

Relationship between impulsivity, sensation seeking and alcohol-related problems among adolescents: Two-year follow-up

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Introduction



- ▶ **Impulsivity**-related constructs (Cognitive, non-planning and motor impulsivity, sensation seeking, delay discounting, disinhibition...) are **the core** of several psychiatric and behavioral disorders (Alcorn et al., 2013).
- ▶ Impulsivity is defined as ...
 - “behaviors without adequate thought, the tendency to act with **less forethought** than do most individuals of equal ability and knowledge, or a predisposition toward **rapid, unplanned reactions** to internal or external stimuli **without regard to the negative consequences** of these reactions”.

International Society for Research on Impulsivity

Introduction

- ▶ Impulsivity-related constructs (Cognitive, non-planning and motor impulsivity, sensation seeking, delay discounting...) are the core or several psychiatric and behavioral disorders (Alcorn et al., 2013).
- ▶ Impulsivity is defined

“the construct of impulsivity has been extended to describe an increasingly diverse set of phenomena and processes, it has become too broad to be helpful in guiding future research”

Stahl et al., 2013

Introduction

- ▶ Lack of a grounded theory of impulsivity → several instruments and two different approaches were developed

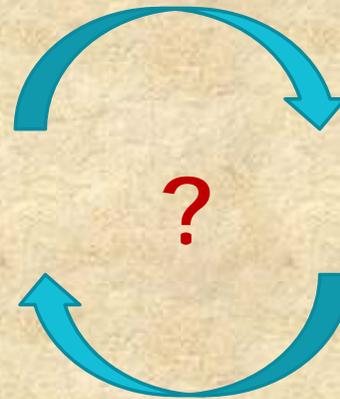
Self-reports	Behavioural tasks
BIS	Delay Discounting
UPPS	Stroop task
ImpSS	Go-No go
DII	CPT
IVE	BART
TCI	IGT
...	...

- ▶ However → Impulsivity and Sensation Seeking are key variables for risk behaviors such as substance abuse (Field, Christiansen, Cole, & Goudie, 2007; Quinn & Harden, 2013; Stautz & Cooper, 2013)

Introduction

- ▶ **Early use** of substance is a **risk factor** of substance abuse and dependence → **Adolescence** is a period of **critical changes** so...

Impulsivity/ sensation seeking



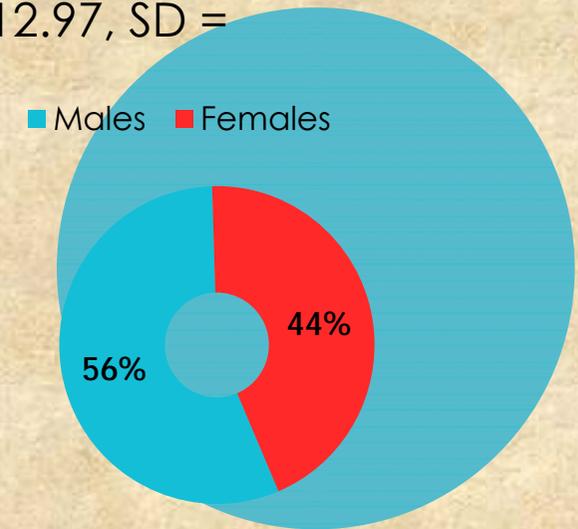
substance abuse

Introduction

- ▶ Previous researches, although very valuable, are limited by
 - ▶ **sample size** (Fernie et al., 2013; Macpherson et al., 2010)
 - ▶ only **one approach** of measurement (Fernie et al., 2013; Krank et al., 2011; Malmberg, et al., 2012)
 - ▶ exploration of onset of substance uses but **not more relevant clinical indices** (Janssen et al., 2015)
- ▶ The aim of this study is to test the influence of impulsivity, sensation seeking and alcohol abuse among adolescents over two years.

Method

- ▶ The sample consisted of **1172 adolescents** (mean age 12.97, SD = 0.53) from 16 Spanish High schools (55.90% males)
- ▶ **Longitudinal design** with three assessments
- ▶ 25.85% **attrition**



1st wave
13 y.o.



2nd wave
14 y.o.



3rd wave
15 y.o.

Method

▶ Impulsivity

▶ Behavioral measure

- ▶ **Delay Discounting (DD)** → What do you prefer, €100 now or €1,000 tomorrow? → discounting index: $\log k$

▶ Self-reported measures

- ▶ **Barratt Impulsiveness Scale (BIS-11-A)** (Martínez-Loredo et al. 2016) ($\alpha = .78$)
- ▶ **Impulsive Sensation Seeking (ImpSS)** (Fernández-Artamendi et al. 2016)
 - ▶ Impulsivity ($\alpha = .78$)
 - ▶ Sensation Seeking ($\alpha = .74$)

▶ Alcohol abuse

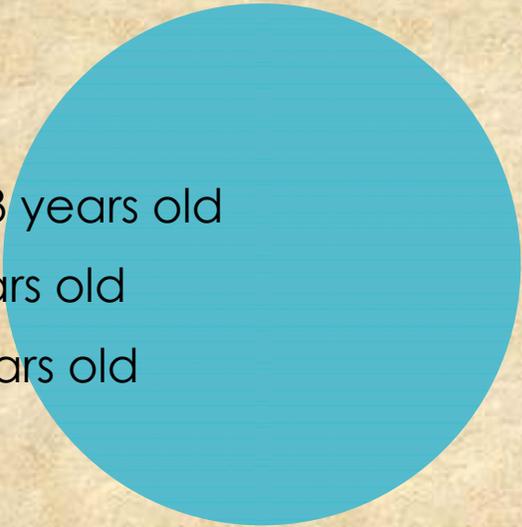
- ▶ **Rutger's Alcohol Problem Index (RAPI)** (López-Núñez et al. 2012). Cutt-off **7 points**

Method

- ▶ Development of an electronic version of self-reports (Sociodemographical data, BIS-11-A, ImpSS, RAPI)
- ▶ Development of an App with the self-reports and a version of the Delay Discounting task
- ▶ The final battery was installed in tablets to assess participants in their own classrooms



Method

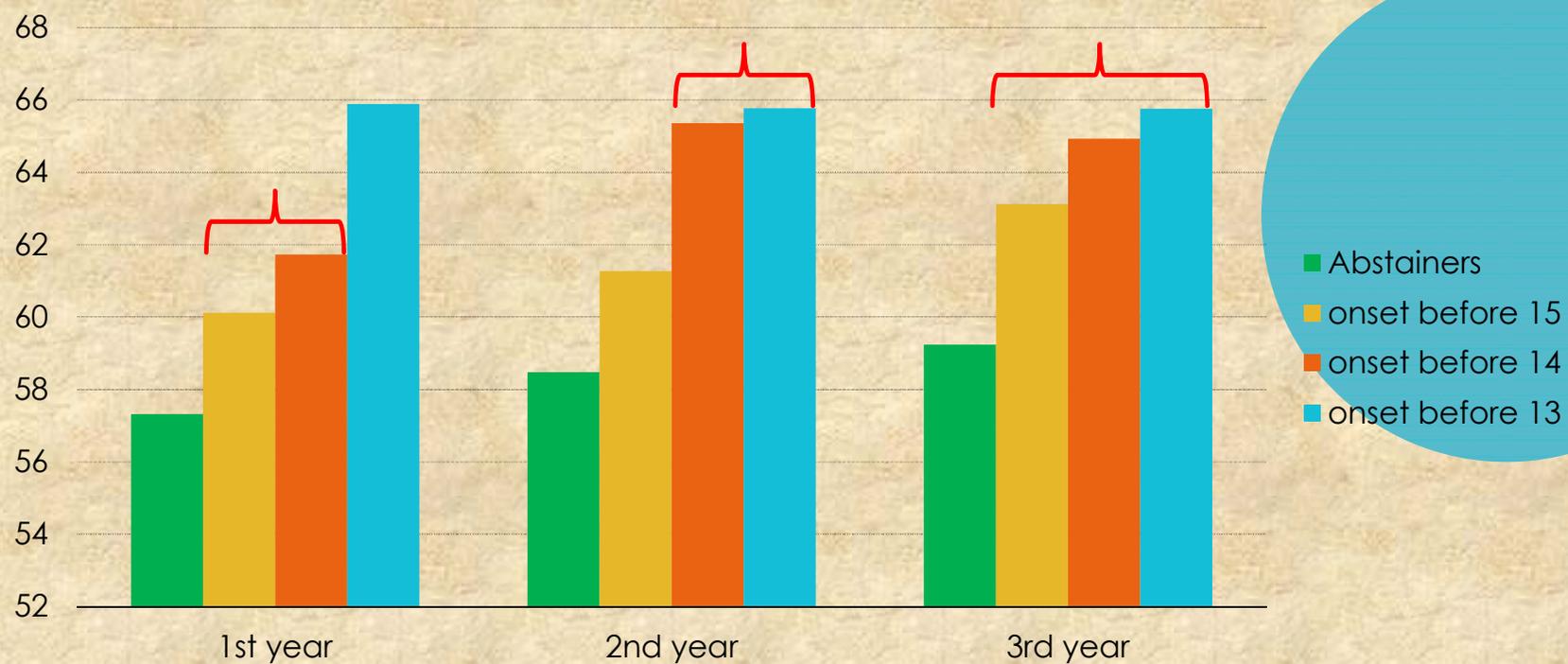


- ▶ Of the 869 participants with **three assessments**:
- ▶ 145 participants (16.69%) started drinking before the age of 13 years old
- ▶ 118 participants (13.58%) started drinking between 13 & 14 years old
- ▶ 171 participants (19.68%) started drinking between 14 & 15 years old
- ▶ 435 participants (**50.06%**) have **never drunk**

- ▶ **ANOVA** and **t-tests** analyses were performed to explore Impulsivity differences in alcohol use onset and alcohol-related problems
- ▶ **Structural Equations Modeling** was performed to assess the mutual influence of both Impulsivity and Sensation Seeking, and alcohol abuse.

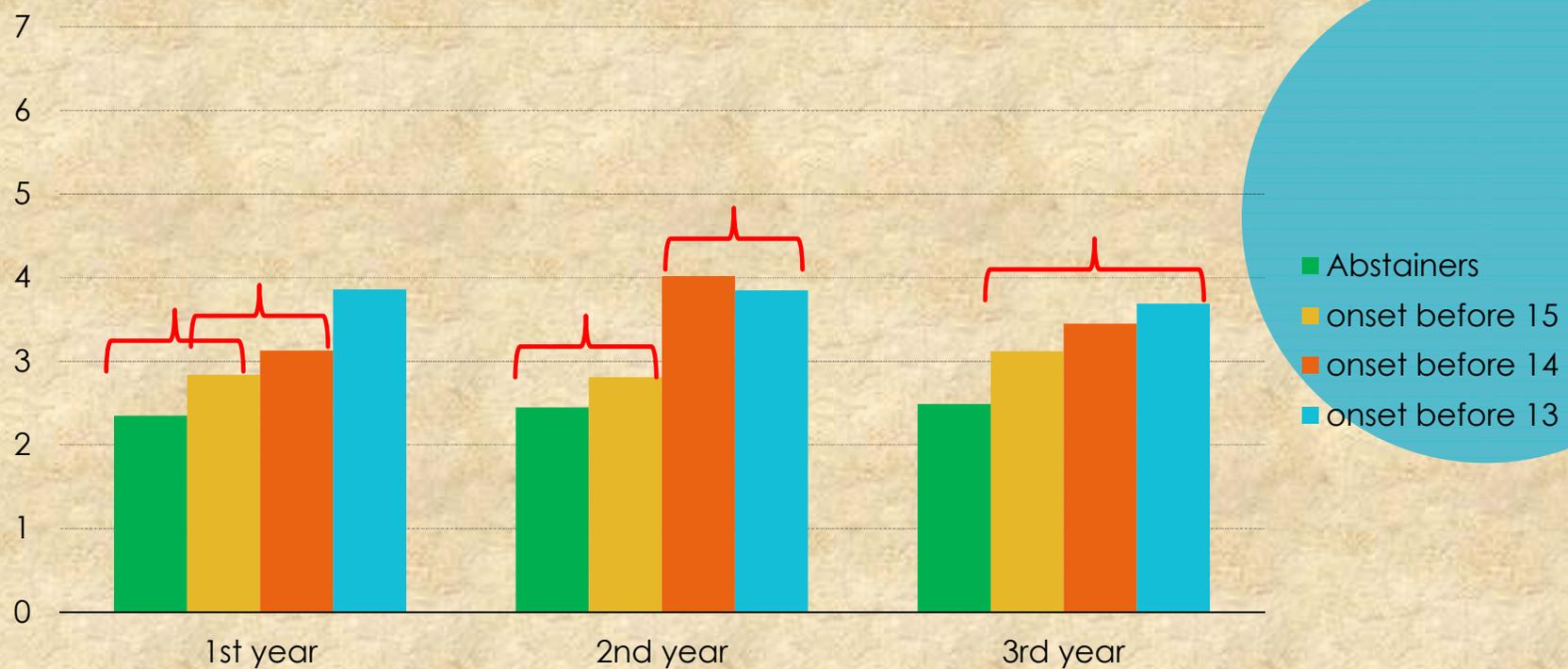
Results

BIS evolution in adolescents in relation with alcohol onset



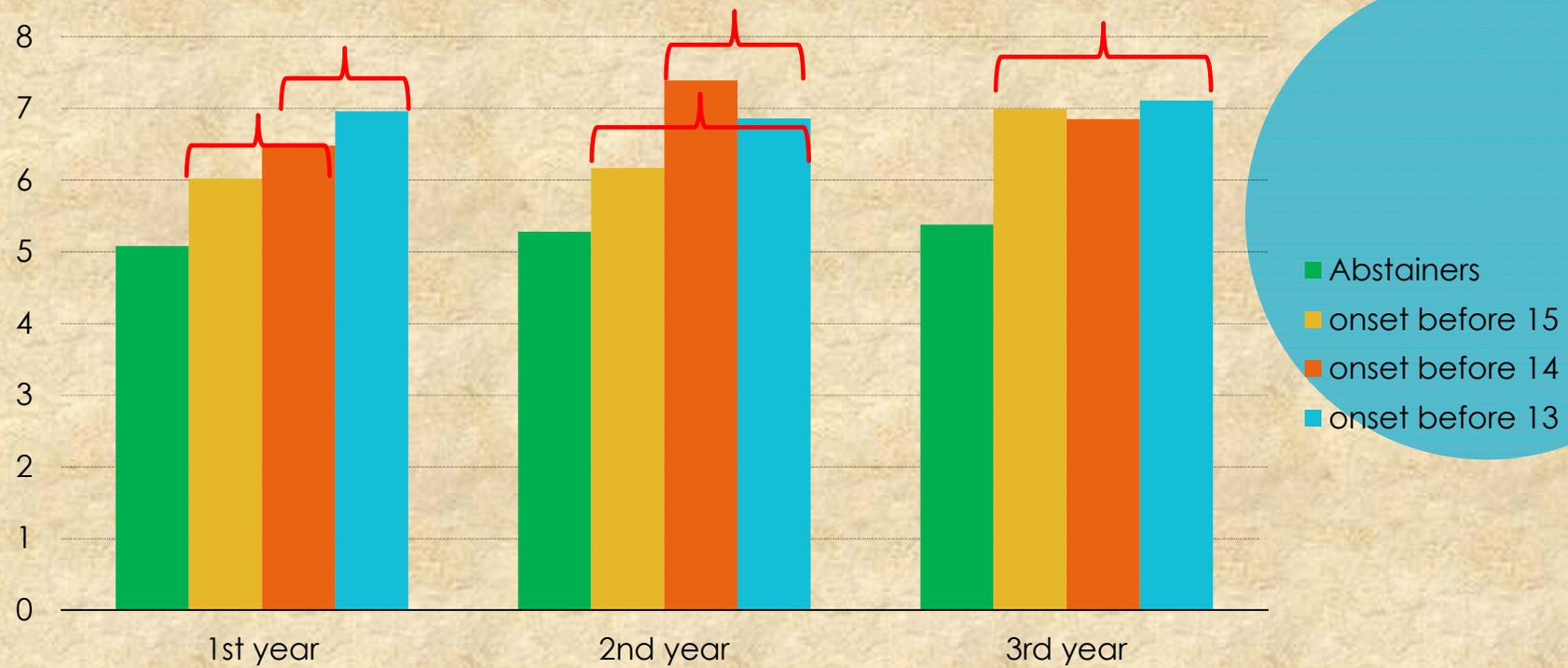
Results

Imp evolution in adolescents in relation with alcohol onset



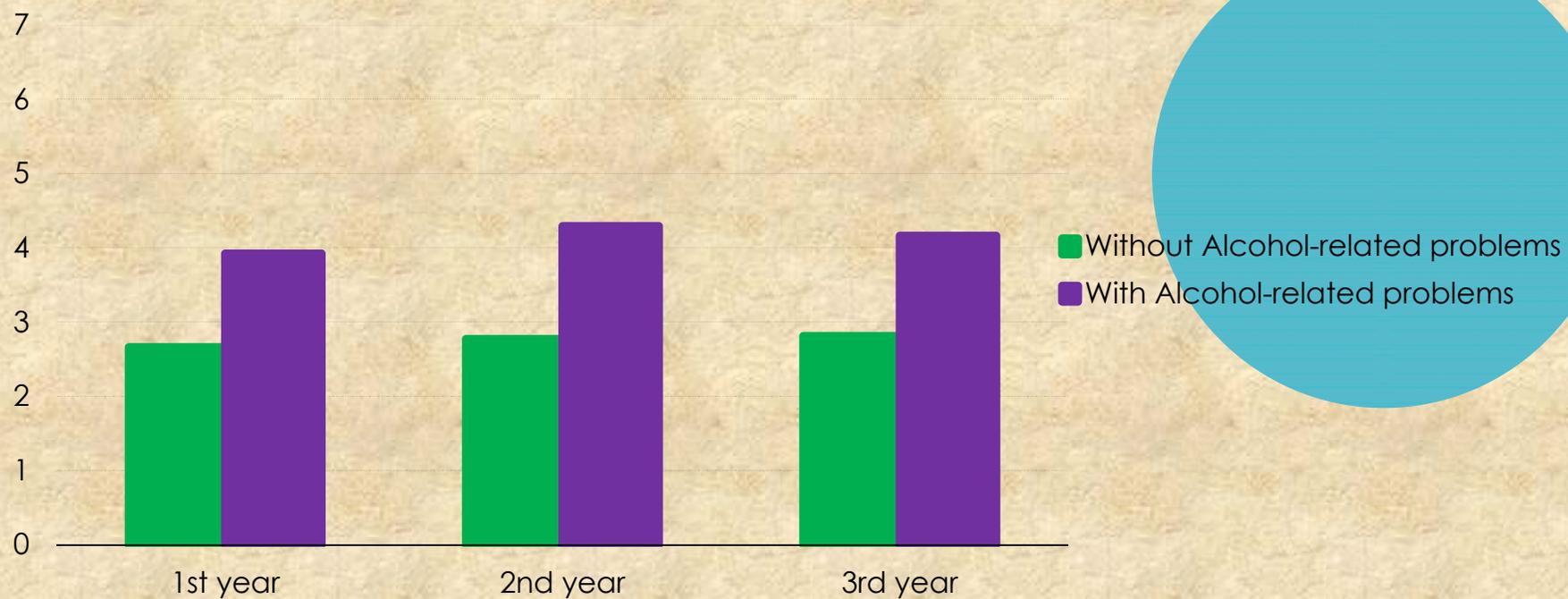
Results

SS evolution in adolescents in relation with alcohol onset

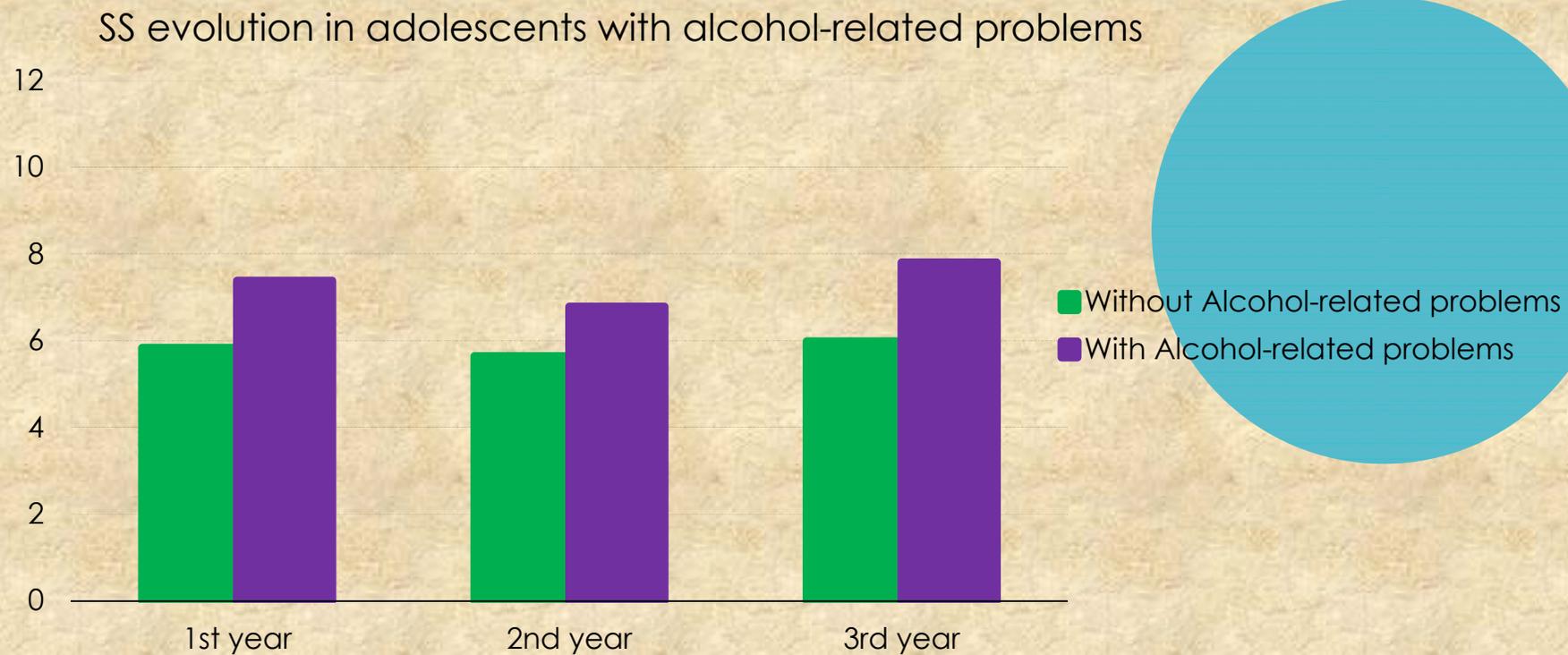


Results

Imp evolution in adolescents with alcohol-related problems



Results



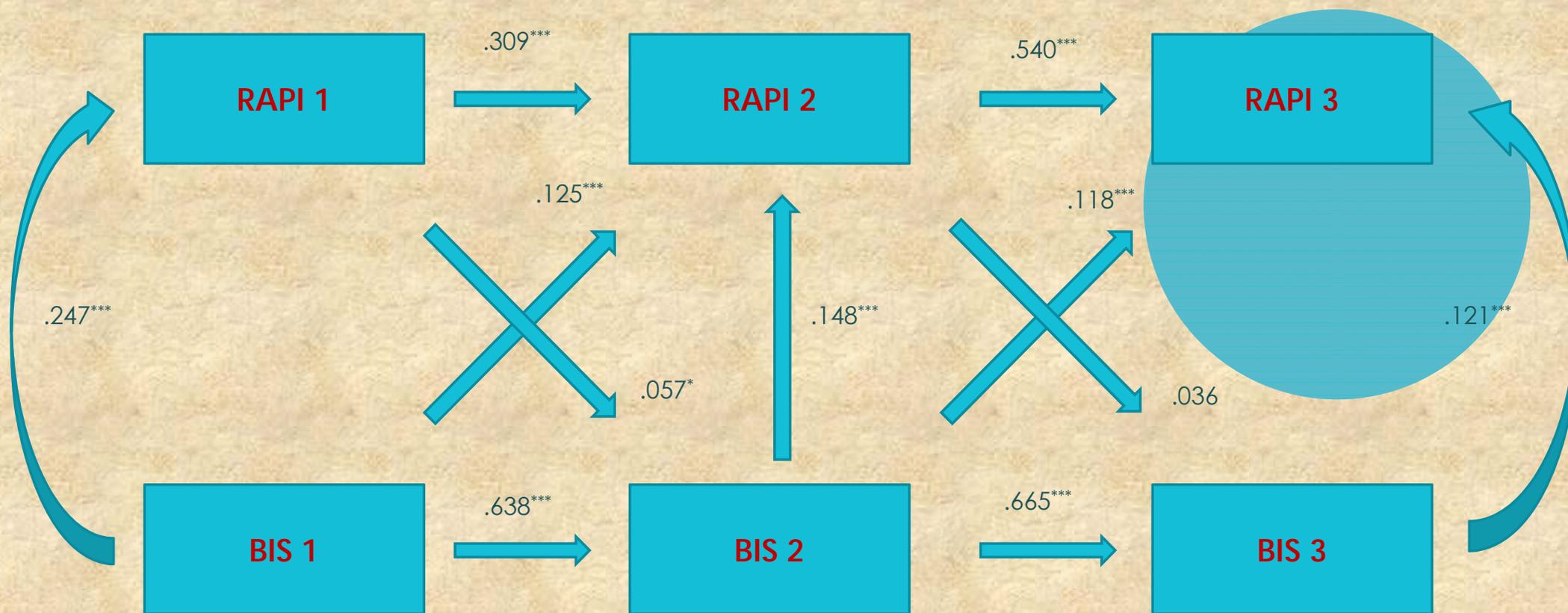
Results

Structural Equation Modeling

- ▶ The overall models fit was good for all the measures: BIS, Imp, SS and logk (CFI ≥ 0.95)
 - ▶ Cross-lagged paths from BIS, Imp and SS to RAPI were all significant ($p < .01$)
 - ▶ Cross-lagged paths in the opposite direction were all non-significant ($p > .05$)
 - ▶ None of the DD paths reach significance levels ($p > .05$)

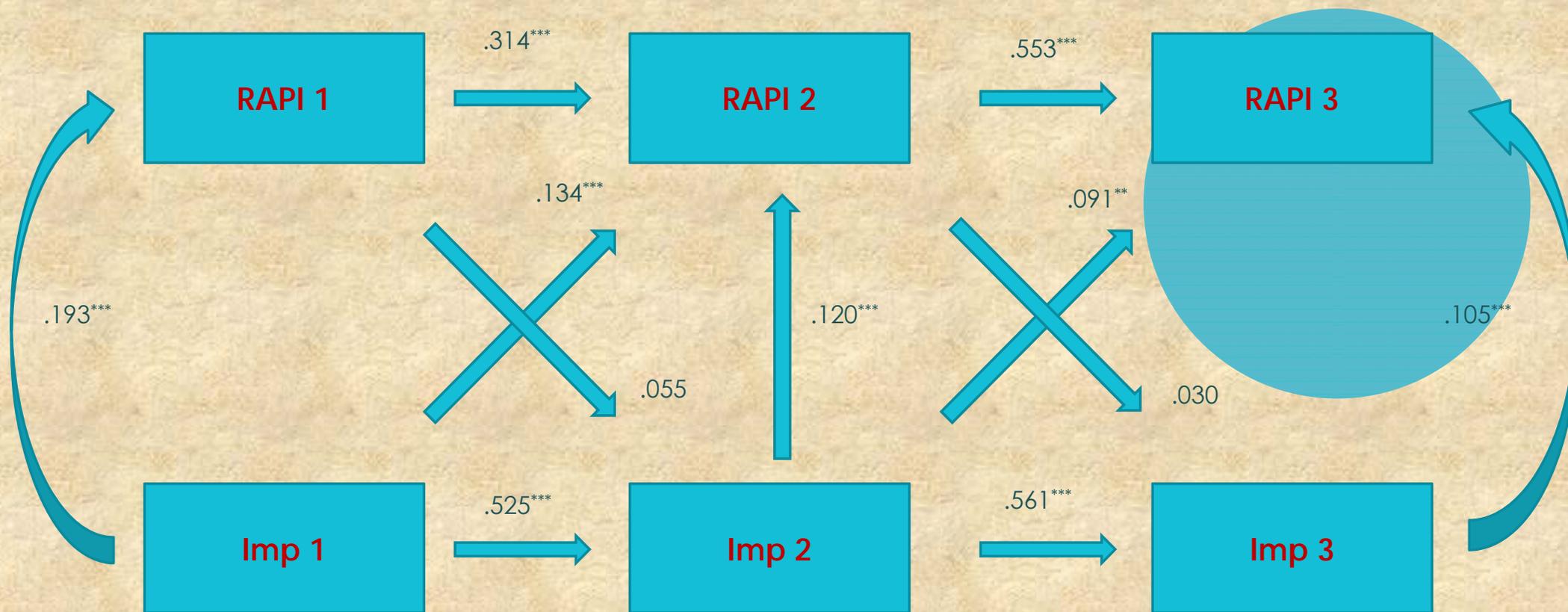
Results

CFI = .958
TLI = .844
RMSEA = .142



Results

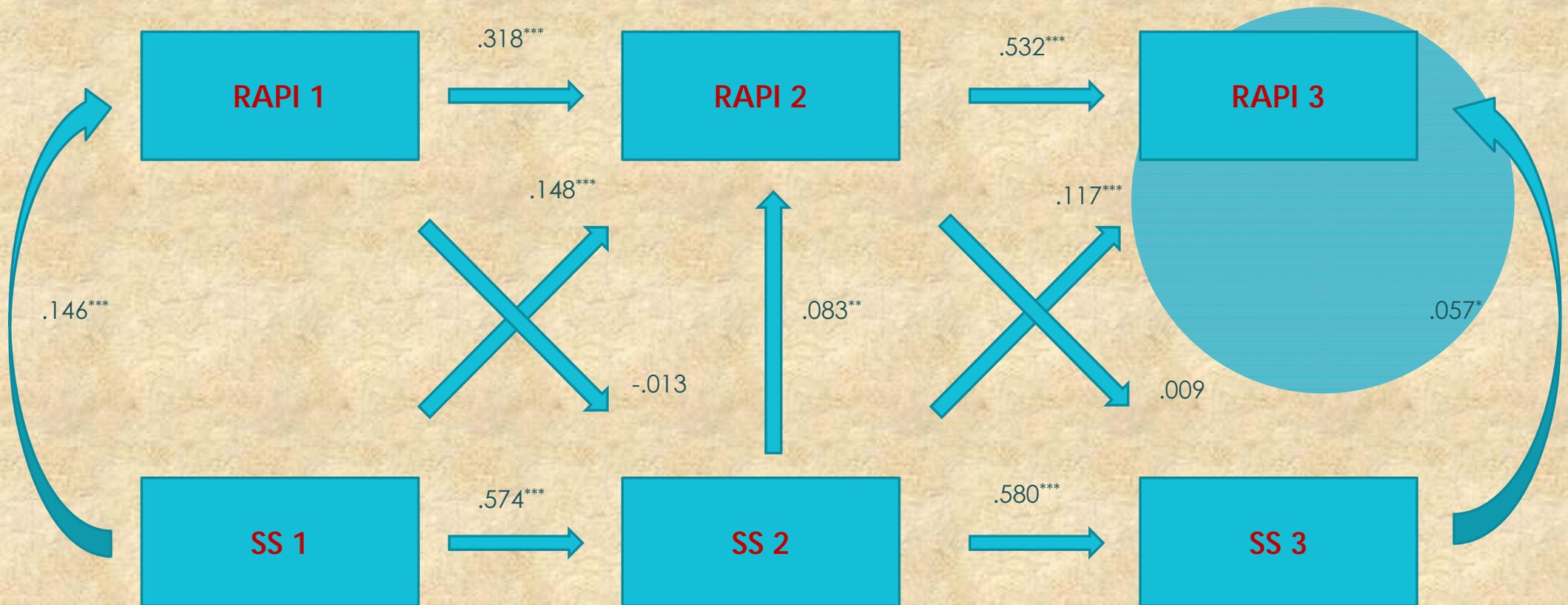
CFI = .959
TLI = .847
RMSEA = .121



* P < .05
*** P < .001

Results

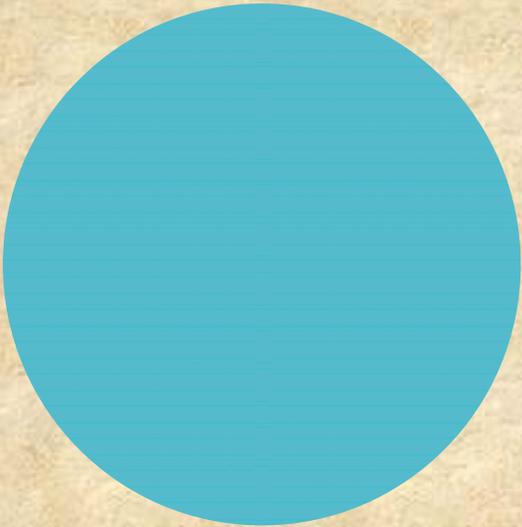
CFI = .951
TLI = .817
RMSEA = .134



* $P < .05$
*** $P < .001$

Conclusions

- ▶ Self-reported impulsivity seems to be more useful to predict alcohol-related problems than behavioral tasks.
- ▶ More importantly, the presence of alcohol abuse and related problems seems not to have a significant effect on their levels of impulsivity or sensation seeking
- ▶ These results could be useful when designing strategies for preventing drug involvement among adolescents



Thank you
vielen Dank

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Funding Ref. MSSSI-12-2013/131; MINECO-15-PSI2014-56114-P