Family dynamics and alcohol and marijuana use among adolescents: The mediating role of negative emotional symptoms and sensation seeking

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HIGHLIGHTS

• There is a relationship between positive/negative family dynamics and substance use.
• Family conflict increases negative emotional symptoms and sensation seeking.
• Negative emotional symptoms do not have a direct effect on substance use.
• Negative emotions precede sensation seeking, which in turns increases substance use.
• Family attachment reduces negative emotions, which in turn decreases substance use

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ABSTRACT

The literature indicates a close relationship between family dynamics and psychoactive substance use among adolescents, and multi-causality among substance use-related problems, including personal adolescent characteristics as potential influential aspects in this relationship. The purpose of this study is to investigate the role of emotional symptoms and sensation seeking as mediators in the relationship between family dynamics and alcohol and marijuana use among adolescents. The sample consisted of 571 high school students with a mean age of 14.63, who completed the Communities That Care Youth Survey in its Spanish version. We propose and test a mediation-in-serial model to identify the relationships between the study variables. The results of the mediation models indicate that, in most cases, the relationship between family dynamics and the substance use variables is meaningfully carried through the proposed mediators, first through negative emotional symptoms, and then through sensation seeking. The meaning of the mediation varies as a function of the facet of family dynamics (conflict or attachment) and the use aspect (age of onset, frequency of use, and use intention). We discuss the implications of these findings for intervention and prevention strategies.

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1. Introduction

Many studies have assessed the relationship between family dynamics and substance use (SU) among adolescents (Dillon, De La Rosa, Sánchez, & Schwartz, 2012; Koeppela, Bouffardb, & Koeppel-Ullrichc, 2015). The family dynamic represents a contextual variable in which family conflict constitutes a risk factor, while attachment is established as a protective factor. Previous research has found a mediating role of externalizing behaviors in the relation between family dynamics and substance use (Skeer, McCormick, Normand, Buka, & Gilman, 2009; Skeer et al., 2011; Wills, Resko, Ainette, & Mendoza, 2004). However, it has not

been possible to establish a similar mediating role of internalizing symptoms. In order to fill this gap, we propose a wider model that include both externalizing and internalizing behaviors. In particular, we posit that these variables constitute a serial pathway for the effect of family dynamics and substance use. Additionally, we assess whether the pathway is consistent for both positive and negative family dynamics.

The goal of this study is to identify whether sensation seeking and negative emotional symptoms serially mediate the relationship between family dynamics and alcohol and marijuana use among adolescents. We argue that this relationship (family dynamics – substance use) is given through a mechanism whereby variables interact at different levels, in a broad model of interrelations. This approach favors the recognition of the contextual and personal variables implicated in the phenomenon of substance use, which, in turn, can contribute to the design of more efficient prevention and intervention strategies.

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1.1. Contextualization of the problem

Given its prevalence, substance use among adolescents is a global priority (United Nation Office on Drugs and Crime [UNODC], 2014). According to the World Drug Report, the annual global prevalence of marijuana use is of 5% and it constitutes the most commonly used illegal drug. For alcohol, the annual prevalence is higher, at 42% (United Nation Office on Drugs and Crime [UNODC], 2012). The figures are similar for this study, with a use prevalence of 40% in the last month for alcohol, and 4.7% for illegal substances, marijuana being the most commonly used. The same study reported an alarming age of onset, with 12.4 years for alcohol, and 13.7 for marijuana (United Nation Office on Drugs and Crime [UNODC], 2012). Trujillo, Forns, and Pérez (2007) on the other hand, revealed a strong intention to drink alcohol in the near-future among adolescents, but a lower future intention to use substances such as marijuana.

1.2. Risk and protective factors

Studies on SU have targeted the identification of contextual and personal variables that behave as risk or protective factors. The risk factors increase the probability of either a problem occurring, or of prolonging or intensifying an existing problem (Fraser & Terzian, 2005), whereas protective factors reduce, inhibit, or attenuate that likelihood (Hawkins, Catalano, & Miller, 1992; Oliva, Parra, & Sánchez-Queija, 2008).

1.2.1. Family as a risk or protective factor in substance use

A number of studies propose that the family—according to its characteristics, structure, organization and interaction—has a direct influence on SU among adolescents. According to Mosqueda-Díaz and Ferriani (2011), adolescents learn from their parents' behavior, meaning that family dynamics are part of a group of decisive contextual factors associated to alcohol and SU.

As such, a positive family dynamic has been related to a weaker prevalence of SU, as emotionally close families with clearly defined roles for each member present lower rates of adolescent substance use (Hernández & Pires, 2008). Similarly, Sánchez, García, and Nappo (2005) indicate that affective relationships and parents' interest in the socioemotional development of their children are strongly related to abstinence, while Wills et al. (2004) suggest that parental support is negatively related to SU.

Family conflict, in contrast, characterized by the children's rejection of the discipline imposed (Moral, Rodríguez, & Ovejero, 2010), the parents' difficulty in setting boundaries, and communication difficulties in the family nucleus (Vargas et al., 2014), seems to appear frequently in contexts of adolescent substance use. For example, Santander et al. (2008) found that a group of adolescents at high risk of SU perceived that their families were dysfunctional, that their parents did not get involved in their activities, and that there were no clear boundaries or rules at home.

1.3. The pathway of family dynamics, negative-emotional symptoms and sensation seeking

This study proposes a model in which contextual variables such as family dynamics may lead to SU, when other personal variables are involved. In this respect, a number of studies argue that family conflicts lead to negative emotional states in adolescents (Cummings, Koss, & Davies, 2015), and that such negative emotional states can co-occur with other impulsive behaviors (Saddichhaa & Schuetzb, 2014; Tomko et al., 2014).

This comorbidity occurs due to the fact that internal problems (negative emotional symptoms) tend to be expressed through external ones (Cataldo, Nobile, Lorusso, Battaglia, & Molteni, 2005; Kolvin & Sadowski, 2001), such as sensation seeking, which consist in the exploration of situations and new and intense sensations that usually go hand-in-hand with social, physical and/or legal risks (Zuckerman, 1994). Despite the

evidence on the relationship between externalizing and internalizing behaviors with SU, extant mediation models have specified that only the externalizing problems (e.g., poor self-control, risk taking and conduct problem) act as mediators in the relationship between family dynamics and SU in children and adolescents. Internalizing problems such as depression, stress, and anxiety, have no mediating effect in this relationship (Skeer et al., 2009, 2011).

We postulate a broader model in this study, in which both positive and negative family dynamics affect the emotional state of adolescents (internalizing behavior), in turn affecting their personal characteristics such as sensation seeking (externalizing behavior), and influencing their likelihood of psychoactive substance use. To test this hypothesis, we propose a sequential double mediation model (Fig. 1).

As already established in the literature, in this model, the independent variable (IV) is family dynamic (attachment or conflict) and the dependent variable (DV) is SU. The first mediating variable (M1) represents negative emotional symptoms, given that according to the literature, these can arise as a consequence of family conflicts. The second mediating variable (M2) is sensation seeking, which as pointed out, is a consequence of negative emotional symptoms. From this general model, we hypothesize that the sequential double mediation of negative emotional symptoms and sensation seeking explain the effect of family dynamics on substance use. The direct paths and simple mediation paths will, on the other hand, produce effects that are specific to the facet (as risk or protective factor) of family dynamic.

2. Method

2.1. Participants

High school adolescents (N = 827) were recruited from four public institutes in Bogotá, interested in contributing to this study. To be eligible, students had to fall between sixth and eleventh grade, and have the informed consent of their parents or guardians. The age range in the final sample of 571 was between 10 and 19, with an average age of 14.63 (SD = 1.73); 53% were men and 47% women. The study followed the code of conduct for social science research, whereby the parents/legal guardians of the students were informed about the aim of the study, identity protection, and voluntary participation. The questionnaire was applied during class times voluntarily offered by the school and survey application took about an hour for each course and was led by advanced psychology students trained in research methods.

2.2. Measurements

We used the Communities That Care – Youth Survey (CTC-YS) (Arthur, Hawkins, Pollard, Catalano, & Baglioni, 2002) in its Spanish version provided by the test authors, which measures the levels of exposure to substance use risk and protective factors, use patterns, and antisocial behaviors among adolescent students in grades 6 to 12. The following variables were considered in this study (the items included to assess each variable are presented in the appendix).

2.2.1. Substance use

We used three aspects relating to alcohol and marijuana use: 1) Age of onset: this was captured using the average age of onset reported by each participant for alcohol and marijuana use. 2) Substance use intention: this was calculated using the average of the self-reported intention to use marijuana and alcohol in adulthood, responding to the following statement on a scale of 1 to 4, "I will use alcohol/marijuana when I reach adulthood" (1 = not true at all, 4 = very true). 3) Substance use frequency: this was calculated using the average use prevalence for both substances over the previous 30 days (a higher score indicating higher frequency). We used a seven-point scale that captured the approximate number of occasions on which the adolescents used substances over the previous 30 days by asking them to select the most likely range: 0 times,