psychosis or schizophrenia related	232	13.8	110	14.1
Mood disorder	884	52.5	32	4.1
Other	312	18.5	610	78.1
<All Diagnosis>				
Mental Illness				
Yes	18,534	3.7	4,489	34.2
No	479,348	96.3	8,650	65.8
Mental Illness (category)				
Dementia related	7,839		284	
Alcohol use related	1,849		386	
Psychoactive substance related	204		135	
Psychosis or schizophrenia related	1,101		391	
Mood disorder	5,604		3,325	
Other	3,147		483	

Figure S1: Flowchart of the selection of study population and outcome

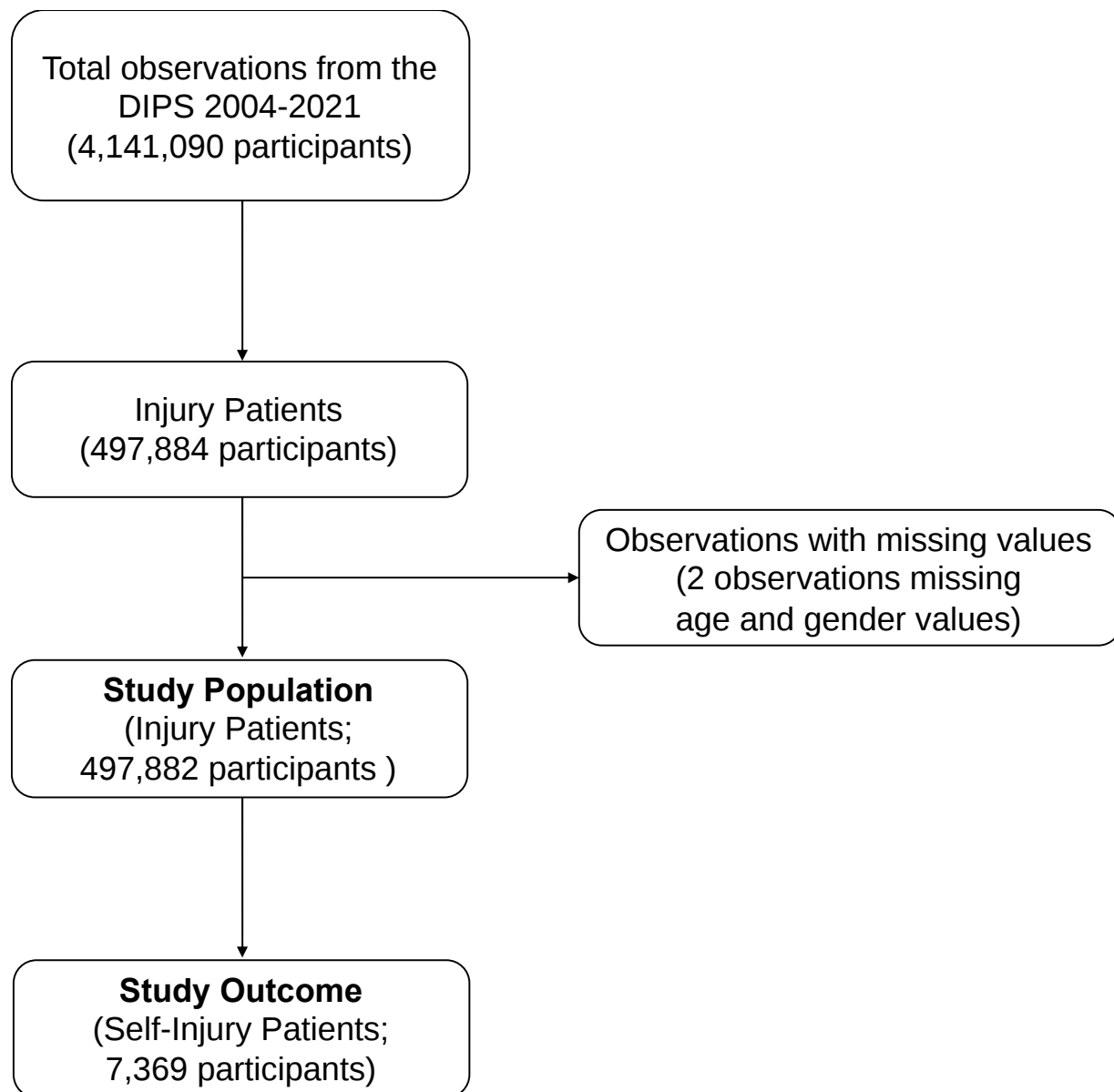
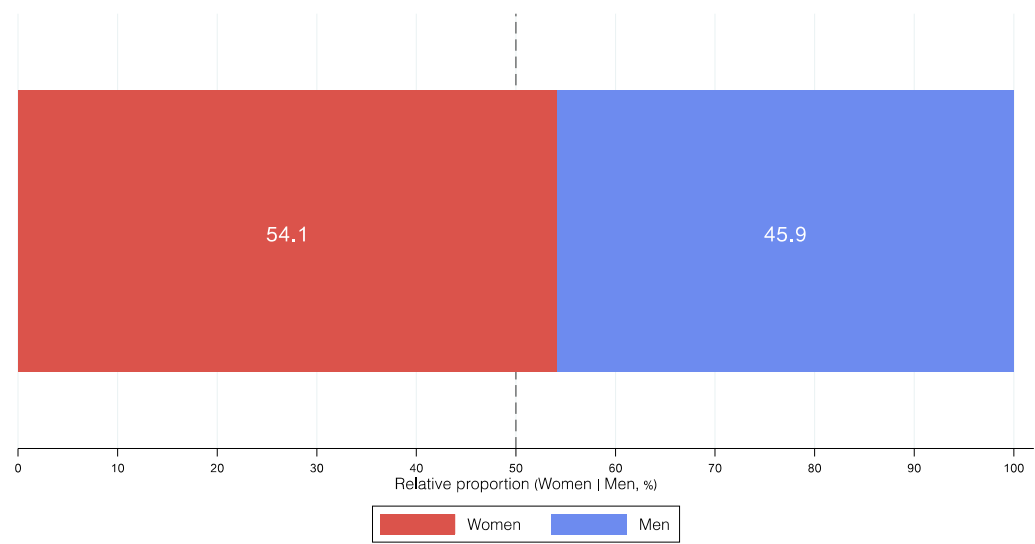
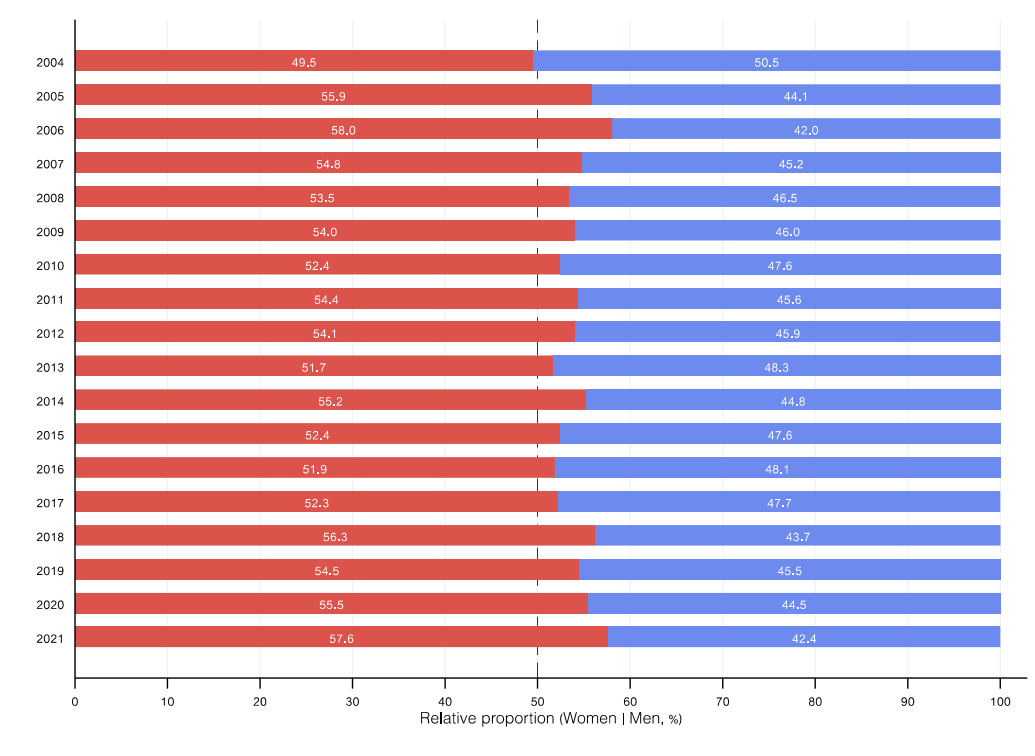


Figure S2. Burden of self-injury by gender, year, and age group

a. Total



b. Year



c. Age group

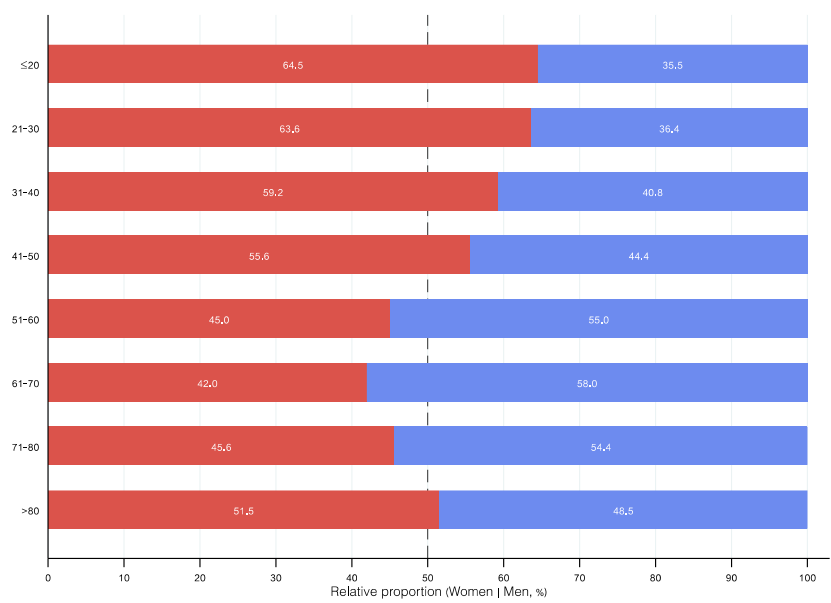
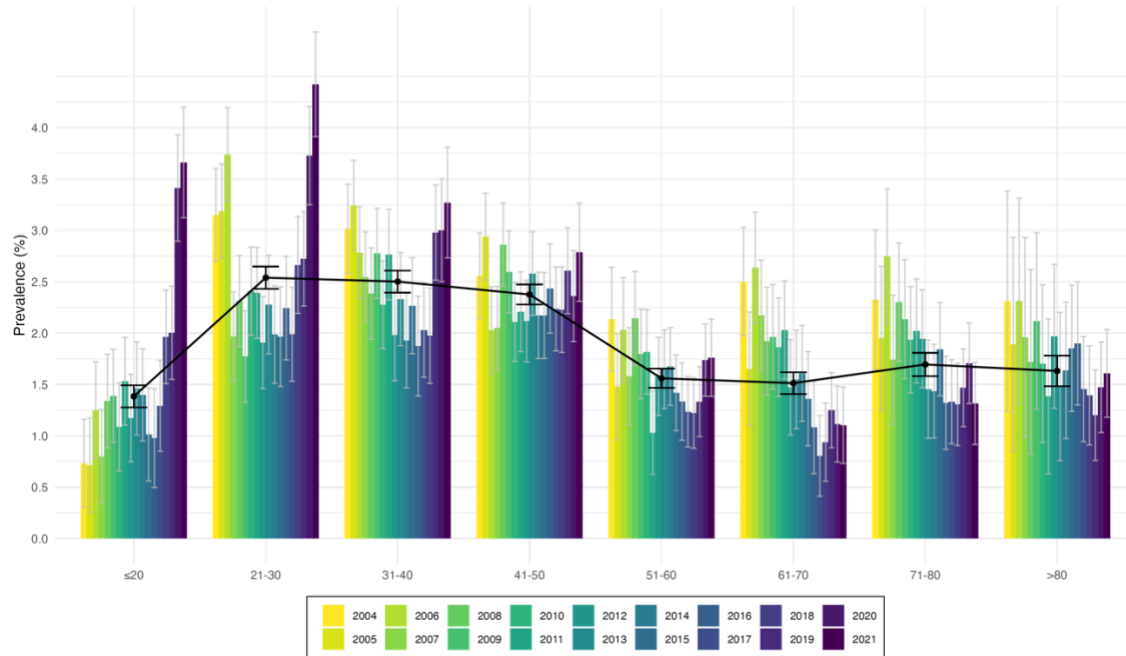


Figure S3. Trends of age distributions of self-injury, 2004-2021, South Korea

a. Percent prevalence by age group



Note: The pooled difference of each age group is shown as black points and error bars.

b. Difference (Women – Men) of SI prevalence by age group

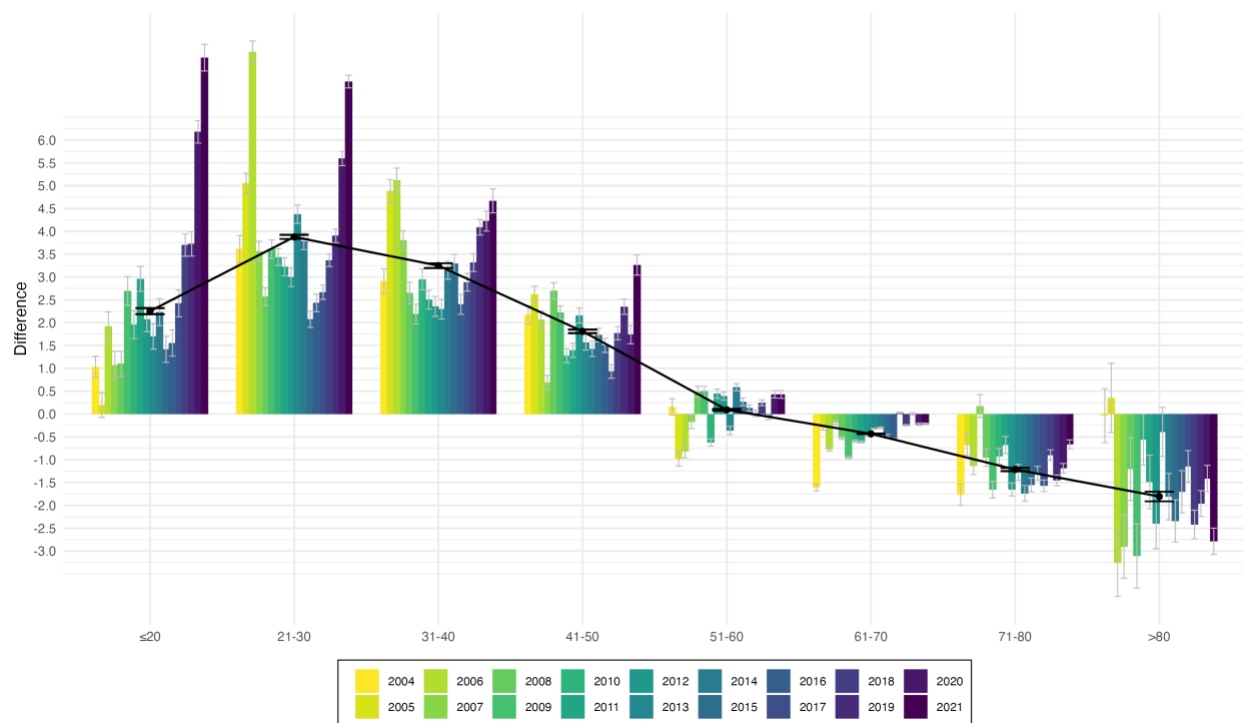
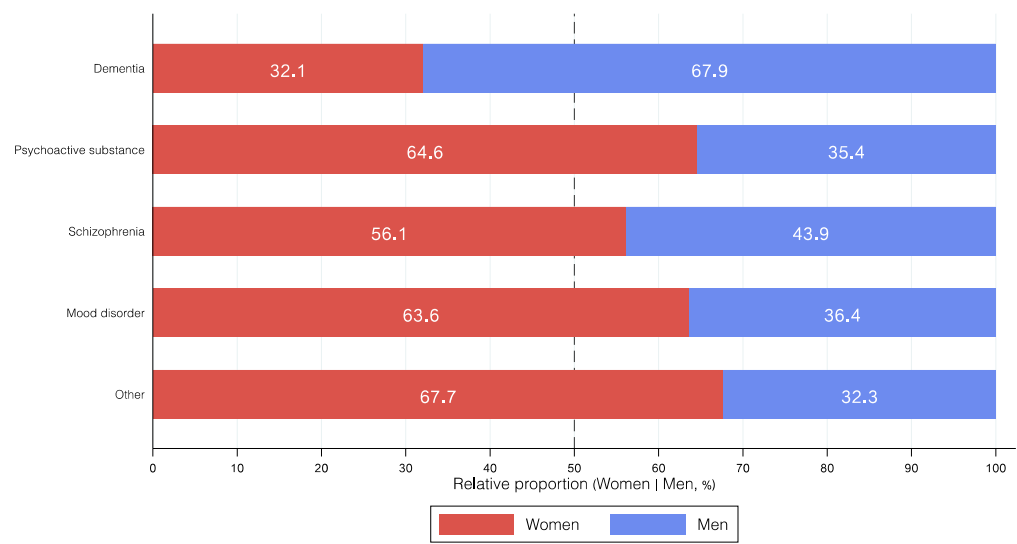


Figure S4: Gender distribution of mental health diagnosis in self-injury patients

a. Primary diagnosis



b. All diagnosis

