

## Article

# Substance Use Risk, Body Image, Self-Esteem and Aesthetic-Related Beliefs: A Descriptive and Correlational Study in a Spanish Sample

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## Abstract

Psychoactive substance use is a significant public health issue. Developing effective preventive strategies to reduce its incidence requires a deep understanding of the motivations and risks underlying its development and maintenance. This study examines the associations between substance use risks, self-esteem, and body image perceptions within a Spanish sample ( $n = 174$ ). Data were collected using standardized instruments (ASSIST v3.1, RSES, BSQ-8D, BIS) and an ad hoc questionnaire regarding aesthetic-related beliefs. Findings revealed that while alcohol (90.2%), tobacco (47.1%), and cannabis (29.3%) were the most prevalent substances used in the last three months, associated health risks were predominantly low. Significant negative correlations were identified between self-esteem and the risk of alcohol ( $\rho = -0.155$ ) and sedative use ( $\rho = -0.221$ ), as well as cocaine prevalence ( $\rho = -0.155$ ). Gender differences emerged, with males exhibiting higher risks for cannabis and stimulants, while females reported greater body image concern. Approximately 38.5% of the sample had used substances for aesthetic purposes, primarily dietary supplements among men. Beliefs regarding the impact of consumption on physical appearance were predominantly negative. These results suggest that high self-esteem and negative aesthetic perceptions of substances are consistent with a potential protective role. Effective prevention strategies should incorporate body image and self-esteem as pillars of psychological resistance.

**Keywords:** substance use; body image; self-esteem; Spanish population; beliefs



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## 1. Introduction

Psychoactive substance use constitutes a major public health concern worldwide. According to the World Health Organization [1], more than 2.6 million deaths were attributable to alcohol consumption in 2019, while nearly 600,000 deaths were associated with the use of other psychoactive substances. In Spain, data from the Spanish Observatory on Drugs and Addictions [2,3] indicate a high prevalence of alcohol, tobacco, and cannabis use among both the general population (aged 15–64 years) and adolescents (aged 14–18 years), with particularly early ages of onset reported among young people.

Among the main motivations for alcohol consumption are the pursuit of enjoyment and personal satisfaction, although the specific factors underlying such perceived well-being remain unclear [3]. This satisfaction may encompass diverse factors, ranging

from positive reinforcement and pleasure to more profound psychological rewards. These include the self-perception of appearing more attractive, achieving better self-acceptance, or even serving as a coping mechanism to alleviate the distress caused by a negative self-image.

In this regard, substance use problems have been associated with high rates of comorbidity involving psychological factors, including body dissatisfaction [4]. Body image plays a significant role in the development of personal identity and self-perception [5], making it a relevant variable in understanding the psychological correlates of substance use.

Closely related to body image is the psychological construct of self-esteem, which has been studied as an underlying factor in substance dependence [6,7]. Low self-esteem may arise as a consequence of body dissatisfaction and is also associated with the development of substance dependence, as the use of substances of abuse may serve as a maladaptive coping strategy to compensate for negative emotional states related to self-perception and personal identity [6,7]. In addition, low self-esteem is also considered a potential consequence of addiction and substance dependence [8].

### *1.1. Body Image: Definition and Psychological Impact*

Body image is a multidimensional construct encompassing an individual's thoughts, feelings, and behaviors regarding their physical appearance [5,9]. This complex construct is shaped by individual evaluation, psychological factors, and sociocultural influences [9,10], such as social pressure toward specific aesthetic models. When a discrepancy arises between the perceived image and the idealized body, it results in body dissatisfaction [11,12].

Body image concerns have become increasingly relevant, particularly among young people, largely due to the influence of unattainable appearance-related standards promoted through traditional and social media [12]. Research has consistently shown that body image concerns have a substantial impact on mental health [5,10], contributing to the development of psychopathology and maladaptive behaviours, including substance use [13,14], problematic social media use [14,15], eating disorders [16,17], and mood disorders [10,18].

### *1.2. The Interplay Between Self-Esteem, Body Image, and Substance Use*

Negative body image or body dissatisfaction has been linked to the use of psychoactive substances as a means of altering or improving physical appearance. In this regard, several studies have documented the misuse of Appearance and Performance-Enhancing Drugs (APEDs), such as anabolic-androgenic steroids, particularly among athletes and men [4,19]. The use of these ergogenic substances has been closely linked to body dissatisfaction and sociocultural pressures to conform to hypermuscular appearance ideals [20]. Moreover, APED use has been associated with dependence-like symptoms resembling substance use disorders [21–23] and lower levels of self-esteem [19].

Evidence regarding other substances also highlights the relevance of body image. Body dissatisfaction has been associated with tobacco use as a weight-control strategy and has been identified as a predictor of problematic smoking behaviour among women, although this relationship appears less consistent among men [24–27]. Findings concerning alcohol use are more mixed, with some studies linking alcohol consumption to lower body satisfaction and others reporting the opposite pattern [28,29].

Adolescence appears to be a particularly sensitive developmental period for these associations. Previous research has shown that perceiving oneself as physically attractive is related to tobacco and alcohol use among boys, whereas among girls substance use is more strongly associated with concerns about body weight and body dissatisfaction [30]. Furthermore, psychoactive substance use may serve not only as a strategy to modify

appearance but also as a coping mechanism for dealing with negative emotional states such as stress and anxiety [13].

Self-esteem is closely intertwined with body image, with body dissatisfaction consistently identified as one of the strongest predictors of lower self-esteem [11]. Individuals who experience dissatisfaction with their physical appearance often report diminished self-worth, highlighting the central role of body image in overall psychological well-being.

Previous research has documented significant associations among self-esteem, body image, and substance use [14,31]. Some studies suggest that low self-esteem and body dissatisfaction may contribute to substance use indirectly through their relationship with negative affect and depressive symptoms, particularly among men [6]. From this perspective, substance use may function as a maladaptive coping strategy aimed at managing emotional distress or compensating for negative self-perceptions.

However, the evidence remains inconclusive. While several studies have reported significant associations between these variables, others have failed to identify direct relationships, despite observing high levels of both body dissatisfaction and substance use within the same sample [13,32–34].

These inconsistencies suggest that the relationship between body image, self-esteem, and substance use may be influenced by additional psychological and sociocultural factors. In this regard, age may be an interesting mediating variable, particularly during adolescence and early adulthood, stages characterized by heightened vulnerability and a normative developmental decline in self-esteem [10,12,13,35–37]. Moreover, gender has been shown to significantly influence body image, acting as a predisposing factor for dissatisfaction based on predominant aesthetic standards [12,38].

While women face greater social pressure toward the thinness ideal, men are pressured toward hyper-muscularity. This differentiation of aesthetic ideals has been linked to specific consumption patterns, such as higher alcohol and tobacco use associated with body dissatisfaction in women, but not in men [13,14]. Nevertheless, recent investigations suggest that these gender differences might be changing, indicating that such disparities arise from the specific aesthetic ideal pursued rather than gender itself [19,22].

### *1.3. The Present Study*

Despite the relevance of these psychological variables, research examining their association within the Spanish population remains scarce, often focusing on specific substances or limited samples. Consequently, the present study aims to address this gap by exploring the consumption of a range of psychoactive substances, body image perceptions, and self-esteem within a Spanish sample.

Additionally, this research characterizes the use of substances for aesthetic purposes and examines the prevailing beliefs regarding their impact on weight control, muscle mass, physical appearance, perceived attractiveness and body satisfaction.

## **2. Materials and Methods**

### *2.1. Participants*

The initial sample for this study consisted of 178 individuals over the age of 18 residing in Spain who voluntarily agreed to participate after providing informed consent. The inclusion criteria were being at least 18 years of age, to ensure legal capacity to provide autonomous informed consent, and current residency in Spain. No additional exclusion criteria related to clinical history or sociodemographic characteristics were applied.

## 2.2. Design and Procedures

This research corresponds to a quantitative, observational, cross-sectional, and descriptive-correlational research design. Data were collected once at a single point in time using an online survey (Google Forms) which was disseminated through various social media platforms and via a snowball sampling method, requesting that participants share the link with others via messaging.

## 2.3. Variables and Assessment Instruments

This study assessed sociodemographic data (age and gender: male, female, and other), substance use prevalence and risk, and psychological variables including self-esteem, body image concern, and body satisfaction. Additionally, beliefs regarding the effects of substance use on body image were explored. These variables were collected using the following instruments:

### 2.3.1. Alcohol, Smoking and Substance Involvement Screening Test (ASSIST v3.1)

The World Health Organization Alcohol, Smoking and Substance Involvement Screening Test (ASSIST v3.1) [39] was used to assess lifetime prevalence and health risks associated with the use of ten substances: tobacco, alcohol, cannabis, cocaine, amphetamine-type stimulants, inhalants, sedatives, hallucinogens, opioids, and steroids (the latter added due to its relevance to the study and evaluated using the same eight-item screening and scoring structure as the original substances to ensure comparability). For each substance category, the ASSIST provides the general name together with representative examples of commonly used substances or street names (e.g., Cannabis: marijuana, weed, hashish, etc.), facilitating participants' understanding of the assessed categories. The instrument provides final scores for each substance ranging from 0 to 39, indicating that a higher score corresponds to a greater health risk from use. It also allows for classifying risk into three levels: low (0–3; or 0–10 for alcohol); moderate (4–26; or 11–26 for alcohol); and high ( $\geq 27$ ). In this study, the scale showed acceptable internal reliability ( $\alpha = 0.71$ ).

### 2.3.2. Body Shape Questionnaire (BSQ-8D)

Body image concern was assessed using the Body Shape Questionnaire (BSQ-8D) [40], a short version of the original BSQ-34 developed by Raich et al. [41]. It consists of eight items rated on a 6-point Likert scale ("never" to "always") and total scores range from 8 to 48, with higher scores indicating greater body image concern. The instrument demonstrated excellent internal consistency in this sample ( $\alpha = 0.91$ ).

### 2.3.3. Rosenberg Self-Esteem Scale (RSES)

We used the Spanish adaptation of the Rosenberg Self-Esteem Scale (RSES) [42] by Atienza et al. [43], which consists of ten items measured on a 4-point Likert scale. Scores range from 10 to 40, with higher scores indicating higher self-esteem. The instrument provides cutoff points that allow scores to categorize self-esteem as low (10–19), medium (20–29), or high (30–40). The scale showed high internal consistency in the current study ( $\alpha = 0.87$ ).

### 2.3.4. Body Investment Scale (BIS)

Body image satisfaction was assessed using the Body Investment Scale (BIS) [44]. Specifically, the six-item Body Image Feelings and Attitudes subscale was used. This subscale captures emotional and cognitive evaluations of one's body through items such as "I am frustrated with my physical appearance" or "I like my appearance in spite of its imperfections". Responses were recorded on a 5-point Likert scale (1 = "strongly disagree" to 5 = "strongly agree"), with total scores ranging from 6 to 30, indicating that higher scores

correspond to greater body image satisfaction. In the present study, the subscale exhibited high internal consistency ( $\alpha = 0.91$ ).

#### 2.3.5. Ad Hoc Questionnaire on Beliefs and Aesthetic Substance Use

An ad hoc questionnaire was designed due to the lack of a test that met the study's needs for assessing variables related to beliefs about the effect of substance use on body image.

**Aesthetic-Purpose Prevalence:** Lifetime prevalence of substance use specifically aimed at altering body image was assessed through individual dichotomous ("yes/no") items for each of the 14 substances included (the ten from the ASSIST v3.1 and four additional categories: hormones (e.g., insulin, growth hormone), fat burners (e.g., high-dose caffeine, ephedrine, clenbuterol, DNP), dietary supplements (e.g., creatine, protein powder), and diuretics).

**Specific Beliefs:** Participants reported their beliefs regarding the effects of six selected substances (steroids, alcohol, tobacco, cannabis, cocaine, and amphetamine-type stimulants) across five domains: body weight control, muscle mass influence, physical appearance, perceived attractiveness, and body satisfaction. Beliefs were evaluated through closed-ended items with three mutually exclusive response options (e.g., "causes weight gain," "neither causes weight gain nor loss", or "causes weight loss").

#### 2.4. Data Analysis

Statistical analyses were performed using IBM SPSS Statistics (version 30.0), and a significance level of  $p < 0.05$  was established for all tests.

Descriptive statistics (frequencies, percentages, means, and standard deviations) were performed for the study variables; Cronbach's alpha coefficient was evaluated to assess the internal consistency of the scales.

Given that Kolmogorov–Smirnov tests indicated a non-normal distribution of the data ( $p < 0.05$ ), non-parametric tests were employed. Spearman's correlations ( $\rho$ ) were used to examine the associations between substance use prevalence and risk (over the past three months), psychological variables (self-esteem, body image concern, and satisfaction), and age. Mann–Whitney U tests were applied to analyze differences between categorical variables, such as gender, and the remaining study variables. Finally, while the initial recruitment yielded 178 participants, the "other" gender category ( $n = 4$ ) was excluded from the final analyses to ensure statistical validity, resulting in a final sample of  $n = 174$ .

### 3. Results

#### 3.1. Sociodemographic Characteristics of the Sample

The final sample consisted of 174 participants residing in Spain. The distribution showed a higher representation of females ( $n = 111$ ; 63.8%) compared to males ( $n = 63$ ; 36.2%). The mean age of the total sample was 26.7 years ( $SD = 9.03$ ), with a range between 18 and 63 years. Female participants had a mean age of 26.02 ( $SD = 9.26$ ), while male participants had a slightly higher mean age of 27.95 ( $SD = 8.80$ ).

#### 3.2. Descriptive Analysis of Substance Use and Risk (ASSIST)

Regarding lifetime prevalence, the majority of participants reported having consumed at least one of the ten substances evaluated, with only four individuals reporting no lifetime substance use. The most prevalent substances were alcohol (97.1%), tobacco (75.3%), and cannabis (65.5%). These same substances also exhibited the highest prevalence rates within the last three months: alcohol (90.2%), tobacco (47.1%), and cannabis (29.3%). Other substances, such as amphetamine-type stimulants, sedatives, and cocaine, showed intermediate prevalence rates (11–16%), while the remaining substances were below 9% (Table 1).

**Table 1.** Prevalence and frequency of substance use in the last three months (ASSIST).

| Substance     | Prevalence (Last 3 Months) | Never | 1–2 Times | Monthly | Weekly | Daily/Almost Daily |
|---------------|----------------------------|-------|-----------|---------|--------|--------------------|
| Tobacco       | 47.1%                      | 52.9% | 12.6%     | 12.1%   | 6.3%   | 16.1%              |
| Alcohol       | 90.2%                      | 9.8%  | 27%       | 28.2%   | 32.8%  | 2.3%               |
| Cannabis      | 29.3%                      | 70.7% | 13.8%     | 6.9%    | 3.4%   | 5.2%               |
| Cocaine       | 11.5%                      | 88.5% | 8.6%      | 2.9%    | -      | -                  |
| ATS           | 16.1%                      | 83.9% | 12.1%     | 4%      | -      | -                  |
| Inhalants     | 8.6%                       | 91.4% | 6.3%      | 1.7%    | 0.6%   | -                  |
| Sedatives     | 16.1%                      | 83.9% | 10.4%     | 2.9%    | 1.7%   | 1.1%               |
| Hallucinogens | 5.8%                       | 94.2% | 4%        | 0.6%    | 0.6%   | 0.6%               |
| Opioids       | 1.2%                       | 98.8% | -         | 0.6%    | 0.6%   | -                  |
| Steroids      | 0.6%                       | 99.4% | -         | 0.6%    | -      | -                  |

Note. ATS = Amphetamine-type stimulants.

In terms of health risk levels according to the ASSIST criteria (Table 2), the majority of the sample fell into the low-risk category for all substances, with frequencies exceeding 50% in this level. Moderate risk was most frequently associated with tobacco (39.1%), alcohol (26.4%), and cannabis (24.7%). High-risk scores were minimal, identified only for tobacco (4.6%), cannabis (3.5%), alcohol (2.9%), and sedatives (0.6%).

**Table 2.** Frequency of health risk levels by substance use in the last three months (ASSIST).

| Risk Levels | Tobacco | Alcohol | Cannabis | Cocaine | ATS   | Inhalants | Sedatives | Hallucinogens | Opioids | Steroids |
|-------------|---------|---------|----------|---------|-------|-----------|-----------|---------------|---------|----------|
| Low         | 56.3%   | 70.7%   | 71.8%    | 89.1%   | 86.8% | 94.8%     | 83.9%     | 94.8%         | 96%     | 97.1%    |
| Moderate    | 39.1%   | 26.4%   | 24.7%    | 10.9%   | 13.2% | 5.2%      | 15.5%     | 5.2%          | 4%      | 2.9%     |
| High        | 4.6%    | 2.9%    | 3.5%     | -       | -     | -         | 0.6%      | -             | -       | -        |

Note. ATS = Amphetamine-type stimulants. Percentage distribution of subjects according to the risk level (low, moderate, high) associated with the consumption of each substance.

### 3.3. Descriptive Analysis of Psychological Variables

The descriptive statistics for the psychological instruments are presented in Table 3. For the total sample, participants reported a medium-high average self-esteem score ( $M = 29.47$ ;  $SD = 5.92$ ). Regarding body image, the mean score for body image concern was 23.22 ( $SD = 9.64$ ) on a scale of 8 to 48, while the mean for body satisfaction was 21.07 ( $SD = 6.01$ ) on a scale of 6 to 30.

**Table 3.** Descriptive statistics for self-esteem, body image concern, and body satisfaction.

| Gender | Statistics | Self-Esteem (RSES) | Body Concern (BSQ-8D) | Body Satisfaction (BIS) |
|--------|------------|--------------------|-----------------------|-------------------------|
| Female | M (SD)     | 28.8 (5.89)        | 24.5 (10.04)          | 20.41 (6.01)            |
|        | Range      | 13–40              | 8–47                  | 6–30                    |
| Male   | M (SD)     | 30.63 (5.83)       | 20.97 (8.52)          | 22.25 (5.87)            |
|        | Range      | 17–40              | 8–47                  | 9–30                    |
| Total  | M (SD)     | 29.47 (5.92)       | 23.22 (9.64)          | 21.07 (6.01)            |
|        | Range      | 13–40              | 8–47                  | 6–30                    |

Note. M = Mean; SD = Standard Deviation. Self-esteem was measured using the Rosenberg Self-Esteem Scale; Body concern using the BSQ-8D and Body satisfaction using the BIS (Body Image Feelings and Attitudes subscale).

Statistical analyses revealed significant gender differences in body image variables. Specifically, female participants reported significantly higher levels of body image concern compared with males ( $U = 2796$ ,  $z = -2.19$ ,  $p = 0.028$ ). While male participants exhibited significantly higher body satisfaction than females ( $U = 4178$ ,  $z = 2.14$ ,  $p = 0.033$ ).

Regarding self-esteem, although males scored higher ( $M = 30.63$ ) than females ( $M = 28.8$ ), this difference did not reach statistical significance, showing only a statistical trend ( $p = 0.057$ ).

### 3.4. Sociodemographic Factors and Substance Use

The study identified significant differences between genders regarding the health risks associated with substance use (Table 4). Male participants exhibited significantly higher health risk scores for cannabis ( $U = 4286$ ,  $z = 2.72$ ,  $p = 0.007$ ), amphetamine-type stimulants (ATS) ( $U = 4149$ ,  $z = 2.8$ ,  $p = 0.005$ ), and inhalants ( $U = 4009$ ,  $z = 2.78$ ,  $p = 0.005$ ). Additionally, a statistical trend was observed for cocaine, with males again showing higher risk scores ( $p = 0.054$ ).

**Table 4.** Frequency of health risk levels associated with substance use by gender (ASSIST).

| Risk Levels | Gender | Tobacco | Alcohol | Cannabis | Cocaine | ATS   | Inhalants | Sedatives | Hallucinogens | Opioids | Steroids |
|-------------|--------|---------|---------|----------|---------|-------|-----------|-----------|---------------|---------|----------|
| Low         | Female | 59.5%   | 72.1%   | 79.3%    | 92.8%   | 89.2% | 96.4%     | 80.2%     | 94.6%         | 94.6%   | 96.4%    |
|             | Male   | 50.8%   | 68.3%   | 58.7%    | 82.5%   | 82.5% | 82.1%     | 90.5%     | 95.2%         | 98.4%   | 98.4%    |
| Moderate    | Female | 36%     | 24.3%   | 19.8%    | 7.2%    | 10.8% | 3.6%      | 18.9%     | 5.4%          | 5.4%    | 3.6%     |
|             | Male   | 44.4%   | 30.2%   | 33.3%    | 17.5%   | 17.5% | 7.9%      | 9.5%      | 4.8%          | 1.6%    | 1.6%     |
| High        | Female | 4.5%    | 3.6%    | 0.9%     | -       | -     | -         | 0.9%      | -             | -       | -        |
|             | Male   | 4.8%    | 1.6%    | 7.9%     | -       | -     | -         | -         | -             | -       | -        |

Note. ATS = Amphetamine-type stimulants. Percentages represent the distribution of risk levels within each gender group.

Age was a critical factor associated with substance use risk in this sample. Spearman correlation analyses revealed that older age was significantly and positively correlated with the risk levels of nearly all evaluated substances: ATS ( $\rho = 0.302$ ,  $p < 0.001$ ), tobacco ( $\rho = 0.293$ ,  $p < 0.001$ ), cocaine ( $\rho = 0.248$ ,  $p = 0.001$ ), and cannabis ( $\rho = 0.243$ ,  $p = 0.001$ ), hallucinogens ( $\rho = 0.201$ ,  $p = 0.008$ ), inhalants ( $\rho = 0.193$ ,  $p = 0.011$ ), sedatives ( $\rho = 0.174$ ,  $p = 0.022$ ), and alcohol ( $\rho = 0.153$ ,  $p = 0.044$ ). No significant relationships were established between age and the risk associated with opioids or steroids.

### 3.5. Self-Esteem, Body Image Concern, Body Satisfaction and Substance Use

Spearman's correlation analyses were conducted to examine the relationships between substance use (prevalence and health risk) and psychological variables including self-esteem, body image concern, and satisfaction.

Regarding prevalence over the last three months, a significant negative correlation was found between cocaine use and self-esteem ( $\rho = -0.155$ ,  $p = 0.041$ ), indicating that higher self-esteem levels are associated with a lower prevalence of cocaine consumption. No other significant associations were observed between the prevalence of other substances and the psychological variables assessed.

In terms of health risk levels, two significant negative associations with self-esteem were identified: the risk associated with alcohol consumption ( $\rho = -0.155$ ,  $p = 0.042$ ) and the risk associated with sedative use ( $\rho = -0.221$ ,  $p = 0.003$ ). These results indicate that higher levels of self-esteem are linked to a lower risk of problematic alcohol and sedative use. In contrast, no significant correlations were found between the risk levels of the remaining substances and body image concern (BSQ-8D) or satisfaction (BIS).

Additionally, significant associations were found among the psychological variables themselves. Self-esteem was negatively correlated with body image concern ( $\rho = -0.445$ ,  $p < 0.001$ ) and positively correlated with body satisfaction ( $\rho = 0.445$ ,  $p < 0.001$ ). Furthermore, a strong negative correlation was observed between body image concern and body satisfaction ( $\rho = -0.644$ ,  $p < 0.001$ ).

### 3.6. Substance Use for Body Image Improvement and Gender

Regarding the use of substances specifically aimed at altering or improving body image, 61.5% of the participants ( $n = 107$ ) reported never having used any substance for this purpose during their lifetime. However, 25.3% ( $n = 44$ ) indicated having used only

one substance with this specific objective, while the remaining 13.2% ( $n = 23$ ) reported employing between two and eight different substances.

The substances most frequently used for aesthetic purposes were dietary supplements (25.3%), followed by alcohol (11.5%), tobacco (7.5%), and fat burners (7.5%). Other substances used for this purpose included cannabis (5.7%) and diuretics (5.2%), while prevalence rates for amphetamine-type stimulants, cocaine, sedatives, hormones, inhalants, and hallucinogens were all below 2%. Notably, none of the participants reported using steroids or opioids to improve their body image.

Gender-based analyses revealed that the use of dietary supplements for aesthetic purposes was the only variable with a statistically significant difference ( $U = 4111.5$ ,  $z = 2.558$ ,  $p = 0.011$ ,  $d = 0.2$ ). In this case, male participants reported significantly higher usage rates of dietary supplements for body image improvement than female participants.

### 3.7. Beliefs Regarding the Effects of Substances on Body Image

The analysis of beliefs regarding the impact of substance use on body image revealed a predominantly negative perception across the sample. The majority of participants believed that substance use worsens physical appearance, does not enhance perceived attractiveness, and fails to contribute to body satisfaction.

#### 3.7.1. Weight Control and Muscle Mass

As shown in Table 5, most substances were perceived as weight-reducing agents, including tobacco (46%), cannabis (43.7%), cocaine (67.2%), and amphetamine-type stimulants (ATS; 61.5%). In contrast, alcohol was strongly associated with weight gain by 81% of the sample.

**Table 5.** Frequency of beliefs regarding the effects of substances on weight and muscle mass.

| Beliefs        | Responses | Steroids | Tobacco | Alcohol | Cannabis | Cocaine | ATS   |
|----------------|-----------|----------|---------|---------|----------|---------|-------|
| Weight Control | Slims     | 12.1%    | 46%     | 6.9%    | 43.7%    | 67.2%   | 61.5% |
|                | Gains     | 42.5%    | 8%      | 81%     | 13.2%    | 1.7%    | 1.7%  |
|                | Neither   | 45.4%    | 46%     | 12.1%   | 43.1%    | 31.1%   | 36.8% |
| Muscle Mass    | Increase  | 83.3%    | 2.3%    | 12.6%   | 1.1%     | 1.1%    | 4%    |
|                | Loss      | 4.1%     | 37.9%   | 45.4%   | 51.2%    | 56.3%   | 48.9% |
|                | Neither   | 12.6%    | 59.8%   | 42%     | 47.7%    | 42.6%   | 47.1% |

Note. ATS = Amphetamine-type stimulants.

Regarding muscle mass, steroids were the only substance perceived to increase it (83.3%), whereas alcohol, cannabis, cocaine, and ATS were primarily believed to cause muscle loss.

#### 3.7.2. Appearance, Attractiveness and Body Satisfaction

Regarding beliefs about physical appearance, the majority of participants perceived that substance use has a detrimental effect (see Table 6). High percentages of the sample believed that alcohol (87.4%), cocaine (87.4%), ATS (85.6%), tobacco (82.8%), and cannabis (81%) actively worsen one's appearance. Steroids were the only substance for which a notable minority (26.4%) suggested an improvement in appearance, although the most frequent belief for this substance remained that it either worsens (44.3%) or has no effect (29.3%) on physical looks.

**Table 6.** Frequency of beliefs regarding physical appearance, attractiveness, and body satisfaction.

| Beliefs        | Responses                               | Steroids | Tobacco | Alcohol | Cannabis | Cocaine | ATS   |
|----------------|-----------------------------------------|----------|---------|---------|----------|---------|-------|
| Appearance     | Worsens                                 | 44.3%    | 82.8%   | 87.4%   | 81%      | 87.4%   | 85.6% |
|                | Improves                                | 26.4%    | 1.7%    | 0.6%    | -        | -       | 1.7%  |
|                | Neither                                 | 29.3%    | 15.5%   | 12%     | 19%      | 12.6%   | 12.6% |
| Attractiveness | Not at all                              | 94.8%    | 63.2%   | 78.2%   | 83.9%    | 96.5%   | 96%   |
|                | A little                                | 4.6%     | 27%     | 19%     | 12.6%    | 2.9%    | 4%    |
|                | Yes, enhances attractiveness            | 0.6%     | 9.8%    | 2.8%    | 3.4%     | 0.6%    | -     |
| Satisfaction   | Does not help                           | 42.5%    | 50.6%   | 37.4%   | 47.7%    | 46%     | 49.4% |
|                | On the contrary, decreases satisfaction | 35.1%    | 43.7%   | 48.9%   | 47.1%    | 46.5%   | 42.4% |
|                | Helps to feel satisfied                 | 22.4%    | 5.7%    | 13.8%   | 5.2%     | 7.5%    | 5.2%  |

Note. ATS = Amphetamine-type stimulants.

Beliefs regarding social and psychological benefits were notably low. Between 63.2% and 96.5% of participants stated that these substances do not at all make a person appear more attractive. Similarly, the majority believed that substance use either does not help or actively hinders body satisfaction.

However, minor positive perceptions were noted: steroids were the most valued for improving body satisfaction (22.4%), and tobacco was the substance most associated with perceived physical attractiveness (9.8%).

### 3.7.3. Gender Differences in Beliefs

Chi-square tests revealed a significant association between gender and beliefs regarding tobacco and weight control ( $\chi^2(2) = 7.90, p = 0.019$ ). Female participants were significantly more likely to believe that tobacco aids in weight loss (52.3%) compared to male participants (34.9%). No other significant gender differences were found for the remaining beliefs evaluated.

## 4. Discussion

The main objective of this study was to examine substance use and its health-related risks in connection with self-esteem, body image concern, body satisfaction, and beliefs about the effects of substances on body image within a Spanish sample.

The observed consumption patterns align with typical national trends, where alcohol, tobacco, and cannabis remain the most prevalent substances [2,3]. Furthermore, according to the ASSIST criteria [39], the health-related risks associated with substance use were predominantly low for the majority of the sample. This suggests that, while consumption is widespread, the current usage patterns for most participants do not immediately lead to severe clinical complications and indicate a low probability of developing future health issues.

Moderate risk levels were identified primarily for tobacco, alcohol, and cannabis, which aligns with the findings of Rocha et al. [13]. These three substances, along with sedatives, were also the only ones to reach high-risk scores in this sample.

These results are further supported by López-Rodríguez et al. [45], who reported that tobacco (41.7%), alcohol (15.4%), sedatives (13.7%), and cannabis (5.7%) are the substances with the highest prevalence and risk screening in Spanish primary care populations.

Notably, the identification of high risk for sedatives in this study, despite a lower overall prevalence compared to alcohol or tobacco, reflects a significant public health concern. This observation is consistent with recent data from Mouriño et al. [46] and the OEDA [3], which warn of a substantial increase in both the prevalence and health risks associated with sedative and hypnosedative use in Spain.

The sample in this study displayed medium-high levels of self-esteem alongside moderate scores for body image concern and body satisfaction. The absence of extreme

values across these psychological variables suggests that, overall, the participants did not hold significantly negative perceptions toward their own bodies.

Regarding the relationship between these psychological dimensions and substance use, the findings highlight self-esteem as a key factor. Specifically, the prevalence of cocaine use over the last three months was negatively correlated with self-esteem, indicating that lower self-esteem is associated with higher rates of cocaine consumption. This is congruent with research by Jain et al. [47], which observed that higher self-esteem levels correspond to reduced cocaine use. Furthermore, the health risks associated with alcohol and sedative use were also negatively associated with self-esteem. These findings, supported by previous studies [48,49], suggest that high self-esteem may be associated with a lower risk of problematic alcohol consumption and other substance-related behaviors.

In contrast, body image concern and body satisfaction did not show significant relationships with the prevalence or health risk levels of most evaluated substances. These results align with prior research that failed to observe significant associations between these specific body image variables and substance use patterns [13,32–34]. Consequently, the data from this study suggest that while general self-esteem significantly influences the risk associated with certain substances (such as cocaine, alcohol, and sedatives), specific body image variables do not show a significant association with the risk levels measured in this sample.

Regarding demographic factors, gender was significantly associated with the health risks of several substances. Male participants exhibited significantly higher risk levels for cannabis, amphetamine-type stimulants, and inhalants. Additionally, a statistical trend was observed for cocaine risk, with males showing higher scores than females. These findings are consistent with previous studies indicating that substance use, particularly cannabis, is a greater concern among the male population [13,45].

Notably, although no significant overall differences were found in sedative use risk, high-risk consumption was exclusively identified among female participants, while no such cases were recorded for males. According to Mouriño et al. [46], the higher prevalence of hypnosedative use in women may be linked to a greater incidence of disorders such as anxiety, depression, or somatization. It might also reflect women's higher awareness of mental health and their greater tendency to seek professional assistance. Furthermore, certain healthcare biases—where clinicians may adopt a more psychological focus when treating women—could also contribute to this disparity.

Psychological variables were also significantly influenced by gender. Male participants reported higher body satisfaction, whereas female participants reported greater body image concern. A statistical trend was also noted for self-esteem, with males scoring higher than females; these results mirror prior research suggesting that gender significantly impacts body image perception, often leading to higher satisfaction and self-esteem in men and greater concern in women [38].

Age also emerged as a variable with numerous significant associations, indicating that increased age is linked to higher health risks across nearly all evaluated substances, with the exception of opioids and steroids, which showed no significant results. This finding is consistent with consumption prevalence reports from other studies regarding age; specifically, the population with the highest consumption rates is generally found within the 35–64 age group, whereas cannabis remains more prevalent among those under 35 [3].

The analysis of Substance Use for Body Image Improvement revealed that 38.5% of the sample reported using substances to alter their physical appearance: 25.3% had used a single substance, while 13.2% employed between two and eight different substances for this purpose. The most frequently used substances included dietary supplements, alcohol,

tobacco, and fat burners (thermogenics). Notably, none of the participants reported using steroids specifically to improve their body image.

Despite the absence of steroid use, the employment of fat burners and dietary supplements for aesthetic goals is consistent with literature reporting the reality of ergogenic substance use to enhance physical appearance [50]. These results are particularly interesting when compared to findings that link steroid consumption to body dissatisfaction and the pursuit of a hyper-muscular ideal [20,23]. In this sample, low levels of body satisfaction were scarce, which aligns with the observed lack of steroid use for body image improvement.

Regarding gender differences, male participants reported significantly higher usage of dietary supplements compared to females. These substances, often categorized in the literature as “Appearance and Performance Enhancing Drugs” (APED), have shown strong associations with the male gender. Their consumption is predominantly linked to men, which is consistent with prevailing male aesthetic ideals centered on increasing muscle mass [4,19,20,50].

Regarding beliefs about the effects of substances on body image, the majority of the sample considered that substance use worsens physical appearance and perceived attractiveness, while failing to contribute positively to body satisfaction. These beliefs were particularly consistent across most evaluated substances, reflecting a notably negative view regarding muscle mass and physical attractiveness.

However, relevant nuances were observed: in the case of steroids, the sample perceived that they do not affect weight but do contribute to increased muscle mass, which aligns with their use as substances oriented toward appearance and performance enhancement [4,19,50]. Additionally, a degree of ambivalence was noted regarding tobacco; while one part of the sample perceived it as a weight-loss aid, another saw no influence on weight control.

Although the majority expressed negative beliefs, a minority proportion considered that certain substances, such as steroids, alcohol, and tobacco, could have positive effects on physical appearance. Specifically, tobacco was the substance most frequently associated with the belief that it contributes to enhancing physical attractiveness. When considering gender, a significant association was identified regarding the belief that tobacco controls weight, with female participants scoring significantly higher. These data mirror findings from other studies where women utilize tobacco for weight management due to aesthetic standards centered on the thinness ideal [24,25,27].

Despite these findings, several methodological limitations should be acknowledged when interpreting the results. First, although the sample size was adequate for the planned analyses, it was not sufficiently large to ensure full representativeness or to support generalization of the findings to the broader Spanish population. In addition, the very small number of participants identifying outside the gender binary ( $n = 4$ ) precluded the inclusion of this subgroup in the inferential analyses, as the available sample was insufficient to support robust statistical inference. Consequently, the findings should be interpreted as applying only to participants identifying as men or women. This underrepresentation constitutes an important limitation of the study, as it limits the inclusiveness of the analyses and precludes the generalization of the findings to gender-diverse populations. Furthermore, the sample was characterized by a gender imbalance, with women representing 63.8% of participants. This unequal distribution may have influenced the overall estimates and should be considered when interpreting the findings. Specifically, women reported significantly greater body image concern than men, whereas men showed higher risk for the use of certain substances, including cannabis and stimulants. Consequently, the overall estimates may be somewhat influenced by the unequal gender distribution, potentially leading to a slight overrepresentation of body image concerns and an underrepresentation of substance use risk in the total sample.

The data collection method also had several limitations; although the online format (Google Forms) facilitated anonymity and provided access to a diverse sample, it may have restricted the participation of certain profiles and reduced control over the participants' response environment.

The lack of standardized instruments specifically designed to evaluate beliefs regarding substance use for aesthetic purposes necessitated the use of ad hoc items, which may have affected the validity and reliability of this dimension. Finally, certain sociodemographic and physical characteristics that could act as potential confounders, such as educational level, socioeconomic status, body mass index and physical activity levels, were not collected; their absence hinders a more comprehensive characterization of the sample and the ability to control for these factors in the correlational analyses. Future studies should address these limitations by recruiting larger and more demographically balanced samples, incorporating longitudinal designs, and validating specific measures of beliefs regarding the aesthetic use of substances. In addition, including relevant covariates—such as socioeconomic status, educational level, BMI, and physical activity—as well as conducting age-stratified analyses, would provide a more comprehensive understanding of the relationship between body image and substance use.

## 5. Conclusions

In synthesis, the results evidenced a high prevalence of substances such as alcohol, tobacco, and cannabis, but with predominantly low health risks as evaluated by the AS-SIST. Furthermore, the sample exhibited medium-high self-esteem and moderate levels of body image concern and satisfaction. These psychological variables, combined with the observed risk levels, suggest that factors such as high self-esteem play a role in modulating consumption patterns within this Spanish population. The predominantly negative beliefs regarding the impact of substances on body image are highly consistent with these findings: individuals who do not exhibit problematic risks and maintain healthy levels of self-esteem and body satisfaction are less likely to perceive substances as tools for aesthetic improvement or to justify their use through such effects. Moreover, the perception of substance use as detrimental to physical appearance is consistent with a potential protective role.

From an addiction prevention perspective, these results underscore the necessity of developing integrated strategies that move beyond traditional health warnings. Effective prevention must incorporate body image and self-esteem as core pillars of psychological resistance, especially for young populations increasingly vulnerable to the pressures of socially promoted aesthetic ideals.

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## Abbreviations

The following abbreviations are used in this manuscript:

|        |                                                      |
|--------|------------------------------------------------------|
| ASSIST | Alcohol, Smoking and Substance Involvement Screening |
| APED   | Appearance and Performance Enhancing Drugs           |
| ATS    | Amphetamine-type stimulants                          |
| BIS    | Body Investment Scale                                |
| BSQ-8D | Body Shape Questionnaire                             |
| OEDA   | Spanish Observatory on Drugs and Addictions          |
| RSES   | Rosenberg Self-Esteem Scale                          |
| WHO    | World Health Organization                            |

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