

Exploring longitudinal associations between personality disorganization and problematic gambling: A cross-lagged analysis

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IN RESPONSIBLE GAMING

13th European Conference on Gambling Studies and
Policy Issues | September 6-9, 2022 | Oslo, Norway



Personality disorders and addictive behaviors

- A strong relationship between substance use disorders and personality disorders (especially – but not exclusively – Type B PDs)
- Similar findings in the case of gambling disorder

TABLE 1. Sample, Measurement, Method of Assessment, and Prevalence of Personality Disorders in Pathological Gamblers

Study	Sample	Instrument	Control	Method	Personality Disorder Prevalence Rate (%)										
					Any PD	Cluster A			Cluster B			Cluster C			
						PAR	SZD	SZT	ASL	BDL	HIS	NAR	AVD	DEP	O-C
Bellaire & Caspari (1992)	51 TS	NR	No	—	49	—	—	—	—	—	—	—	—	—	—
Black & Moyer (1998)	30 NTS	PDQ-4*	No	SR	87	26	33	30	17	23	7	20	59	7	50
Bland et al. (1993)	30 NTS	DIS	NGs	SR	—	—	—	—	40	—	—	—	—	—	—
Blaszczyński & McConaghy (1994)	306 TS	GS	No	Int.	—	—	—	—	15	—	—	—	—	—	—
Blaszczyński & Steel (1998)	82 TS	PDQ-R	No	SR	93	33	17	31	47	57	24	54	30	40	26
Blaszczyński et al. (1989)	109 TS	GS	No	Int.	—	—	—	—	15	—	—	—	—	—	—
Cunningham-Williams et al. (2000)	161 NTS*	DIS	NPGs	SR	—	—	—	—	35	—	—	—	—	—	—
Fernandez-Motavalo & Echeburu (2004)	50 TS	IPDE	NGs	Int.	32	8	—	—	8	16	—	8	—	—	—
Ibanez et al. (2001)	69 TS	SCID-II	No	Int.	42	—	—	—	15	—	—	—	—	—	—
Kroeber (1992)	46 TS	NR	No	—	—	—	—	—	20	5	—	11	—	7	—
Lesieur & Blume (1990)	7 TS	NR	No	Int.	71	0	0	29	0	14	0	0	0	0	—
Petry et al. (2005)	195 NTS	AUD	NGs	Int.	61	24	15	—	23	—	13	—	14	3	28
Pietrzak & Petry (2005)	237 TS	SCID-II	No	Int.	—	—	—	—	17	—	—	—	—	—	—
Shutske et al. (2001)	112 NTS	DIS	NPGs	SR	—	—	—	—	24	—	—	—	—	—	—
Specker et al. (1996)	40 TS	SCID-II	No	Int.	25	3	3	0	0	1	0	5	13	5	5

Notes. TS = Treatment-seeking Gamblers, NTS = Nontreatment-seeking Gamblers, NTS* Nontreatment-seeking pathological and problem gamblers combined; IPDE = International Personality Disorders Examination, DIS = Diagnostic Interview Schedule, PSS = Psychiatric Status Schedule, PDQ-R = Personality Disorders Questionnaire revised, GS = General Schedule Diagnostic, PDQ-4* = Personality Disorder Questionnaire, DSM-IV version, SCID-II = Structured Clinical Interview Diagnostic for Axis-II disorders, AUD = Alcohol Use Disorder and Associated Disabilities Interview Schedule-DSM-IV Version; NGs = Non-gambler control group, NPGs = Nonpathological gambler control group, No = No control group or some PGs were compared to other PGs (e.g., slot machine PGs compared to lottery ticket PGs, or PGs with ASL compared to PGs without ASL); Int. = Interview, SR = self-report, — = not reported; PD = Personality Disorder, PAR = Paranoid PD, SZD = Schizoid PD, SZT = Schizotypal PD, ASL = Antisocial PD, BDL = Borderline PD, HIS = Histrionic PD, NAR = Narcissistic PD, AVD = Avoidant PD, DEP = Dependent PD, O-C = Obsessive-Compulsive PD.

Personality disorders: Diagnostics and assessment

- A shift from the categorical approach of personality disorders classifications to a dimensional approach
 - Levels of Personality Functioning (LPF) (“Alternative DSM-5 Model for Personality Disorders” in Section III.)
 - The severity of personality disturbance (ICD-11)

The Inventory of Personality Organisation (IPO)

Kernberg's model on levels of personality organization

- (a) use of psychological defense mechanisms;
- (b) extent of reality testing;
- (c) the level of identity integration;
- (d) the control of aggression;
- (e) moral functioning (ethical behavior, ideals and values)

The Inventory of Personality Organization (IPO) (Clarkin et al., 2001)

- 84-item self-report questionnaire (5-point Likert-type scale ranging from never true to always true)
 - three primary scales
 - Primitive Psychological Defenses (PPD; 16 items),
 - Identity Diffusion (ID; 21 items), and
 - Reality Testing (RT; 20 items)
 - two additional scales,
 - Aggression (AGG; 18 items) and
 - Moral Values (MV; 8 items + 2 PPD items + 1 ID item)
- Shorter, **16-items version** (Zimmermann et al., 2013)

Goal of the study

To examine the **cross-lagged** and **bidirectional** associations between personality disorganization and problematic gambling in a **longitudinal** setting.

Methods



Budapest Longitudinal Study

(<https://bls2018.hu>)

- A representative sample of young adults (age 18-34 years)
- First two waves of the BLS Study: N=2660
- Females: 52.02%
- Mean age: 27.03 years [SD=4.76]
- Presence of past year gambling in both waves: N=360

Measures

- Frequency of gambling
 - Ever, past year, past month
- Problem Gambling Severity Index (PGSI)
- Inventory of Personality Organization (IPO)

Association of gambling status between Wave 1 and Wave 2

		Wave 2					
		Non-gamblers		Non-problematic gamblers		Gamblers experiencing problems	
		N (%)	z	N (%)	z	N (%)	z
Wave 1	Non-gamblers	1467 (73.94%)	2.40	333 (55.97%)	-3.95	44 (57.89%)	-1.21
	Non-problematic gamblers	408 (20.56%)	-4.23	243 (40.84%)	7.51	22 (28.95%)	0.62
	Gamblers experiencing problems	109 (5.49%)	0.58	19 (3.19%)	-2.14	10 (13.16%)	3.04

Note. %-values in each column represent the proportions in the given category measured at Wave 2. z: standardized residuals. Standardized residuals (z) are highlighted in bold if they are >1.96 or <-1.96. Statistical testing of the association between the two variables: $\chi^2(4)=111.63$; $p<.001$; Cramer's V= .15.

Bivariate correlations between the study variables among gamblers ($N=360$)

	1.	2.	3.	4.	5.	6.	7.
1. Female gender (vs. Male gender) – Wave 1	-						
2. Age – Wave 1	-0.09	-					
3. Gambling in the past 30 days (vs. Absence of gambling in the past 30 days) – Wave 1	-0.07	-0.22***	-				
4. Gamblers experiencing problems (vs. Non-problematic gamblers) – Wave 1	-0.21	0.04	-0.06	-			
5. Personality disorganization – Wave 1	0.01	0.09	-0.19**	0.51***	-		
6. Gambling in the past 30 days (vs. Absence of gambling in the past 30 days) – Wave 2	0.08	-0.11	0.37***	-0.13	-0.12	-	
7. Gamblers experiencing problems (vs. Non-problematic gamblers) – Wave 2	-0.19	0.06	0.03	0.51***	0.31***	-0.25*	-
8. Personality disorganization – Wave 2	0.11	0.18***	-0.20**	0.39***	0.49***	-0.18**	0.42***

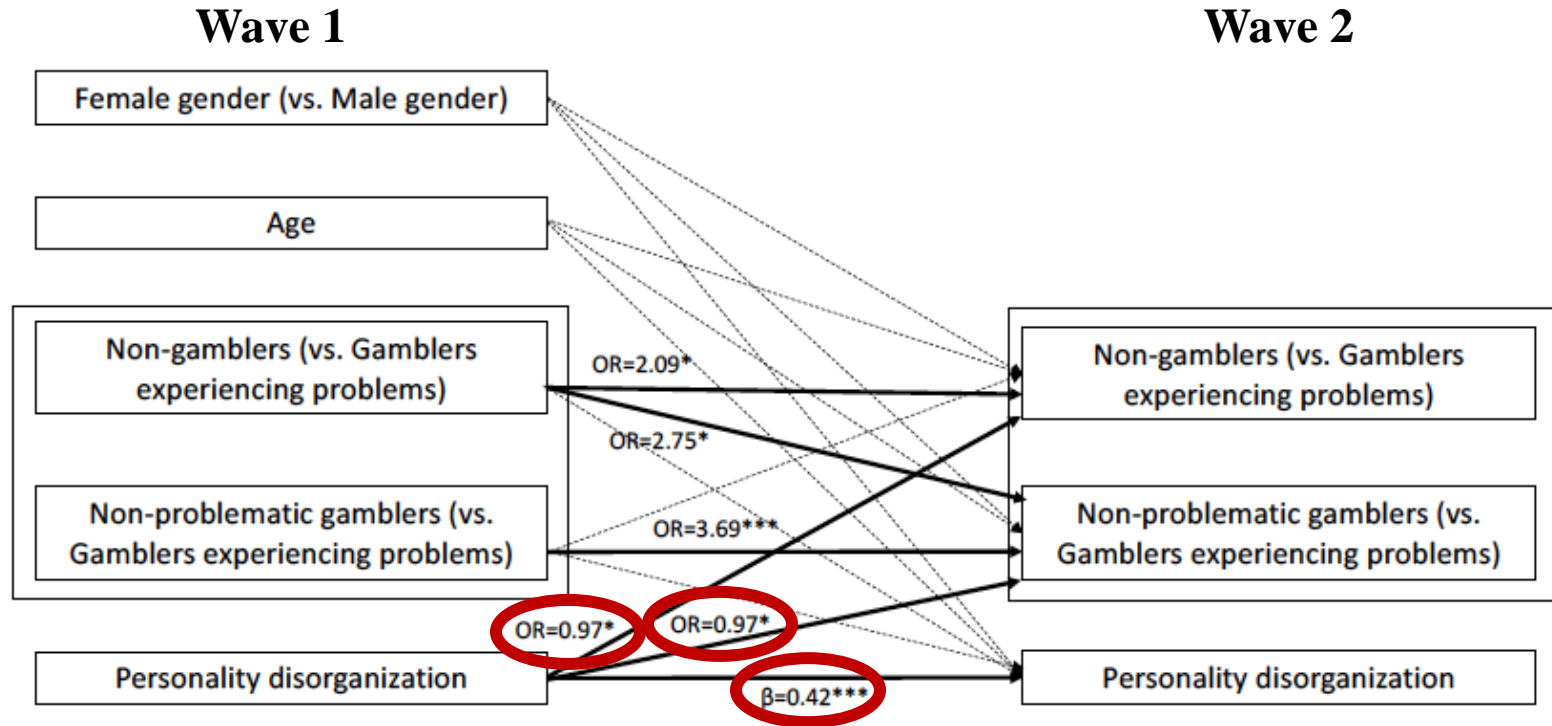
Note. Level of significance: * $p < .050$; ** $p < .010$; *** $p < .001$. Significant ($p < .050$) correlation estimates (r) are highlighted in bold.

Cross-lagged model between personality disorganization and gambling outcomes in the full sample (N=2660)

Reference category: 'Gamblers experiencing problems'

Predictor variables at Wave 1	Outcome variables at Wave 2		
	Non-gamblers ¹ OR [95% CI]	Non-problematic gamblers ¹ OR [95% CI]	Personality disorganization ² β [95% CI]
Female gender (vs. Male gender)	1.449 [0.785; 2.678]	1.269 [0.680; 2.370]	.001 [-.037; .038]
Age	0.962 [0.887; 1.043]	1.010 [0.931; 1.096]	.004 [-.036; .044]
Non-gamblers (vs. Gamblers experiencing problems)	2.085 [1.003; 4.331]*	2.747 [1.222; 6.175]*	-.014 [-.118; .090]
Non-problematic gamblers (vs. Gamblers experiencing problems)	1.145 [0.486; 2.697]	3.685 [1.467; 9.259]**	-.024 [-.124; .076]
Personality disorganization	0.973 [0.948; 0.999]*	0.966 [0.940; 0.992]*	.416 [.370; .461]***
Explained variance (R ²)	-	-	18%

Cross-lagged model between personality disorganization and gambling outcomes in the full sample (N=2660) Reference category: 'Gamblers experiencing problems'



Notes. N=2660. Dashed lines represent non-significant regression coefficients ($p > 0.050$), whereas solid and highlighted lines are significant regression coefficients ($p < 0.050$). Level of significance: * $p < 0.050$; ** $p < 0.010$; *** $p < 0.001$. OR: odds ratio (outcome variable is nominal). β : standardized regression coefficient (outcome variable is continuous).

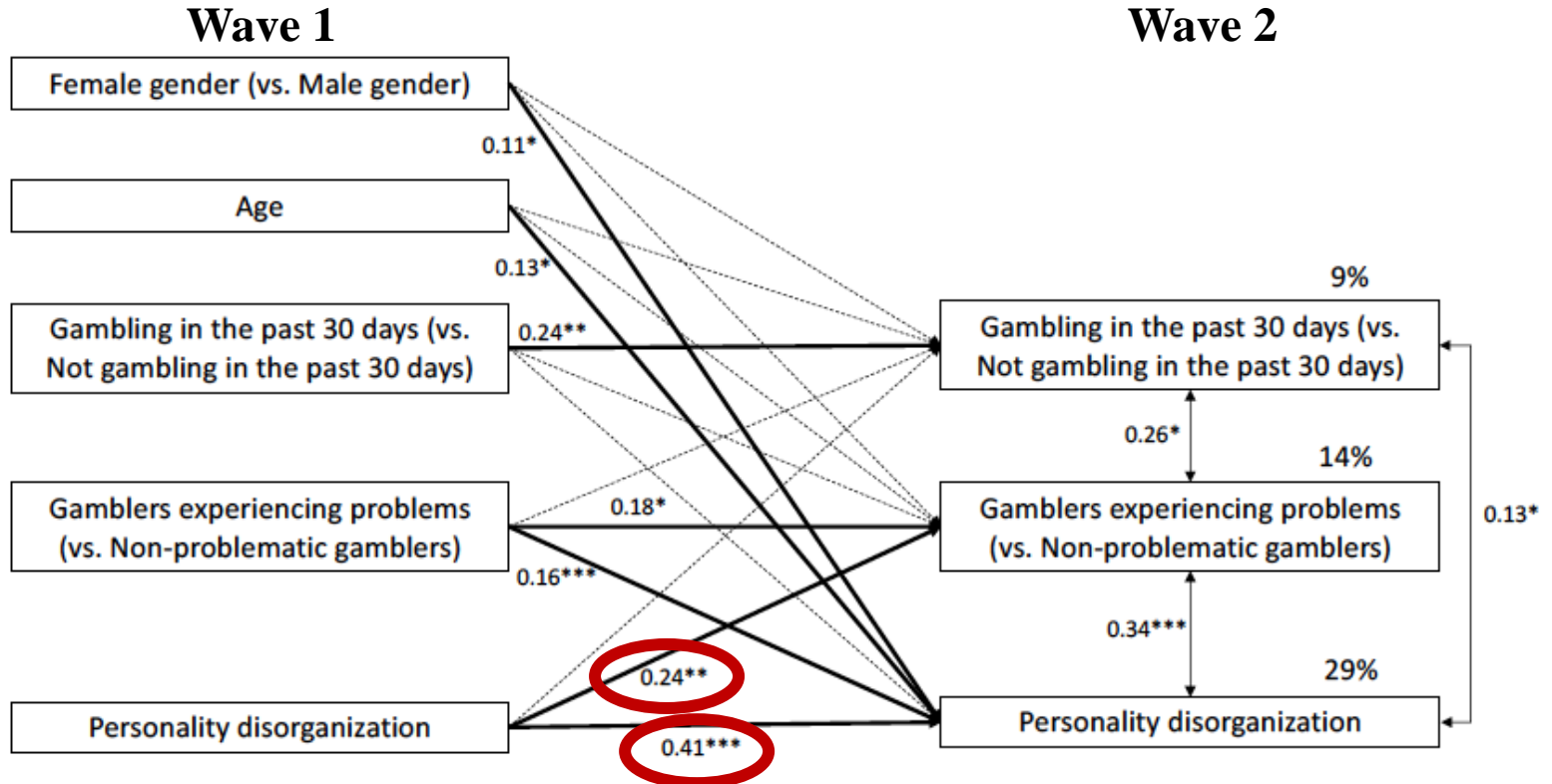
Cross-lagged model between personality disorganization and gambling outcomes among gamblers ($N=343$)

Reference category: 'Non-problematic gamblers'

Predictor variables at Wave 1	Outcome variables at Wave 2		
	Gambling in the past 30 days ¹ β [95% CI]	Gamblers experiencing problems ² β [95% CI]	Personality disorganization ³ β [95% CI]
Female gender (vs. Male gender)	.084 [-.072; .240]	-.135 [-.346; .077]	.110 [.015; .205]*
Age	-.059 [-.233; .115]	-.005 [-.267; .256]	.125 [.020; .230]*
Gambling in the past 30 days (vs. Absence of gambling in the past 30 days)	.240 [.098; .383]**	.063 [-.158; .284]	-.064 [-.145; .017]
Gamblers experiencing problems (vs. Non-problematic gamblers)	-.046 [-.198; .105]	.176 [.029; .322]*	.158 [.088; .227]***
Personality disorganization	-.066 [-.239; .108]	.235 [.061; .409]**	.408 [.331; .485]***
Explained variance (R^2)	9%	14%	29%

Cross-lagged model between personality disorganization and gambling outcomes among gamblers (N=343)

Reference category: 'Non-problematic gamblers'



Notes. N=343. Dashed lines represent non-significant regression coefficients ($p > 0.050$), whereas solid and highlighted lines are significant regression coefficients ($p < 0.050$). Values in each line are standardized regression coefficients (β). Double-headed arrows are correlation coefficients between the outcome variables. Level of significance: ^{NS} $p > 0.050$; * $p < 0.050$; ** $p < 0.010$; *** $p < 0.001$.

Conclusions

- The longitudinal effect of personality disorganization on subsequent presence of gambling problems (compared to both non-gamblers and non-problematic gamblers) can highlight the possible risk role of personality disorganization in the development of problematic gambling.
- The longitudinal predictive effect of problematic gambling on personality disorganization can suggest a bidirectional relationship between these constructs

THANK YOU FOR YOUR ATTENTION

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