**Assessing the impact of Substance abuse treatment (SUT) on the justice system contact prevention in Chile**

# Background

Substance use can affect health and multiple social dimensions, including criminal behaviours and the likelihood of contacting the justice system. SUT is one possible intervention to reduce the risk of committing crimes and having contact with the justice system. Outcome evaluation of SUT is relevant due it helps to improve the quality of care, enhances crime prevention, and informs policymaking on effective interventions (WHO, 2000). Consistent findings on outcomes of SUT concur that reducing substance abuse through effective treatment leads to a reduction in criminal activity (Prendergast et al. 2002; Wilson, Mitchell, and MacKenzie 2006).

However, most of the prior evidence comes from developed countries and regions (e.g., United States, Australia, and western Europe) (Obot, 2016; Klingemann, 2020), and results from the Latin American context are largely unknown. Using results from other regions, particularly from high-income countries, can be misleading because the context, populations, and specific nature of substance use disorders are different, along with the fact that such SUT are designed to the country-specific epidemiologic context (e.g., harm reduction or emphasis in detoxification, etc.) (Castro et al., 2021; Rawson et al., 2015). While the Latin-American population seems to be less affected by the use of heroin (Pacururu-Castillo, Ordoñez-Mancheno, Hernández-Cruz, Alarcón, 2019), alcohol and noninjected drug use (e.g., cocaine paste-base) are more prevalent (Hidalgo-Carmona, Santis-Barros, Rodrízuez-Tobar, Hayden-Canobra, Anselmo-Montequín, 2008; Olivari et al, 2021).

Moreover, the international research usually assesses structured intervention approaches (i.e., cognitive behavioral, multi-systemic) that are differentiated according to specific substances (i.e., cocaine, heroin); however, it may not be the case of SUT provision in other contexts, such as Chile.

Indeed, the Chilean SUT policy is an interesting case of study since it is one of the oldest and most developed policies in Latin America (Marin-Navarrete et al., 2018), even when it involves multiple intervention approaches, and it does not consider specific interventions according to each substance. This feature makes it worthy to note that most of the studies on SUT impact have been mainly restricted to randomized controlled trials or pre-post observational studies, while large-scale, longitudinal, multi-site treatment, and administrative data-based outcome studies are rare but necessary to address SUT policy.

Chile has one of the highest rates of alcohol use per capita in the Americas, with 61% prevalence in the last year in the adult population (Peña et al., 2021; SENDA, 2018). It is followed by marijuana, with a last-year prevalence of 14.5%, placing Chile over Canada, United States (14% both) and just behind Jamaica, which tops the list (15.5%) (CICAD, 2019). National studies also pointed to a high prevalence of cocaine base paste (Hidalgo-Carmona et al, 2008; Olivari et al 2021)REF].

The incompleteness of treatment is among the most widely known threats to achieving therapeutic goals, particularly at the early stages (Brorson, et al 2018). According to SENDA guidelines, treatment completion occurs when a treatment counselor reports that a patient achieved minimum accomplishments and had a planned discharge. In contrast, treatment non-completion comprised patient-initiated discharge (e.g., leaving treatment without making satisfactory progress or against professional advice) and treatments terminated by the facility (e.g., disciplinary dismissal).

The present proposal aims to examine the impact of SUT on the justice system contact prevention in Chile, in the short (3 and 6 months), middle (1 year), and long term (3 years). To do so, we used a registered-based retrospective cohort design of the population of people of 18+ years of age in publicly-funded Chilean SUT, which is being linked to the National prosecutor’s data of all criminal causes registered for this population in the period 2010-2019.

This study will add evidence to the body of literature on the effects of SUD treatments. These results will have a public health impact by informing about the benefits and potential pitfalls of the current SUD treatment system.

# Research questions, goals, and hypothesis

* **Research question:** What is the impact of baseline SUT outcome on the justice system contact prevention in Chile, in the short (3 and 6 months), middle (1 year), and long term (3 years)?
* **Goals:**

1. Describing the contact with the justice system of the Chilean population according to treatment completion of treatments at baseline

2. Estimating the effect of treatment completion on the probability of contact with the justice system, according to (i) different treatment completion stages (i.e., early dropout, therapeutic discharge) and (ii) short (3 and 6 months), middle (1 year), and long term (3 years).

* **Hypothesis**

1. Users who achieve treatment completion are less in contact with the justice system than users who do not complete treatment, although this effect may decrease as observation time passes (3 and 6 months, 1 and 3 years).

# Analytic strategy

mostrar trabajo avanzado

**ags → enfocarse más ahí**

We are creating a population-based record-linkage open cohort design. We are linking electronic records of individuals in publicly funded SUD treatments with Prosecutor’s Office data at the national level, using a deterministic linkage process (through an encrypted mask of the Chilean Unique National Role). The main exposure variables will be the treatment outcomes (administrative discharge, early and late dropouts, therapeutic discharge). Our first analytic approach will be multi-state survival models, which allow modelling intermediate health events, to estimate transition probabilities across treatment outcomes to contacts with the justice system, as well as the covariate effects for each specific transition.

# Project milestones

# Research team

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-DECIR PUBLICACIONES AREA DE TRABAJO DE CADA INTEGRANTE. Particularmente mencionar el paper de evidencia (conjunto con andres y alvaro)

-enfatizar que andres conoce los datos

# Timeline

Hacer mención al trabajo avanzado, lo disponible en el markdown. Trabajo adelantado. Evidencia que ayuda a justificar la factibilidad del proyecto.

Diagrama

Descripción generada automáticamente

[Chilean prosecutor’s office Data merge (fondecytacc.github.io)](https://fondecytacc.github.io/SUD_health_Chile.github.io/Fiscalia_merge)

[Chilean prosecutor’s office Data merge, step 2 (fondecytacc.github.io)](https://fondecytacc.github.io/SUD_health_Chile.github.io/Fiscalia_merge2)

Diagrama

Descripción generada automáticamente

Note. Rel.= Relationships or the combination of a victim (Vic), an offender (Imp), a judicial cause (RUC).

# Budget

**PARTES DESCARTADAS (USO INTERNO MARIEL, NO LEER)**

Although a number of studies have examined the impact of treatment on outcomes for heroin dependence, these have been restricted largely to randomized controlled trials or pre–post observational studies [4]. Large-scale, naturalistic prospective longitudinal, multi-site treatment outcome studies of heroin dependence are rare. These studies allow for the examination of the impact of treatment over time, as it is delivered in the real world.

\*\*\*\*\*PUBLIC POLICY POINT: Treatment evaluation helps to improve quality of care and save money and resources for services that are effective (WHO, 2000). The ultimate goal is to gather credible evidence on programme implementation, treatment results, and cost-efficiency that will help in the decision making process to improve quality of care. Other reasons for treatment evaluation include the following (DHHS, 2005)

o not have this specialisation, as all of them are aimed at users who enter due to the use of different substances, and in addition, each implementer in our country is free to implement a mixture of intervention approaches. This should be taken into account as a limitation that affects the comparability of international evidence with the national reality.

Research on the drug-crime link has been extensive, showing a clear association between substance abuse and offending (Bennett, Holloway & Farrington 2008; Hammersley 2011; Stevens, Trace, and Bewley-Taylor 2005). However, there is no consensus about its causality. It has been variously argued that drug use causes crime, that crime causes drug use, that crime and drug use are reciprocally related, and finally, that there is not a single connection, but rather, multiple drug-crime associations that vary across time and situational contexts (Glen, 2018). Beyond these questions, **the drug-crime fact points to the need to evaluate treatment outcomes on criminality**.

While the primary aim of SUT is to decrease substance use or reach abstinence, other treatment outcomes may have important implications for individuals' short- and long-term functioning (Skogens & von Greiff, 2020), such as criminal behavior (Luchansky et al., 2006).

Criminal behavior is often linked to substance use (Guimar˜ aes et al., 2017;Gustavson et al., 2007 ; Ståhlberg et al., 2017), particularly among individuals who develop substance use problems at an early age (Gustavson et al., 2007; Ståhlberg et al., 2017), and adolescents (Pianca et al., 2016) and adults (Brennan et al., 2000; Sariaslan et al., 2020) with elevated psychiatric symptoms or disorders. Decreasing illegal activities among youth may have important benefits given that a criminal record has adverse effects on one's life opportunities (Lageson, 2016).

\*\*\*\*\*\*\*\*\*INTRO: An increasing number of adolescents and emerging adults are entering treatment for drug use disorders in high-income countries. This fact points not only to a need to evaluate treatment outcomes related to drug use reduction, but also to evaluate other indicators of treatment success. The aim of this study was to examine treatment effects on predicting readmission to drug use treatment and being convicted for a criminal offence among youth. A second aim was to examine whether a psychiatric history had an impact on these outcomes.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*INTRODUCTION: Treatment for substance use has been shown to be effective in reducing the criminal behaviour of people with substance use problems (Gerstein & Johnson, 2000; Hubbard et al., 2003; Johannessen et al., 2019; Prendergast et al., 2002)

Although consent to take part in drug treatment is not always an alternative to prison (in Chilean drug treatment courts-TTD, for example), this belief or ignorance means that it is precisely the fear of imprisonment that motivates a high number of subjects to accept participation in drug treatment courts.