General discussion
Chapter 7

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The current thesis aimed to investigate family risk and protective factors for Chilean adolescent's substance use (SU) and substance use disorder (SUD).

In the present chapter, we will summarize the main findings, address methodological considerations, and emphasize the practical and policy implications of the present research.

In line with international research showing that drug treatment for justice-involved people need to be improved due to the low level of successful outcomes achieved with the current treatments, as in other countries, Chilean youth-based treatments for this group with SUD also need to find ways to obtain better results.

One possibility to enhance these programmes is through integrating interventions directed at the family. Since it is unlikely that these interventions are going to be changed into a family-based design, but they may be willing to integrate specific aspects to intervene with families, we need to identify specific family variables that may be explored to achieve treatment outcomes improvements in Justice-Involved Youth (JIY).

Therefore, as a first step, we examined whether family risk and protective factors for general adolescent cannabis use in the literature were applicable to the Chilean adolescent population (chapters 2 and 3). Then, we identified potential parental variables related to adolescents with substance use disorder in a drug treatment context. Specifically, we examined whether positive and negative parenting, monitoring and drug use were associated to JIY's self-control, positive/negative affect and motivation to be in treatment (chapter 4). As a complement, we also explored parent-al figures' as well as professionals' perceptions on the subject to have a broader view about possible barriers and needs to implement interventions directed at parent-al figures (chapters 5 and 6).

1. What were the research findings?

a. Findings in relation to international literature

After finding that most literature about risk and protective factors for adolescent substance use has been done in high-income countries, we conducted two studies to determine whether international outcomes were applicable to Chilean adolescent

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The current thesis aimed to investigate family risk and protective factors for Chilean adolescents' substance use (SU) and substance use disorder (SUD). In the present chapter, we will summarize the main findings, address methodological considerations, and emphasize the practical and policy implications of the present research. In line with international research showing that drug treatment for justice-involved people need to be improved due to the low level of successful outcomes achieved with the current treatments.\(^1\) As in other countries Chilean youth-based treatments for this group with SUD also need to find ways to obtain better results. One possibility to enhance these programmes is through integrating interventions directed at the family. Since it is unlikely that these interventions are going to be changed into a family-based design, but they may be willing to integrate specific aspects to intervene with families, we need to identify specific family variables that may be explored to achieve treatment outcomes improvements in Justice-Involved Youth (JIY). Therefore, as a first step, we examined whether family risk and protective factors for general adolescent cannabis use in the literature were applicable to the Chilean adolescent population (chapters 2 and 3). Then, we identified potential parental variables related to adolescents with substance use disorder in a drug treatment context. Specifically, we examined whether positive and negative parenting, monitoring and drug use were associated to JIY’s self-control, positive/negative affect and motivation to be in treatment (chapter 4). As a complement, we also explored parental figures’ as well as professionals' perceptions on the subject to have a broader view about possible barriers and needs to implement interventions directed at parental figures (chapters 5 and 6).

1. What were the research findings?

a. Findings in relation to international literature

After finding that most literature about risk and protective factors for adolescent substance use has been done in high-income countries,\(^2\)\(^-\)\(^4\) we conducted two studies to determine whether international outcomes were applicable to Chilean adolescent
populations. Using large cross-sectional datasets from two Chilean national studies (4,413 adolescents from the general population and 43,060 students from the school survey), we found similarities for risk and protective factors. On the one hand, results about risk factors showed that adolescents who had a family member or a close friend who used cannabis were more likely to use marijuana (chapter 2). On the other hand, outcomes related to protective factors indicated that parental monitoring of adolescents’ whereabouts and strong parental opposition to adolescent cannabis use, decreased the likelihood of adolescent cannabis use in general, as well as problematic use (chapter 3). Though not a test of causality, these associations are in line with international literature about adolescent SU use and SUD. Thus, comparative contexts of adolescents -especially the family- may have either an important negative or positive role when risks or favourable factors are present. Even though more research with Chilean adolescents is needed, we expect these similarities to imply that Chilean adolescent populations' findings may apply to high-income countries. Similarly, we also expect that international findings regarding adolescents with SU and SUD can be applied in Chile to improve care.

b. Findings in addition to the existing literature

The inclusion of two outcome variables, namely, cannabis use and cannabis dependence, allowed us to compare the associations of SU by the family and friends in relation with the initiation and the development of dependence in adolescents. Findings showed that adolescents were more prone to develop dependence only when a family member (and not peers) used cannabis (chapter 2). This finding highlights the importance of the family when developing a SUD through modelling behaviours.5-7 We also studied past parental drug use (chapter 3) in addition to what international studies have investigated, namely, current parental SU and past SUD.6,8 We explored whether past parental drug use may be a risk factor for adolescent SU and SUD. Past parental drug use showed to be associated with an increase in the likelihood of adolescent cannabis use, but not its problematic use. These outcomes may indicate that parental figures' distinct types of drug use negatively influence different aspects of adolescent SU. For instance, past and current parental use may instigate the initiation of SU in adolescents, but only current use seems to prompt the development of a cannabis use disorder. Thus, as parental figures act as role models,8,9 adolescents may feel allowed to use cannabis when their parental figures use currently or have used this substance in their youth. While parental current use may act as a source of the substance for adolescents facilitating the development of
SUD. Moreover, it may be more difficult for adolescents to stop using cannabis or to change into a less intense and more moderate pattern of use when someone else at home uses cannabis. Alongside, results showed that parental figures might protect their children against cannabis use by monitoring and having a strong negative attitude against drug use, even if they have used drugs in their own youth. These outcomes are encouraging because it may be possible to design interventions with parental figures to prevent SU in their children even if these parental figures have used substances in the past.

c. Chilean findings with justice-involved youth (JIY) in drug treatment

Once we had some insights about parental risk and protective factors within the general adolescent population, we focused on JIY in drug treatment. Research assessing family-based treatments has shown that these designs have better results than interventions solely focussing on the adolescent. Given these indications we choose to have a further look into the role of parental factors in the behaviour of youth. Since this might shed light on how such a family-based approach might possibly work. Our results showed that a negative parenting style was associated with negative outcomes in youth' variables, such as low self-control and negative affect. Monitoring was related to positive affect (chapter 4). Alongside, our outcomes showed that though positive and negative parenting styles were correlated with youth’s variables, only negative parenting style remained associated with youth’s variables in multivariate analyses. These findings may imply that it would be more useful to reduce the hard parenting practices than to develop positive parenting practices in parental figures to help JIY. The harsh practices may lead to a negative mood and low self-control, probably because these harsh practices instigate a negative self-image in JIY and they may not believe in their own capabilities. Substance use may be used to cope with these negative feelings and the low self-control may not help stop or diminish the use.

We also wanted to identify whether parental figures are willing to get involved in their JIY’s treatment. Likewise, we wanted to know whether professionals serving JIY would be willing to conduct interventions directed at JIY’s parental figures. We learned that both parental figures (chapter 5) and professionals (chapter 6) had negative perceptions, parental figures about JIY and professionals about JIY's parental figures. Negative perceptions may induce negative feelings, such as hopelessness, powerlessness and frustration. In turn, negative feelings may
undermine the perception of the personal capabilities to help another person, leading to being less effective in doing so and increasing the risk of burnout.

Moreover, both groups felt overwhelmed. That is, families felt overwhelmed due to the JIY’s behaviours and its consequences for family members, and professionals because of the several difficulties they see about parental figures’ attitudes and their contexts. Nevertheless, beyond these difficulties, parental figures and professionals were willing to participate in interventions or to conduct interventions targeted to parental figures, respectively.

2. What considerations do these findings have?

a. Research design

Our research design has some strengths and limitations that we would like to emphasize. As an important strength, we highlight the diversity of methods used and participants reached, which helped us to draw a better idea about SU and SUD in adolescents and the young Chilean population. Firstly, we combined quantitative and qualitative data. We used questionnaires to understand how parental variables were related to psychological variables in SU, SUD and JIY. As a complement, we also applied in-depth interviews to understand the context where those parental variables may be intervened and helping to find strategies to address the variables found by the quantitative methods. In the context of youth-based interventions, it was a central issue to identify parental variables that could be intervened upon to help enhance drug treatment outcomes in young people. It was also important to identify possible barriers when implementing specific actions targeting parental figures in an intervention where parental figures are not defined as the (main) patient. Therefore, it was essential to understand parental figures’ experiences of caring for a child with SUD, and how professionals perceive the possibility of delivering interventions directed at parental figures. These interviews helped us to identify their willingness to participate and to find key elements to consider in a future design. Secondly, we integrated different perspectives in our study. Regarding adults' perspectives, we already mentioned that we incorporated parental figures and professionals. Furthermore, we included adolescents from the general population and the school population, and young people involved in the justice system. We think that making use of both types of approaches (quantitative and qualitative) and including the most central figures has a lot of added value in
describing and partially explaining the complex processes in substance abuse and substance use disorder.

The main limitation we would like to mention about the research design is related to the data’s cross-sectional nature, which does not allow testing causality between related variables. Chapters 2 and 3 were based on the national surveys about drug use in the Chilean population. As all surveys conducted in this research area (also in other countries), the main aim is to monitor substance use in the population (i.e., the general population from 12 to 64 years old and the school population from grade 8 to 12). Thus, the design of this type of surveys is cross-sectional. Chapters 4, 5 and 6 were based on a clinical population and its context. This clinical population has some complexities that we will address in the following section. Due to these complexities, it was impossible to design a longitudinal study for the present thesis. Thus, we selected a cross-sectional design for the quantitative as well as the qualitative studies. Similarly, variables used by the national surveys were frequently single-item measures which may be a potential limitation since multi-item measures provide more detailed information. These pre-defined variables also directed the type of research questions that we could address in the present thesis (chapters 2 and 3). Measures will be addressed more in depth in the following section c, concepts about drug use and family factors.

b. Participants

Participants in the present thesis included respondents from the general population using very large databases and a clinical sample with a relatively small sample. As mentioned previously, chapters 2 and 3 were based on samples from two national studies that are collected every two years. The strengths of these databases are the sample size (4,413 adolescents and 43,060 students) and the strong methodological procedures to design and select the sample, which has national representation, including all country regions. Moreover, since the population is familiar with these surveys, response rates are usually high.\textsuperscript{17,18} Chapter 2 was based on the national survey of the general population, which means that people from 12 to 64 years old were interviewed at their homes. Thus, we selected information of adolescents from 12 to 18 years old. Chapter 3 was based on the national survey with the school population from grades 8 to 12. Although the sample of the school population is smaller, the advantage is that home interviews may also reach adolescents not attending school. The data help us to test whether findings from high-income countries would also apply to Chile, and they did. In other words, research findings
in either type of context seems to be interchangeable. Hence, it underlines that individual, interpersonal variables and variables linked directly to the use of drugs are dominant in explaining the process and that perhaps socio-economic and cultural issues are less dominant.

Chapters 4, 5 and 6 were based on a clinical sample of Justice-Involved Youth (JIY) attending drug treatment, their parental figures, and the professionals who provide treatment. We conducted the research only in the capital city of Santiago, as we had to arrange approvals with seven ethic committees. Eighteen out of twenty-four treatment teams were able and willing to participate in the research, but owing to a complex profile it was difficult to recruit JIY into research. Namely, many adolescents and their families were not willing to attend to drug treatment, because they were sent to drug treatment by the justice system. For instance, professionals informed us that some adolescents give fake phone numbers and addresses. Another group does not answer professionals’ calls or they do make appointments but do not attend. Thus, the JIY possible to reach was rather small. Moreover, JIY attending treatment do not always attend regularly or stop attending, making it difficult to plan a longitudinal research design. Because JIY have SUD and related problems, treatment teams advised not to give incentives for joining research that could be sold or changed for drugs. Thus, we only offered something to eat and drink while answering the questionnaire. Parental figures were even more difficult to recruit. Some parental figures are not supporting their justice-involved children anymore, because of the bad experiences they have had due to the behaviours of their children. Another group of parental figures had problems to attend due to incompatible timetables. Consequently, it was not feasible to plan paired questionnaires from parental figures and JIY. Nevertheless, conducting in-depth interviews to understand how parental figures experienced taking care of a child with SUD seemed the most appropriate strategy at this stage of the research. We also agreed with treatment teams to only offer parental figures something to eat and drink during the interview. By and large, we think that give the very difficult circumstances to do this type of research, we were successful to include the number of participants needed. In addition, we believe that being able to get them in the study adds to the understanding of what happens in these families struggling with the drug problems.

c. Concepts about drug use and family factors

One of the most challenging decisions at the beginning of the present thesis project was to decide about concepts to use in our research. On the one hand, the first
chapters were based on existing data from both national surveys; thus, we had to use pre-defined variables. On the other hand, the literature on risk and protective factors for Substance Use (SU) and Substance Use Disorder (SUD) in adolescents for comparison is broad; we found little agreement about how to measure variables in the existing literature.

For instance, substance use -as a general concept or related to a specific drug- has been investigated as a dichotomous variable (yes/no) or a continuous variable (frequency) with different timeframes: last month use or month prevalence (during the last 30 days), last year or year prevalence (during the last 12 months), and lifetime use or lifetime prevalence.\textsuperscript{3,4,19,20} Similarly, there are different measurements for substance abuse, harmful use, dependence, and substance use disorder, according to which mental health diagnosis manual is being followed, namely, the Diagnostic and Statistical Manual of Mental Disorders (DSM) or the International Statistical Classification of Diseases and Related Health Problems (ICD) and its corresponding versions.\textsuperscript{21--23} Nevertheless, similar findings have been reported with different concepts. Because chapters 2 and 3 included SU and SUD, we selected year prevalence since measurements about SUD -abuse, harmful use, dependence- are taken when an individual answers positively to year prevalence.\textsuperscript{22} Concerning chapter 4, all JIY were using different substances, and we therefore assessed the number of substances they were currently using.

When comparing our findings to the existing literature, we took into account the similarity of the measures. We acknowledge that there is a trade-off between large samples and in-depth measurements in large-scale studies, as well as a paucity of parental variables included in the school population survey. For instance, it would be interesting to have other parental variables related to SU, such as communication or parenting style. Accordingly, we included measures of positive as well as negative parenting style and a full monitoring scale in chapter 4.

Furthermore, the concept of family may be different in Chile than in countries where most research about risk and protective factors for SU in adolescence has been conducted. In Chile, the traditional structure (father-mother-children) is one of several types of family structures.\textsuperscript{26--28} Nevertheless, it seems that in the case of the field of SU, the role that people may fulfil as a family member may be more important than the blood tie itself (chapter 1). Therefore, we used the concept of parental figures in chapters 4, 5 and 6 rather than parents. This change allowed us to include all figures that fulfil the role of a mother or a father within each participant family.
Chapter 7

3. What implications do these findings have?

a. General implications

The present thesis was the first step to research family factors in a drug treatment context for Justice-Involved Youth (JIY) in Chile. By doing so, we contribute to fill some gaps, such as (1) identifying whether findings of risk and protective factors for SU and SUD in adolescents reported in high-income countries apply to middle-income countries and (2) exploring how to integrate parental figures in drug treatment for JIY that usually do not integrate interventions targeting JIY's family. Moreover, the literature has shown that there is a general need for improving treatment for SUD among young offenders. Therefore, though explorative, our findings may have implications for different stakeholders in Chile.

Governmental institutions in charge of public policies related to drug prevention and drug treatment may be cognizant of the key position that parents -or adults- fulfilling that role- play when developing successful programs targeting adolescents and young adults. Parental figures are a role model and support their children’s process of growing up. Thus, governmental institutions might consider including parental figures in all programs for prevention and treatment, as a complementary target population with specific interventions directed at them.

Policymakers designing drug prevention programs may use the present findings to identify specific parental factors incorporated in programs or interventions targeting parents. Likewise, they may also use data from the national studies to monitor family factors in adolescent drug use and feed future policies by including brief multi-item scales. For instance, those related to current drug use, monitoring and parenting style.

Because drug treatment programs are centred on youth, policymakers may use outcomes from the present thesis to design specific research-based guidelines to target intervention to parental figures caring for youth in rehabilitation. Guidelines seem crucial since professionals felt they do whatever they can because parents and parental figures are not identified as the main target population by national guidelines for JIY's drug treatment. Based on our research findings and the literature, we suggested in chapter 6 some elements that might be included in guidelines:

1. Provision of a clear definition of the concept of 'family' and clarification on whether the family must be included within specific interventions
2. Clear aims and interventions to be implemented with families
3. Strategies for promoting family adherence to the programs

4. Specific interventions for addressing transgenerational behavioural patterns

Drug treatment policymakers may also have some considerations about the implementation of guidelines. The literature has shown that passive methods of disseminating and implementing guidelines rarely lead to changes in professional behaviour. Our research found that professionals were willing to implement interventions with parental figures, but they have negative perceptions about these families that may negatively influence their practices. This situation means that professionals need long-term training programs and permanent systems for clinical support, self-care, and burnout prevention. Therefore, policymakers may also consider designing and implementing these elements alongside guidelines.

Health and social professionals may also benefit from the outcomes of the present research. Professionals working in prevention programs targeting adolescents may integrate interventions addressing parental figures to discuss family drug use, monitoring, and attitudes towards adolescent cannabis use and how they communicate with their children. Likewise, professionals working in treatment programs targeting adolescents and young adults may incorporate specific activities directed at parental figures to engage both parental genders. According to the parental figures' stories, professionals may acknowledge parental figures' strength to engage them in interventions. Our findings showed that parental figures attending their child’s treatment are willing to help but have negative perceptions about the child that may be a negative influence on what they do and say to the child with SUD. Therefore, professionals may embrace parental figures' concerns, personal needs, and negative feelings since they are linked to how parental figures take care of the child in drug treatment. Moreover, professionals may identify and target specific parental abilities and strategies to enhance how parental figures manage their own emotions and how they relate and communicate with their children.

b. Future research

Our research has completed the first steps to identify whether findings of risk and protective family factors for SU and SUD may apply to the Chilean population, and whether it may be worthwhile to integrate specific interventions addressing parental figures in drug treatment for JIY when having a youth-centred design. Because there is a need of improving drug treatment for people involved with the justice system, future research should continue investigating this path through applied research. We have found that parental monitoring and negative parenting styles may be possible
variables to address in a drug treatment context to improve JIY’s treatment outcomes. However, it is needed to study the associations between (1) self-control, negative affect, drug use, and (2) positive affect, internal motivation, and adherence. We have suggested in chapter 4 to conduct an intervention study involving parental figures in their children’s drug treatment to research these associations further. Moreover, it is essential to safeguard maternal and paternal figures’ participation since there are gender differences that are critical to study.

In the process of conducting this study, we found other research questions. For instance, how to engage and maintain parental figures involved in their JIY’s treatment and interventions targeting them. According to the professionals’ reports, this is a key question since professionals have observed that when parental figures are involved and support their child, JIY’s treatment has much better results. Chapter 5 opened some lines to explore: (1) identifying ways of upbringing, caring, and managing a JIY in rehabilitation, alongside finding more effective strategies to keep the child safe; and (2) how to address the parental figures' negative feelings about caring for a child with substance use disorder and the related physical or mental health problems. It seems worthwhile to use the experience of treatment teams as a first step to answer these questions. Although current national guidelines do not integrate parental figures -or family- to address specific interventions, some treatment teams already implement some actions directed at parental figures. Therefore, we consider it pertinent to systematize these practices, distinguishing between good practices and not worthy practices.

Finally, just as important as designing guidelines based on scientific evidence is assessing how guidelines are implemented. The literature has identified several barriers for professionals adopting and following guidelines. Therefore, it is essential to conduct an implementation evaluation to identify and deal with obstacles at early stages before conducting an outcome evaluation.

4. General conclusion

The present thesis was dedicated to exploring whether including parental figures may benefit Justice-Involved Youth in drug treatment to enhance treatment outcomes in a youth-based treatment design context. Following the Risk and Protective Factors Model for Substance Use and Substance Use Disorder, our findings showed to be similar to those obtained by research conducted in high-income countries. Therefore, we expect that international results may be applied in the
Chilean population and vice versa. Regarding preventative interventions targeting adolescents, it may be of importance to always include parental figures with specific sessions directed at them to reinforce what adolescents are learning about drug use prevention. Concerning drug treatment interventions, the parental figures' involvement in youth-centred drug treatment seems to be a good path to continue exploring.

Parenting style and parental monitoring were associated with Justice-Involved Youth's self-control and affect that, in previous literature, have been shown to be related to the use of substances. Furthermore, parental figures showed unmet personal needs that seem important to address to empower them as a source of help and support for their child in drug treatment. To do so, it is necessary to find ways to engage parental figures in their Justice-Involved Youth's treatment and implement all the required conditions to enable professionals that will oversee this task. It is obvious that giving the starting point of this PhD thesis project, we hope that the knowledge acquired might be of help to improve the care for this vulnerable group. To make progress we believe that stakeholders in research and care should join forces.

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