The University of Edinburgh

Z-proso
The Zurich Project on the Social Development from Childhood to Adulthood

Occupational Future Time Perspective and Mental Health Problems across Adolescence: Random-Intercept Cross-Lagged Panel Analyses

Yi Yang[1*], Ingrid Obsuth[2], Xinxin Zhu[1], Denis Ribeaud[3], Manuel Eisner[3,4], Aja Murray[1]

[1]Department of Psychology, University of Edinburgh, UK

[2]Clinical and Health Psychology, University of Edinburgh, UK

[3]Jacobs Center for Productive Youth Development, University of Zurich, Switzerland

[4]Institute of Criminology, University of Cambridge, UK

Future time perspective

- A general concern for future, which activates goal-seeking, self-regulation
- Associated with many mental problems
- E.g., internalizing, externalizing, subs use, ADHD, etc.

Table 1. Future Time Perspective and Mental Health Problems

Reference	Sample Size	Mental Problem	Age (range/mean)	Results
Duangpatra et al., 2009	607	**sensation seeking**	range=18-29	*r*= -.25, *p*< .01
Fabbri et al., 2022	400	**insomnia**	mean=37.18	*r*= -.15, *p*< .05
Gruber et al., 2012	Study 1: 509; Study 2: 32 patients, 30 controls	**mania**	study 1: mean=19.35; study 2: patients mean=30.81, and controls mean=31.45	study 1: *r*= -.09, *p* < .05); Study 2: F= 8.68, *p*< .01 (mania with lower FTP)
Karaytuğ et al., 2022	150 patients; 84 controls	**bipolar disorder**	patients mean=42.3, and controls mean=43.2	U= .169, *p*< .05 (BD with higher FTP)
Kooij et al., 2018 (meta-analysis)	n=4327, k=16	**depression**	mean=32.5 (k=167)	*ρ*= -.34, *p*< .001
Kooij et al., 2018 (meta-analysis)	n=1950, k=13	**anxiety**	mean=32.5 (k=167)	*ρ*= -.23, *p*< .01
Kooij et al., 2018 (meta-analysis)	n=33753, k=30	**substance use**	mean=32.5 (k=167)	*ρ*= -.22, *p*< .001
Kooij et al., 2018 (meta-analysis)	n=4257, k=7	**risk behaviour**	mean=32.5 (k=167)	*ρ*= -.22, *p*< .001
Laghi et al., 2009	3700	**suicidality**	range=14-19	severe suicidal ideators reported significantly lower FTP
Longobardi et al., 2021	403	**victimization**	mean=12.2	*r*= -.14, *p*< .01
MacKillop et al., 2006	451	**pathological gambling**	mean=19.4	*r*= -.20, *p*< .05
Mostowik et al., 2021	49 patients, 1150 controls	**personality disorder**	range=18-49	t= −2.58, *p*< .05 (personality disorder with lower FTP)
Shahnaz et al., 2019	465	**suicide**	range=18-72	t= 3.59 , *p*< .01 (suicidal ideators with lower FTP)
Stolarski et al., 2016	300	**aggression**	range=18-67	*r*= -.20, *p*< .001
Unger et al., 2018	314	**compulsive behaviour**	range=18-33	Germany: *β*= .10, *p*< .05; Ukraine: *β*= -.19, *p*< .001;
Weissenberger et al., 2020	1518	**ADHD**	range=18-65	*r*= -.16, *p*< .001

Research questions

Therapeutical technique, e.g.,

- "temporal priming", "framing of time", and "episodic future thinking"
- Acceptance and commitment therapy: "value", "committed action"
- RCT: "sense of purpose and future", "goal monitoring", and "life goal settings"

Effectiveness?

Study 1:

Temporal "casual"-like effect?

Within-person associations

RI-CLPM: random intercept cross-lagged panel model

Study 2:

Effective transdiagnostic elements?

Bi-factor/S-1-bifactor: test transdiagnostic assumption

Methods

Study 1: within-person association?

Occupational future time perspective: (4-point, 1= false 4= true)

1. ‘When I grow up I want to have an interesting job, and I’m doing everything now to work towards that goal.’
2. ‘I try hard at school to have a good job later in life.”
3. “Doing well at school is important to me.”

- **Mental health:** Social Behaviour Questionnaire (SBQ)
- ADHD, externalizing, internalizing (composed scores)
- N=1180
- age = 13, 15, 17

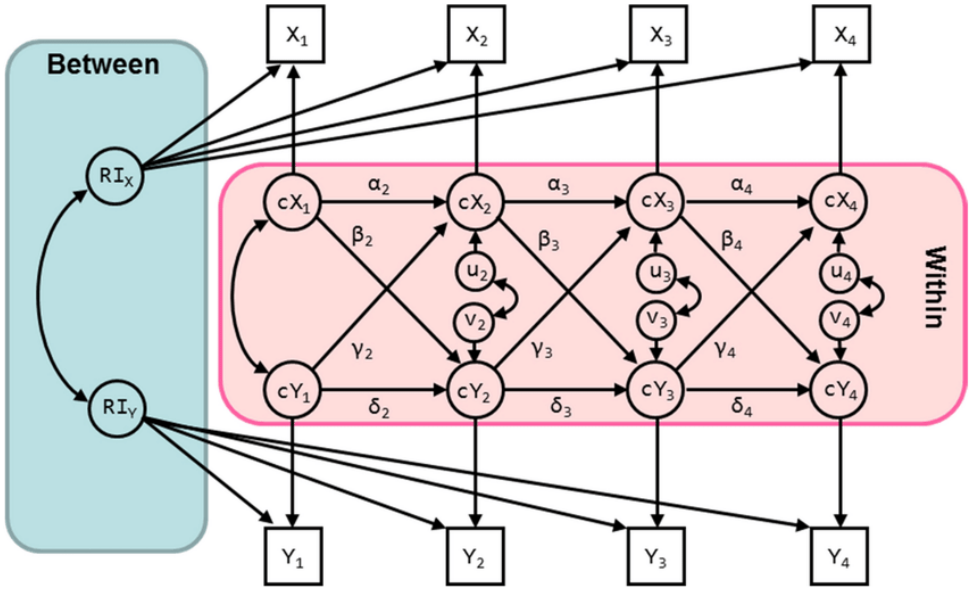
Statistical models

Study 1: longitudinal study

Several approaches are possible for disaggregating between- and within-person effects, such as latent curve model with structured residuals (LTM-SR), and RI-CLPM

RI-CLPM showed less biased reciprocal effects than LTM-SR (Usami et al., 2019)

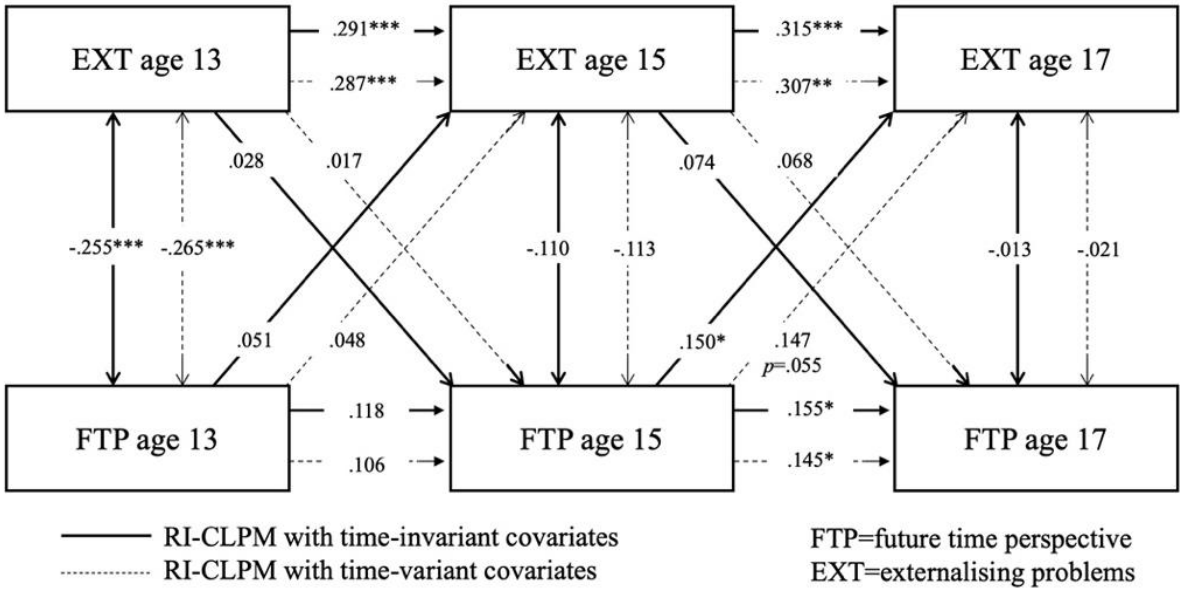
another study compared 7 cross-lagged models found RI-CLPM is more stably converged.



Within-person? RI-CLPM results

Effects of covariates (sex, SES): Time invariant vs. time varying effect?

- ΔBIC > 10 as the standard to support the model with lower BIC as the best model
- BIC_{vary} - BIC_{stable}: ΔBIC_{ADHD} = 50.462; ΔBIC_{EXT} = 50.411; ΔBIC_{INT} = 36.12



Within-person? RI-CLPM results

After controlling for sex and SES:

1. Cross-lagged: OFTP-age15 positively associated with externalizing-age17 (β= .150, p< .05; [95% CI = -.002, .155]);
2. Some within-person autoregressive and concurrent associations;
3. Significant between-person effects (RI): OFTP with ADHD/INT/EXT;

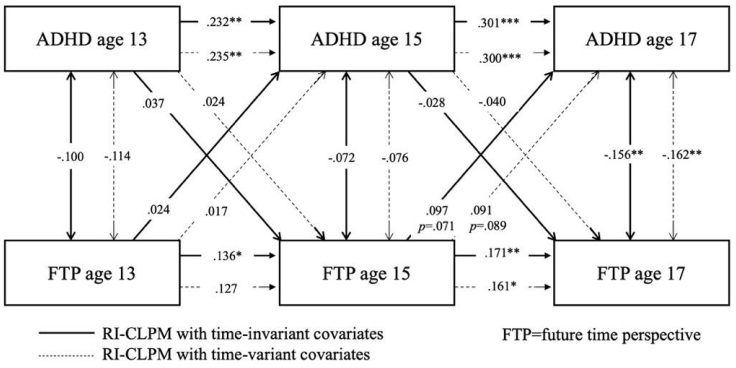


Figure 1. Within-person associations between future time perspective and ADHD controlling for sex, household income, parental education level

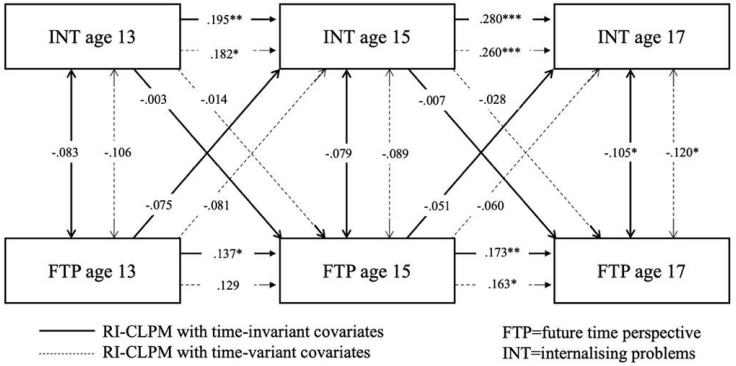


Figure 3. Within-person associations between future time perspective and internalising problems controlling for sex, household income, parental education level

Conclusions & limitations

1. Little evidence that improving an adolescent's OFTP would improve their mental health;
2. Higher OFTP -age15 associated with higher EXT-age17: interventions on OFTP need also to equip adolescents with the relevant skills (e.g., self-regulation) and resources.

1. Vocational education and training (VET) path may influence the mental well-being of VET students differently compared to those who opt for traditional high school education, as they are directly exposed to the pressures and stresses associated with their chosen occupations. → follow-up study

Follow-up analysis 1

Method

1. Recode TK6_DB_ClassType5 to TK6_rec: 1=0; 2,3,5=1

Results

1. Covariate TK6_rec with OFTP (ADHD/INT/EXT) (*p*s < .05)
2. Covariate TK6_rec with EXT (*p* < .001)
3. OFTP-age15 associated with externalizing-age17 (*β*= .150, *p*< .05 → controlling for TK6_rec: *β*= 0.146, *p* = .05)

Follow-up analysis 2

Method

2. Exclude 'TK6_DB_SchoolYear<9', AND include 'TK6_rec=1'

Results

1. OFTP-age15 associated with externalizing-age17 (β= .150, p< .05 → controlling for TK6_rec: β= 0.145, p = .084, N=728)
2. OFTP-age15 associated with ADHD-age17 (β= .097, p = .071→ controlling for TK6_rec: β= 0.148, p = .021, N=723)

Discussion

1. 'When I grow up I want to have an interesting job, and I'm doing everything now to work towards that goal.'
2. 'I try hard at school to have a good job later in life."
3. "Doing well at school is important to me."

Those questions prime anxiety (negative valence)?

Future directions

1. Study 2 (in progress): Effective transdiagnostic elements of general future time perspective (e.g., future-present self-connectedness, future valence)?

2. Network analysis among the elements of future time perspective and mental health problems using 2 waves of data?

3. DSEM on elements of future self × daily emotional regulation (EMA data)?

Thanks for the Team!

Aja Murray, Department of Psychology, University of Edinburgh, UK

Denis Ribeaud, Jacobs Center for Productive Youth Development, University of Zurich, Switzer

Manuel Eisner, Institute of Criminology, University of Cambridge, UK

Jean-Louis van Gelder, Leiden University, Netherlands

Ingrid Obsuth, Clinical Psychology, University of Edinburgh, UK

Xinxin Zhu, Department of Psychology, University of Edinburgh, UK

Yi Yang

Email: s2060087@ed.ac.uk

Twitter: @audreyyiyang