Self and environmental exposures to drinking, smoking, gambling or video game addiction are associated with adult hypertension, heart and cerebrovascular diseases, allergy, self-rated health and happiness: Japanese General Social Survey, 2010

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ABSTRACT

Background: It was aimed to study the relationships between addiction behaviors and human health and well-being in East Asians in a national and population-based setting.
Methods: Data were retrieved from Japanese General Social Survey, 2010. Information on demographics, lifestyle factors, addiction behaviors and self-reported health conditions and well-being in Japanese adults was obtained by household interview. Analysis included chi-square test, logistic and multi-nominal regression modeling.
Results: Of 5003 Japanese adults (aged 20–89) included in the study cohort, 13.8%, 14.7%, 4.8% and 5.5% were addicted to drinking, smoking, gambling and video games, respectively while 10.6%, 13.8%, 4.3% and 11.4% were exposed to co-residing family member's drinking, smoking, gambling and video game addiction behaviors, respectively. People who reported addiction to drinking had poor self-rated health, hypertension and food allergy. People who reported addiction to smoking had fair to poor self-rated health, unhappiness, cerebrovascular disease and itchy skin. People who reported addiction to gambling had fair to poor self-rated health and unhappiness. People who reported addiction to video games had poor self-rated health and heart disease. People who were exposed to addiction to drinking, smoking, gambling and video games from co-residing family member(s) also reported hay fever, poor self-rated health and unhappiness.
Conclusion: Self and environmental exposures to drinking, smoking, gambling or video game addiction are associated with adult hypertension, heart and cerebrovascular diseases, allergy, self-rated health and happiness. Future public health programs continuing to minimize self and environmental exposures to addiction behaviors tackling health concerns would still be encouraged.

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1. Introduction

There have been abundance of literature regarding the impact of addiction to drug use on health concerns. However, less attention could have been received in people with addiction to other risky behaviors such as drinking, smoking, gambling and video games, in particular in (older) adults. Older cohorts could have more psychological addiction but did not consume more tar or nicotine than young people [1]. Binge drinking, although not necessarily addictive, has been a risk contributor to many chronic diseases. The relationship between addiction to smoking and happiness was previously observed more in women while a later experimental study has observed the individual change in [(11)C]raclopride binding correlated with change in subjective measures of "amused" and "happiness" in the associative striatum and sensorimotor striatum [2,3]. Environmental factors are important to determine the form of gambling that would increase the reward system in the brain [4]. Internet addiction condition was also recently found to be characterized by a more relevant mental, behavioral, and social disengagement compared to pathological gambling [5]. In the eastern societies such as China, Iran, Turkey and South Korea, addiction to internet could have been more prevalent than in the western societies [6–9]. Following this context, therefore, it was aimed to study the associations between self and family addiction behaviors and human health and well-being in the Japanese adult population in a national and population-based setting.

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Table 1
Associations between addiction to drinking and Japanese adult health conditions.

	No addiction (n = 4280, 86.2%)	Addiction (n = 686, **13.8%**)	P value	OR or RRR (95% CI)[a]	P value
Self-rated health			0.097		
Good	1200 (86.6%)	186 (13.4%)		1.00	
Fair	629 (86.3%)	100 (13.7%)		1.04 (0.79–1.36)	0.801
Poor	306 (82.3%)	66 (17.7%)		1.39 (1.00–1.93)	0.048
Happiness			0.676		
Good	1386 (85.7%)	232 (14.3%)		1.00	
Fair	612 (86.8%)	93 (13.2%)		0.83 (0.63–1.08)	0.170
Poor	120 (84.5%)	22 (15.5%)		0.98 (0.60–1.61)	0.935
Hypertension	310 (82.5%)	66 (17.6%)	0.022	1.65 (1.12–2.43)	0.011
No	65 (87.5%)	93 (12.5%)		1.00	
Diabetes	123 (82.0%)	27 (18.0%)	0.152	0.99 (0.61–1.61)	0.963
No	838 (86.4%)	132 (13.6%)		1.00	
Heart disease	92 (81.4%)	21 (18.6%)	0.159	1.32 (0.76–2.30)	0.326
No	869 (86.3%)	138 (13.7%)		1.00	
Respiratory problem	84 (89.4%)	10 (10.6%)	0.302	0.60 (0.29–1.21)	0.151
No	877 (85.5%)	149 (14.5%)		1.00	
Hyperlipemia	96 (85.0%)	17 (15.0%)	0.785	1.17 (0.65–2.10)	0.597
No	865 (85.9%)	142 (14.1%)		1.00	
Cerebrovascular disease	42 (79.3%)	11 (20.8%)	0.161	1.47 (0.70–3.08)	0.304
No	919 (86.1%)	148 (13.9%)		1.00	
Back pain/arthralgia	432 (87.5%)	62 (12.6%)	0.161	0.90 (0.62–1.30)	0.573
No	529 (84.5%)	97 (15.5%)		1.00	
Prostatic disease	10 (90.9%)	1 (9.1%)	0.626	0.38 (0.05–3.09)	0.367
No	951 (85.8%)	158 (14.3%)		1.00	
Allergy disease	22 (81.5%)	5 (18.5%)	0.515	1.19 (0.42–3.38)	0.749
No	939 (85.9%)	154 (14.1%)		1.00	
Cancer	24 (100%)	0 (0%)	0.044	N/a	
No	937 (85.5%)	159 (14.5%)		1.00	
Mental illness	18 (78.3%)	5 (21.7%)	0.295	1.46 (0.49–4.38)	0.494
No	943 (86.0%)	154 (14.0%)		1.00	
Sensory organ disease	26 (92.9%)	2 (7.1%)	0.279	0.66 (0.14–3.01)	0.590
No	935 (85.6%)	157 (14.4%)		1.00	
Liver/pancreas/gallbladder disease	13 (92.9%)	1 (7.1%)	0.447	0.41 (0.05–3.37)	0.410
No	948 (85.7%)	158 (14.3%)		1.00	
Gastrointestinal disease	25 (86.2%)	4 (13.8%)	0.950	1.04 (0.33–3.24)	0.949
No	936 (85.8%)	155 (14.2%)		1.00	
Kidney disease	19 (100%)	0 (0%)	0.074	N/a	
No	942 (85.6%)	159 (14.4%)		1.00	
Thyroid disease	14 (100%)	0 (0%)	0.126	N/a	
No	947 (85.7%)	159 (14.4%)		1.00	
Bone fracture	4 (100%)	0 (0%)	0.415	N/a	
No	957 (85.8%)	159 (14.3%)		1.00	
Physical disability/postoperative sequela	10 (83.3%)	2 (16.7%)	0.805	1.56 (0.30–8.26)	0.598
No	951 (85.8%)	157 (14.2%)		1.00	
Headache/stiff shoulder	18 (85.7%)	3 (14.3%)	0.991	1.59 (0.41–6.15)	0.501
No	943 (85.8%)	156 (14.2%)		1.00	
Atopic dermatitis	86 (86.0%)	14 (14.0%)	0.856	1.01 (0.56–1.84)	0.964
No	2035 (86.6%)	314 (13.4%)		1.00	
Hay fever	556 (86.7%)	85 (13.3%)	0.909	1.10 (0.83–1.44)	0.541
No	1565 (86.6%)	243 (13.4%)		1.00	
Asthma	95 (86.4%)	15 (13.6%)	0.939	1.05 (0.59–1.87)	0.869
No	2026 (86.6%)	313 (13.4%)		1.00	
Food allergy	59 (81.9%)	13 (18.1%)	0.238	1.97 (1.03–3.78)	0.040
No	2062 (86.8%)	315 (13.3%)		1.00	
Itchy skin	213 (83.9%)	41 (16.1%)	0.194	1.19 (0.82–1.73)	0.350
No	1913 (86.8%)	291 (13.2%)		1.00	
Influenza	103 (83.1%)	21 (16.9%)	0.246	1.28 (0.77–2.12)	0.334
No	2030 (86.7%)	311 (13.3%)		1.00	

[a] Adjusted for age and sex.

2. Methods

2.1. Study sample

The Japanese General Social Surveys Project is a Japanese version of the original General Social Survey project conducted by the National Opinion Research Center, University of Chicago (more details via: http://www.icpsr.umich.edu/icpsrweb/ICPSR/series/209#title). The surveys were designed to solicit political, sociological and economic information from people living in Japan which employed two-stage stratified random sampling (for more details via: http://www.icpsr.umich.edu/icpsrweb/ICPSR/studies/34623#method). In the current analysis, the most recent study cohort in 2010 with available data on demographics, lifestyle factors, addiction behaviors (including addiction to drinking, smoking, gambling and video games from self and co-residing family members) and current self-reported health conditions in Japanese adults (aged 20–89) was obtained by household interview.

2.2. Statistical analysis

Study exposure variables were self addition to drinking, smoking, gambling and video games (yes or no) and exposures to such behaviors from co-residing family member(s). Study outcome variables were self-rated health (very good, good, fair, poor or very poor), subjective happiness (very good, good, fair, poor or very poor) and common health conditions (yes or no) including hypertension, diabetes, heart disease, respiratory disease, hyperlipemia, cerebrovascular disease, back pain, prostatic disease, allergy, cancer, mental illness, sensory organ disease, liver disease, gastrointestinal disease, kidney disease, thyroid disease, bone fracture, physical disability, headache, atopic dermatitis, hay fever, asthma, food allergy, itchy skin and influenza. Effects were estimated with relative risk ratios (RRR) or odds ratios (OR) by using logistic or multi-nominal regression modeling, depending on the outcomes being binary or categorical, and 95% confidence intervals (CI), with P < 0.05 considered statistically significant. Statistical software STATA version