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Risky Sexual Behaviors in Women and Their Relationship with Alcohol Consumption, Tobacco, and Academic Stress: A Multiple Correspondence Analysis Approach

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Abstract: University women are vulnerable to engaging in risky sexual behaviors (RSBs), which are related to academic stress, alcohol, and tobacco consumption. The aim of this study was to identify profiles of university women who associate RSBs with alcohol consumption, tobacco consumption level, and frequency of academic stress. A total of 534 female university students from Mexican universities answered an online questionnaire with five instruments related to their sexual behavior, alcohol consumption, tobacco consumption, and academic stress. They were studying to become professionals in health sciences, administration and social sciences, engineering, and "others" with grade point averages ranging from 5.7 to 10/10. They had to sign an informed consent and acknowledge having had at least one sexual relationship with anal or vaginal penetration before participating. A multiple correspondence analysis yielded a parsimonious solution with the following three dimensions that explained 38.60% of the variance: 1 "pregnancy"; 2 "number of sexual partners"; 3 "substance use". Using a point cloud clustering strategy based on the Euclidean distance between categories in a two-dimensional space, five profiles were identified: *Conservative and Prudent*, *Active Promiscuous*, *Vulnerable Reproductive Health*, *STI Risk*, and *Moderate Risk Behaviors*. The estimation of ellipses with 95% confidence from the calculation of centroids allowed for the integration of two profiles: *Lower probability of RSB* and *Higher probability of RSB*. The contribution of academic stress was null with respect to the model solution, so this variable was discarded. The results identified particular risk profiles in female university students. These findings are useful for the development of differentiated intervention strategies to reduce RSB in this vulnerable group.

Keywords: psychosocial profiles; HIV/AIDS; voluntary termination of pregnancy; addictions; multiple correspondence analysis

1. Introduction

Factors associated with the beginning of university life can have an impact on the personal lives of students, leading to the presence of risky sexual behaviors [1]. In this regard, recent data indicate that between 60 and 81% of this population is sexually active [2,3], which can lead to risky sexual behaviors (RSBs).

RSBs are behaviors that can lead to sexually transmitted infections (STIs), which represent a major public health problem as they impact the area of sexual and reproductive health through stigmatization, infertility, the presence of cancer, and unwanted pregnancies. RSBs include relationships with multiple partners, having unprotected sex (i.e., without a male or female condom), having sex with strangers, and having sex under the influence of alcohol or other substances [3]. In Mexico, during 2022, 25% of STIs occurred in the group of young people between 15 and 24 years old [4].

Regarding risky sexual behaviors over the years, data are scarce, but we can point out that a significant number of women know the contraceptive methods (98.7%), a statistic that has remained similar since 2018; on the other hand, 96.6% of women know how to use contraceptive methods correctly, a statistic also similar to that of 2018 (95.6%). In relation to the constant use of contraceptives in a sexual relationship, the issue is somewhat worrying, because although the percentages have also remained the same from 2018 to date, women between 20 and 24 years of age report only 68.2% use, which is what can lead to the presence of STIs and unwanted pregnancies [5]. From the above, very high prevalences of STIs are recorded in the university student population, ranging from 40 to 69.3% based on inconsistent use of condoms or contraceptives [6,7], from 34.3 to 41.9% for sexual relations under the influence of alcohol [8], and 72% for casual encounters or without the intention of establishing a romantic relationship [9]. Alcohol consumption has also been significantly associated with early sexual initiation (OR = 1.958, 95% confidence interval (CI) = 1.635–2.346), and with having multiple sexual partners (OR = 1.722, 95% CI = 1.525–1.945) [10]. Based on tobacco consumption, we can also point it out as a promoter of RSBs [11]. Bartholomew et al. [12] found a strong association between having two or more sexual partners, getting drunk in the past month, and having smoked cigarettes. Finally, it has been documented that inadequate stress management also increases the prevalence of RSBs; in this regard, women are a vulnerable group, as this issue exposes them to unwanted pregnancies and unsafe illegal abortions [13,14].

1.1. Alcohol and Tobacco Consumption in Women

Alcohol and tobacco consumption in women has increased in recent years [15], the former even equaling consumption by men [16,17]. This increase has been associated with high levels of distress in women and the way they cope with it [18,19]; for example, in the COVID-19 pandemic, alcohol and tobacco consumption in women increased by 17%, which did not occur in the case of men [20,21]. Data obtained from women over 18 years of age belonging to the general population have shown a prevalence of alcohol and tobacco consumption of 28.1% and 20.6%, respectively [22], which can be attributed to the influence of emotional, physiological, social, economic, and cultural factors that cause changes in lifestyles, and that negatively impact nutritional habits, substance use and the level of physical activity [23]; however, among university women, alcohol consumption was reported in 60.1% [24], and the occurrence of at least one event of excessive alcohol consumption ranged between 48% and 60% [13,25]. Also, among university women, the prevalence of tobacco consumption is high, at 39.5% [26], and although differences in tobacco consumption between university students according to gender are still detected, the gap is beginning to narrow [27].

1.2. Relationship between Alcohol Consumption and Risky Sexual Behaviors

In relation to RSBs in university women in the United States, it has been reported that alcohol consumption is associated with unprotected sexual encounters [28,29] and STI transmission [30]. In the case of Mexico, we can say that 50.6% of university women

consume alcoholic beverages just before having sexual relations, which can lead to a high prevalence of RSBs, reflected in an incidence ranging from 22 to 45.7% of sexual relations without a condom depending on the study area, and in percentages ranging from 42 to 48.5% for occasional condom use, also depending on the study area [31]. These percentages are only attenuated by the existence of religious beliefs, the impact of which, according to Poulson et al. [32,33], decreases alcohol consumption. A study of 1564 college students found through a survey that alcohol consumption was associated—in the case of women—with unprotected sex (11%), sex they were not happy with at the time (6%), sex they later regretted (16% and 19%), and even sexual assault (1%) [34]. Alcohol consumption is also associated with the detection of STIs [35], such as chlamydia, trichomoniasis, genital herpes, and HPV, which are the most frequent STIs in both men and women between 15 and 24 years of age and comprise 98% of all prevalent STIs and 93% of all incident STIs [36]. Finally, although not in university students but in adolescents, alcohol consumption is a factor directly related to unwanted pregnancy, greater frequency of sexual relations, and an earlier age of onset of sexual life [37,38]. For teenagers, it should be noted that although in most countries, there is a minimum age for alcohol consumption, the main way of acquiring drinks is through the permissive behavior of parents, who are willing to provide them [39]. Although we cannot rule out the possibility that there is an illegal sale of alcohol to minors, there is no record of this.

1.3. Relationship between Tobacco Consumption and Polydrug Use and Risky Sexual Behaviors

In adolescents and especially in women, tobacco consumption has been linked to maintaining sexual relations, a risk factor in itself at early ages [40,41]. Polydrug use, that is, alcohol consumption accompanied by tobacco or other drugs, has also been linked to an increase in sexual partners [11] and casual sexual relations [42]. In university students, profiles have been detected that contemplate the association between tobacco consumption, alcohol consumption, and a sexually active life [43]. On the other hand, there is evidence that university women present greater academic stress [44], which can be attributed to academic overload, the presence of constant exams, methodological deficiencies of teachers, poor diet, and lack of exercise [45], a reason that makes alcohol consumption more likely [22] and the use of sexual activity as a way of managing it [30].

1.4. Objectives of This Study

This study focuses on university women, as data show an increase in alcohol and tobacco consumption in this group, which exposes them to a higher frequency of RSBs; furthermore, university women are at higher risk of STIs and sexual violence compared with men and non-university women [46,47]. In this regard, Iwamoto et al. [13] pointed out the need to conduct studies focused on women to determine particular aspects related to RSBs. In this context, the aim of this study was to identify specific profiles of university women who associate RSBs with alcohol consumption, the level of tobacco consumption, and the frequency of academic stress.

2. Materials and Methods

2.1. Participants

Using a nonprobabilistic convenience sampling technique, 781 female university students between 18 and 41 years old (M = 22.13; SD = 2.44) who were residents of Mexico City (n = 368; 47.12%), State of Mexico (n = 337; 43.15%), or the interior of the Mexican Republic (n = 76; 9.73%). They were enrolled in public universities (n = 674; 86.30%) or private universities (n = 107; 13.70%). The participants studied health (n = 342; 43.79%), administrative and social sciences (n = 192; 24.58%), engineering (n = 195; 24.96%), or other careers (n = 52; 6.65%), with an academic average that ranged between 5.7 and 10/10 (M = 8.28; SD = 0.72). A total of 79 (10.1%) were in their first year of studies, 203 (26%) in their second year, 186 (23.8%) in their third year, 197 (25.2%) in their fourth year, 88 (11.3%) in their fifth year, 11 (1.4%) in their sixth year, and 17 (2.2%) in their seventh year. The

inclusion criteria were voluntary participation in this study, signing of informed consent, being of legal age, being a university student, and having had at least one incident of sexual intercourse with vaginal or anal penetration at the time of answering the instruments.

2.2. Instruments

- Sociodemographic and academic questionnaire.

Designed specifically for this study, the sociodemographic and academic questionnaire collected information on age, place of residence (Mexico City, State of Mexico, or Interior of the Republic), type of university attended (public or private), area of professional studies (health and biological sciences, administration and social sciences, engineering, or others), and academic average (0 to 10).

- Sexual Behavior and Sexual and Reproductive Health Questionnaire (SBSRHQ; [48]).

Designed with a Catalan population, the original questionnaire comprises 35 questions organized into the following 4 sections: I: sociodemographic characteristics (6 questions); II: alcohol and drug consumption (4 questions); III: sexual behavior (14 questions); and IV: sexual and reproductive health (11 questions). From sections III and IV, 11 questions were chosen that were appropriate to the objectives of this study (i.e., 11–13, 15, 17, 18, 25, 29–32). For questions 12, 15, and 17, categories were created specifically, while for the remaining questions, the response options were already defined. None of the response options had a predefined or assigned numerical value. The scoring was performed by calculating frequencies for each question. It is important to note that because of the structure of the questionnaire, the fact that it does not assess latent factors or components, and the fact that it does not have a defined factorial structure, an internal consistency analysis was not performed. In addition, the answers to each question have different response options, so they do not have a stable value, and assigning one would be arbitrary and would produce an inconsistent variance that would compromise the usefulness of any statistic.

- Alcohol Use Disorder Identification Test (AUDIT).

The AUDIT was validated in a transnational standardization that includes Mexico [49]. It comprises 10 items on a Likert scale organized into the following 3 factors: Hazardous Alcohol Use (3 items), Dependence Symptoms (3 items), and Harmful Alcohol Use (4 items). The first 8 items are scored on a 5-point scale (0 to 4), while the remaining 2 items are scored on a scale of 0, 2, and 4. They are scored by the arithmetic sum of the scores for each item. A score ≥ 8 indicates risky consumption [50]. Because of organic (metabolic) factors, a cut-off point of 7 has been suggested for women. It has a sensitivity and specificity greater than 0.90 and 0.80, respectively [49]. With our sample, the psychometric properties of the confirmatory model with 1 factor were acceptable for $CFI = 0.93$ and $TLI = 0.91$ but not acceptable for $x^2 = 299.16$ ($p < 0.01$), $x^2/df = 8.54$, $RMSEA = 0.11$ (90% $CI = 0.10$ to 0.12) and $WRMR = 1.56$. The internal consistency was $\omega = 0.82$ (95% $CI = 0.79$ to 0.89).

- Questionnaire to Classify the Level of Tobacco Consumption Young People (C4; [51]).

The C4 was designed and validated with a population of Colombian university students. It is a questionnaire with 15 questions, of which 8 are dichotomous and the rest are polytomous. The answers to 8 questions are assigned a score between 0 and 6 and are graded by their arithmetic sum. The level of tobacco consumption is interpreted as low (0 to 4), moderate (5 to 8), high (9 to 18), and dependent (≥ 19; [52]). It has an internal consistency $\alpha = 0.90$.

- Inventory of Academic Stress (SISCO; [53]).

The SISCO was designed and validated with a Mexican student population. It has 31 items, of which the first two are used to identify the presence (Yes or No) of academic stress in the respondent and its perceived degree on a scale of 1 to 5. The remaining 29 are divided into 3 dimensions that investigate, respectively, the frequency with which a school demand is perceived as an academic stressor, the frequency of symptoms or reactions to it,

and the frequency with which coping strategies are used. Dimension 3, "Stressors", was used, which contains 8 situations that describe academic situations, and the frequency with which each generates stress for the student is questioned on a 5-point Likert scale (1: Never to 5: Always). It is scored by its arithmetic sum, and the higher the score, the greater the frequency of stress. This section presents an internal consistency $\alpha = 0.85$. With our sample, the psychometric properties of the confirmatory model with 1 factor were excellent for *CFI* = 0.96 and acceptable for *TLI* = 0.94 and *RMSEA* = 0.08 (90% *CI* = 0.07 to 0.09) but not acceptable for $x^2 = 127.63$ ($p < 0.01$), $x^2/df = 6.35$, and *WRMR* = 1.33. The internal consistency was $\omega = 0.79$ (95% *CI* = 0.76 to 0.82).

2.3. Design

This was a cross-sectional and descriptive study. A multivariate and multidimensional analysis was used, based on MCA. In this regard, the following strategies were used: point clouds and ellipses from centroids and a 95% confidence interval.

2.4. Procedure

Using the social network Facebook®, a dissemination campaign was carried out in which women who met the inclusion criteria were invited to participate in a study titled "Psychological well-being in university women: risk and protection factors". Interested participants accessed the set of digitalized instruments through a link or QR code using a Google form, where informed consent was also provided digitally, ensuring the confidentiality and anonymity of the responses. Once the consent was accepted, the questionnaires lasted approximately 15 min. To avoid duplicate responses, a relative check was performed based on the date and time recorded in the Google form.

2.5. Ethical Considerations

This study was conducted in accordance with the 2013 revised Declaration of Helsinki [54] and the ethical standards and considerations for research with humans in force in Mexico [55] and the APA [56]. This study is part of the research project "Predictores de perfiles diferenciados de ideación suicida en estudiantes de nivel medio superior y superior" approved by the Secretaría de Investigación y Posgrado of the Instituto Politécnico Nacional (SIP registration 20240818). It is a study with minimal risk for participants according to the Regulations of the Ley General de Salud en Materia de Investigación para la Salud (Art. 3 Frac. I, Art. 4, Art. 6, Title II Chap. I, Art. 10). 17 Frac. II and its update published in the Diario Oficial de la Federación (2 April 2014) and based on the Norma Oficial Mexicana NOM-012-SSA3-2012 (Section 5 numbers 5.3 to 5.13 and 5.15), which establishes the criteria for the execution of health research projects in human beings.

2.6. Data Analysis

For data analysis, the program R v.4.3.1 [57] was used with its interface RStudio v.2023.06.1 [58] and the libraries psych v.2.3.9 [59], cluster v.2.1.4 [60], stats v.4.3.1 [57], rstatix v.0.7.2 [61], misty v.0.5.4 [62], vcd v.1.4-12 [63], dplyr v.1.1.2 [64], FactoMineR v.2.8 [65], factoextra v.1.0.7 [66], ggplot2 v.3.43 [67], and scatterplot3d v.0.3-44 [68]. A $p \leq 0.05$ was considered significant.

2.6.1. Descriptive Analysis

From the total sample, participants who had had sexual relations at least once in their lives at the time of answering the instruments were selected. Then, the response frequency for the SBSRHQ questions, the prevalence of hazardous alcohol consumption, the level of tobacco consumption, and the frequency of stress in academic situations were estimated. To establish 3 different levels for the latter (i.e., Never or rarely, Sometimes, and Almost always or always) with the total score obtained in the SISCO inventory, a k-means cluster analysis was estimated. To validate the clusters, the Bartlett test was first estimated to verify the equality of variances. For unequal variances, an ANOVA was performed with Welch's

correction and the Games–Howell post hoc test; for equal variances, a one-way ANOVA and the Tukey test were used. η^2 was used as an indicator of the effect size, which was considered small, medium, or large with values $\eta^2 \geq 0.01$, 0.06, and 0.14, respectively [69].

According to the interpretation of the SBI, the frequency and percentage of participants who presented different levels of burnout as well as the presence of guilt were estimated.

2.6.2. Correlation Analysis

The association between the frequency of responses to the SBSRHQ questions and the prevalence of alcohol consumption, tobacco consumption, and the frequency of stress in academic situations was estimated. For this purpose, χ^2 tests of independence were used with the post hoc test of standardized Pearson residuals and the estimation of Cramer's V to determine the strength of the associations among variables. The latter was interpreted as low ≥ 0.05; moderate ≥ 0.10; strong ≥ 0.15; and very strong ≥ 0.25 [70]. This test was performed as long as less than 20% of the boxes had a frequency of less than 5 cases [71]. When a single box had a frequency of less than 1 (i.e., 0), the possibility of eliminating the column containing the frequency 0 was evaluated and then Fisher's exact test was used [72]. For the SBSRHQ, question 12 integrated two categories (i.e., 12 to 16 and 17 to 26), for questions 13 and 18, the categories "No" and "I do not remember" were integrated, and for questions 25, 29, and 30–32, the category I prefer not to answer was eliminated. This was due to the low response frequency that could affect the estimation of the χ^2 tests and the null information provided by its retention.

2.6.3. Multiple Correspondence Analysis

A nonparametric analysis developed for categorical data was performed, analogous to the parametric analysis of principal components, referred to as multiple correspondence analysis (MCA; [73]). MCA is an extension of simple correspondence analysis. While both are multivariate and multidimensional analyses that provide a graphical representation of the rows and columns of a contingency table [74], MCA is used with more than two variables organized in a Burt matrix. Despite its ability to group variables in a multidimensional space, two dimensions are generally sufficient to explain the results [75]. From the Burt matrix, eigenvalues are extracted whose values indicate the percentage of variance explained by each retained dimension (cf., [76]). For two dimensions, categorical variables and their response options are represented in a biplot [77] that distributes them along an X-axis (Dimension 1) and a Y-axis (Dimension 2), creating, in a Euclidean space, subgroups of similar responses that are mutually exclusive of other subgroups [78]. Each dimension is interpretable by the categories that best represent them and tend to discriminate between specific patterns of responses for them. The contribution of a specific category to a particular dimension is defined by the value of its squared cosine (cos^2), which is conceptually similar to the square of correlations [79].

The number of dimensions to be retained was based on the eigenvalues (i.e., percentage of explained variance) of each one, the quality of representation of the categories of the variables in each dimension (i.e., cos^2), and the parsimony and coherence of the best possible solution [74]. Then, the variables that best interpreted each dimension and the correlation between them were described [75]. Four biplots were subsequently created and analyzed. The first one with the categories of the variables represented by dimension and a general description was given; the second one with an approach based on creating point clouds that encompass diverse categories with the smallest Euclidean distance that allows for differentiating specific profiles (cf., [75]). Since the previous one implies a certain degree of subjectivity, the last two were based on the creation of ellipses with 95% confidence for each indicator of substance consumption (i.e., AUDIT and C4; cf., [78]). With this, profiles were elucidated under objective criteria.

3. Results

3.1. Descriptive Analysis

Of the total number of participants, at the time of answering the battery, 247 (31.60%) had not had penetrative sexual relations, while 534 (68.40%) had (Question 11, SBSRHQ). The data analyses presented are based on that subsample, *n* = 534. However, since some questions offered the option "I prefer not to answer", and that category did not yield information, the actual *n* on which the analyses were performed could be lower. The first sexual relationship of these participants occurred between the ages of 12 and 26 (*M* = 17.58; *SD* = 2.23; *Mdn* = 18; Question 12, SBSRHQ); the number of sexual partners throughout their lives ranged between 1 and 33 (*Mdn* = 3; Question 15, SBSRHQ) and between 0 and 10 in the last year (*Mdn* = 1; Question 17, SBSRHQ). Table 1 shows the response frequency for the SBSRHQ questions. Overall, 8.23% (*n* = 44) reported not consuming alcoholic beverages, 58.42% (*n* = 312) indicated a level of consumption without risk, and 33.33% (*n* = 178) had a risky level of consumption. Furthermore, 52.24% (*n* = 279) indicated not consuming tobacco, 41.57% (*n* = 222) consumed it moderately, and 6.17% (*n* = 33) were dependent on tobacco. The frequency of stress in academic situations was "Never or rarely" for 126 (23.59%), "Sometimes" for 236 (44.19%), and "Almost always or always" for 172 (32.20%). The solution of these three categories obtained in the k-means cluster analysis was initially evaluated for its equality of variances between groups. As they were not equivalent (χ^2 = 43.22, $p < 0.001$), it was confirmed by one-way ANOVA with Welch's correction and the Games–Howell post hoc test. The latter showed differences between the three clusters, [$F(2, 270)$ = 971.45, $p < 0.001$, Games–Howell $p < 0.001$], with a large effect size (η^2 = 0.82).

Table 1. Frequency of responses to the questions of the Sexual Behavior, Sexual, and Reproductive Health Questionnaire by university women.

	Ask	*n*	%
13.	Did you use a condom in that first complete sexual relationship?		
	Yes	414	77.52
	No	108	20.22
	I do not remember	12	2.24
18.	Did you use a condom in your last sexual relationship (vaginal or anal)?		
	Yes	384	71.91
	No	145	27.15
	Prefer not to answer	5	0.93
25.	Have you ever been diagnosed with a sexually transmitted infection (STI)?		
	Yes	47	8.80
	No	479	89.70
	Prefer not to answer	8	1.49
29.	Have you ever been pregnant?		
	Yes	84	15.73
	No	437	81.83
	Prefer not to answer	13	2.43
30.	Have you ever had a voluntary termination of pregnancy?		
	Yes	57	10.67
	No	462	86.51
	Prefer not to answer	15	2.80
31.	Have you ever used the morning-after pill to prevent pregnancy?		
	Yes	369	69.10
	No	155	29.02
	Prefer not to answer	10	1.87

Table 1. *Cont.*

Ask		*n*	*%*
32.	Have you ever been tested for HIV or AIDS?		
	Yes	192	35.95
	No	329	61.61
	Prefer not to answer	13	2.43

Abbreviations: *n*: sample size.

3.2. Correlation Analysis

Alcohol consumption at risk level (Table 2) was associated with six or more sexual partners throughout their lives and more than two in the last 12 months, not using a condom in their last sexual relationship, a diagnosis of a sexually transmitted infection, and pregnancy. Safe alcohol consumption was associated with having no more than five sexual partners throughout one's life and no more than one in the last year, using a condom in one's last sexual relationship, not having been diagnosed with any sexually transmitted infection, and using the morning-after pill, in addition to a lower probability of having had a voluntary interruption of pregnancy compared with women who consume alcoholic beverages at risk level. Finally, not consuming alcohol was associated with not having been pregnant and not having used the morning-after pill.

Table 2. Associations between behavior, sexual health, and reproductive health and alcoholic beverage consumption in female university students.

Ask [*n*]	Alcoholic Beverage Consumption			χ^2	*V*
	No	**Without Risk**	**With Risk**		
12. At what age did you have your first sexual relationship (vaginal or anal)? [*n* = 330]				0.99	--
12 to 16	6 (1.81)	63 (19.09)	39 (11.81)		
17 to 26	17 (5.15)	135 (40.90)	70 (21.21)		
13. Did you use a condom in that first complete sexual relationship? [*n* = 534]				3.71	--
Yes	29 (5.43)	245 (45.88)	140 (26.21)		
No or I do not remember	15 (2.80)	67 (12.54)	38 (7.11)		
15. Throughout your life, approximately how many different partners have you had sexual relations with? [*n* = 534]				20.02 **	0.13
1 to 5	34 (6.36)	233 (43.63) †	103 (19.28)		
6 to 10	1 (0.18)	36 (6.74)	33 (6.17) †		
11 or more	9 (1.68)	43 (8.05)	42 (7.86) †		
17. In the last 12 months, approximately how many different partners have you had sexual relations with? [*n* = 534]				45.09 **	0.20
Zero to one	28 (5.24)	222 (41.57) †	75 (14.04)		
Two to three	6 (1.12)	61 (11.42)	62 (11.61) †		
Four or more	10 (1.87)	29 (5.43)	41 (7.67) †		
18. Did you use a condom in your last sexual relationship (vaginal or anal)? [*n* = 529]				7.16 *	0.11
Yes	34 (6.42)	235 (44.42) †	115 (21.73)		
No	9 (1.70)	75 (14.17)	61 (11.53) †		
25. Have you ever been diagnosed with a sexually transmitted infection (STI) [*n* = 526]				10.10 **	0.13
Yes	1 (0.19)	21 (3.99)	25 (4.75) †		
No	43 (8.17)	286 (54.37) †	150 (28.51)		

Table 2. *Cont.*

Ask [*n*]	Alcoholic Beverage Consumption			χ^2	*V*
	No	**Without Risk**	**With Risk**		
29. Have you ever been pregnant? [*n* = 521]				9.40 **	0.13
Yes	2 (0.38)	44 (8.44)	38 (7.29) †		
No	41 (7.86) †	262 (50.28)	134 (25.71)		
30. Have you ever had a voluntary termination of pregnancy? [*n* = 519]				0.49 **	0.11
Yes	0	28 (5.88) ✢	29 (6.09)		
No	43	278 (58.45)	141 (29.33)		
31. Have you ever used the morning-after pill to prevent pregnancy? [*n* = 524]				14.94 **	0.17
Yes	19 (3.62)	230 (43.89) †	120 (22.90)		
No or does not respond	23 (4.68) †	80 (15.35)	52 (10.86)		
32. Have you ever been tested for HIV or AIDS? [*n* = 521]				0.39	--
Yes	14 (2.68)	114 (21.88)	64 (12.28)		
No or does not respond	29 (5.56)	194 (37.23)	106 (20.34)		

Abbreviations: χ^2: chi-square test of independence; *V*: Cramer's V. Notes: The question shows the sample size in brackets; the response options show the frequency of cases and the percentage in parentheses; † = higher frequency than expected; ✢ = lower proportion of "Yes" in the "TWR" category compared with "TWOR"; * = $p \leq 0.05$; ** = $p \leq 0.01$.

Table 3 shows that tobacco consumption with a level of dependence was associated with a number between 6 and 10 sexual partners throughout one's life and between 2 and 3 in the last year, as well as with the diagnosis of some type of sexually transmitted infection, having been pregnant, and having had a voluntary interruption of pregnancy, as well as having taken an HIV test. Moderate tobacco use was associated with not using or not remembering having used a condom in the last sexual relationship and the use of the morning-after pill. Finally, not using tobacco was associated with having a maximum of one sexual partner in the last year, using a condom in the last sexual relationship without a diagnosis of an STI, non-pregnancy and non-voluntary interruption of pregnancy, or the use of the morning-after pill.

Table 3. Association between behavior, sexual health, and reproductive health and the risk of tobacco consumption in female university students.

Ask	Tobacco Consumption			χ^2	*V*
	No	**Moderate**	**Dependence**		
12. At what age did you have your first sexual relationship (vaginal or anal)? [*n* = 330]				0.24	--
12 to 16	63 (19.09)	37 (11.21)	8 (2.42)		
17 to 26	125 (37.87)	82 (24.84)	15 (4.54)		
13. Did you use a condom in that first complete sexual relationship? [*n* = 534]				1.37	--
Yes	216 (40.44)	175 (32.77)	23 (4.30)		
No or do not remember	63 (11.79)	47 (8.80)	10 (1.87)		
15. Throughout your life, approximately how many different partners have you had sexual relations with? [*n* = 534]				19.92 **	0.13
1 to 5	199 (37.26)	154 (28.83)	17 (3.18)		
6 to 10	26 (4.86)	32 (5.99)	12 (2.24) †		
11 or more	54 (10.11)	36 (6.74)	4 (0.74)		

Table 3. *Cont.*

Ask	Tobacco Consumption			χ^2	V
	No	**Moderate**	**Dependence**		
17. In the last 12 months, approximately how many different partners have you had sexual relations with? [*n* = 534]				19.50 **	0.13
Zero to one	186 (34.83) †	127 (23.78)	12 (2.24)		
Two to three	57 (10.67)	55 (10.29)	17 (3.18) †		
Four or more	36 (6.74)	40 (7.49)	4 (0.74)		
18. Did you use a condom in your last sexual relationship (vaginal or anal)? [*n* = 529]				5.65 *	0.10
Yes	213 (40.26) †	147 (27.78)	24 (4.53)		
No	65 (12.28)	72 (13.61) †	8 (1.51)		
25. Have you ever been diagnosed with a sexually transmitted infection (STI) [*n* = 526]				44.53 **	0.27
Yes	17 (3.23)	17 (3.23)	13 (2.47) †		
No	261 (49.61) †	200 (38.02)	18 (3.42)		
29. Have you ever been pregnant? [*n* = 521]				18.65 **	0.18
Yes	35 (6.71)	36 (6.90)	13 (2.49) †		
No	238 (45.68) †	182 (34.93)	17 (3.26)		
30. Have you ever had a voluntary termination of pregnancy? [*n* = 519]				20.91 **	0.18
Yes	21 (4.04)	26 (5)	10 (1.92) †		
No	254 (48.94) †	190 (36.60)	18 (3.46)		
31. Have you ever used the morning-after pill to prevent pregnancy? [*n* = 524]				12.79 **	0.15
Yes	175 (33.39)	172 (32.82) †	22 (4.19)		
No or does not respond	100 (19.08) †	49 (9.35)	6 (1.14)		
32. Have you ever been tested for HIV or AIDS? [*n* = 521]				5.97 *	0.10
Yes	93 (17.85)	84 (16.12)	15 (2.87) †		
No or does not respond	181 (34.74)	137 (26.29)	11 (2.11)		

Abbreviations: χ^2: chi-square test of independence; *V*: Cramer's V. Notes: The question shows the sample size in brackets; the response options show the frequency of cases and the percentage in parentheses; † = higher frequency than expected; * = $p \leq 0.05$; ** = $p \leq 0.01$.

The frequency of stress in academic situations "Almost always" or "Always" was associated with two to three sexual partners in the last 12 months, and the frequency "Sometimes" was associated with a maximum of one in the same period (Table 4).

Table 4. Association between behavior, sexual health, and reproductive health and the frequency of stress in academic situations in female university students.

Ask	Stress in Academic Situations			χ^2	V
	Never or Rarely	**Sometimes**	**Almost Always or Always**		
12. At what age did you have your first sexual relationship (vaginal or anal)? [*n* = 330]				0.27	--
12 to 16	12 (3.63)	35 (10.60)	61 (18.48)		
17 to 26	29 (8.78)	72 (21.81)	121 (36.66)		
13. Did you use a condom in that first complete sexual relationship? [*n* = 534]				2.72	--
Yes	55 (10.29)	140 (26.41)	219 (41.01)		
No or do not remember	11 (2.05)	49 (9.17)	60 (11.23)		

Table 4. *Cont.*

Ask	Stress in Academic Situations			χ^2	*V*
	Never or Rarely	Sometimes	Almost Always or Always		
15. Throughout your life, approximately how many different partners have you had sexual relations with? [*n* = 534]				1.78	--
1 to 5	47 (8.80)	132 (24.71)	191 (35.76)		
6 to 10	8 (1.49)	28 (5.24)	34 (6.36)		
11 or more	11 (2.05)	29 (5.43)	54 (10.11)		
17. In the last 12 months, approximately how many different partners have you had sexual relations with? [*n* = 534]				11.97 **	0.10
Zero to one	45 (8.42)	127 (23.78) †	153 (28.65)		
Two to three	9 (1.68)	41 (7.67)	79 (14.79) †		
Four or more	12 (2.24)	21 (3.93)	47 (8.80)		
18. Did you use a condom in your last sexual relationship (vaginal or anal)? [*n* = 529]				0.33	--
Yes	47 (8.88)	140 (26.46)	197 (37.24)		
No	19 (3.59)	49 (9.26)	77 (14.55)		
25. Have you ever been diagnosed with a sexually transmitted infection (STI) [*n* = 526]				4.09	--
Yes	4 (0.76)	12 (2.28)	31 (5.89)		
No	62 (11.78)	175 (33.26)	242 (46)		
29. Have you ever been pregnant? [*n* = 521]				1.79	--
Yes	10 (1.91)	25 (4.79)	49 (9.40)		
No	56 (10.74)	160 (30.71)	221 (42.41)		
30. Have you ever had a voluntary termination of pregnancy? [*n* = 519]				2.35	--
Yes	9 (1.73)	15 (2.89)	33 (6.35)		
No	57 (10.98)	168 (32.36)	237 (45.66)		
31. Have you ever used the morning-after pill to prevent pregnancy? [*n* = 524]				1.11	--
Yes	43 (8.20)	134 (25.57)	192 (36.64)		
No or does not respond	23 (4.38)	52 (9.92)	80 (15.26)		
32. Have you ever been tested for HIV or AIDS? [*n* = 521]				0.08	--
Yes	23 (4.41)	70 (13.43)	99 (19)		
No or does not respond	42 (8.06)	117 (22.45)	170 (32.62)		

Abbreviations: χ^2: chi-square test of independence; *V*: Cramer's V. Notes: The question shows the sample size in brackets; the response options show the frequency of cases and the percentage in parentheses; † = higher frequency than expected; ** = $p \leq 0.01$.

For all cases, the strength of association ranged from moderate to very strong (i.e., Cramer's *V* = 0.10 to 0.27).

3.3. Multiple Correspondence Analysis

The MCA was conducted with *n* = 499 participants, after excluding all those who had responses in the I prefer not to answer category because of its low frequency and its null contribution of information (cf., [61]). Likewise, the academic stress variable (i.e., SISCO) was not considered because of its extremely low contribution (i.e., $cos^2 \leq 0.03$) in previous solutions tested and the detriment that its inclusion caused to obtaining a parsimonious solution. Table 5 shows the eigenvalues and the percentage of variance explained by dimension and cumulative.

Table 5. Eigenvalues and the percentage of variance explained by dimension and cumulative for each of the dimensions estimated in the multiple correspondence analysis.

Dimension	Eigenvalues	Percentage of Variance	Cumulative Percentage of Variance
1	0.24	17.20	17.20
2	0.16	11.54	28.74
3	0.14	9.86	38.60
4	0.12	8.67	47.27
5	0.11	7.86	55.13
6	0.10	7.33	62.46
7	0.09	6.76	69.22
8	0.09	6.19	75.41
9	0.08	5.78	81.19
10	0.08	5.61	86.80
11	0.07	4.98	91.78
12	0.06	4.16	95.95
13	0.04	2.64	98.58
14	0.02	1.42	100.00

An analysis that assessed the parsimony, coherence, and quality of representation of the variable categories with a particular dimension using cos^2 suggested retaining a three-dimensional solution (Figure 1 and Table 6) that explained 38.60% of the variance. Dimension 1: "pregnancy" explained 17.2% of the variance and was best represented by questions 29 (Have you ever been pregnant?) and 30 (Have you ever had a voluntary termination of pregnancy?) of the SBSRHQ. Dimension 2: "number of sexual partners" explained 11.5% of the variance and was best represented by questions 15 (Throughout your life, approximately how many different partners have you had sexual relations [vaginal or anal] with?) and 17 (In the last 12 months, approximately how many different partners have you had sexual relations [vaginal or anal] with?) of the same questionnaire. Finally, Dimension 3: "substance consumption" explained 9.85% of the variance and was best represented by the consumption of alcoholic beverages (AUDIT) and tobacco (C4). Consistent with the above, Figure 2 shows a biplot indicating the correlation between each of the variables with respect to the first two dimensions of the multiple correspondence analysis as follows: questions 29 and 30 with the pregnancy dimension and questions 15 and 17 with the number of sexual partners dimension, in all cases of the SBSRHQ.
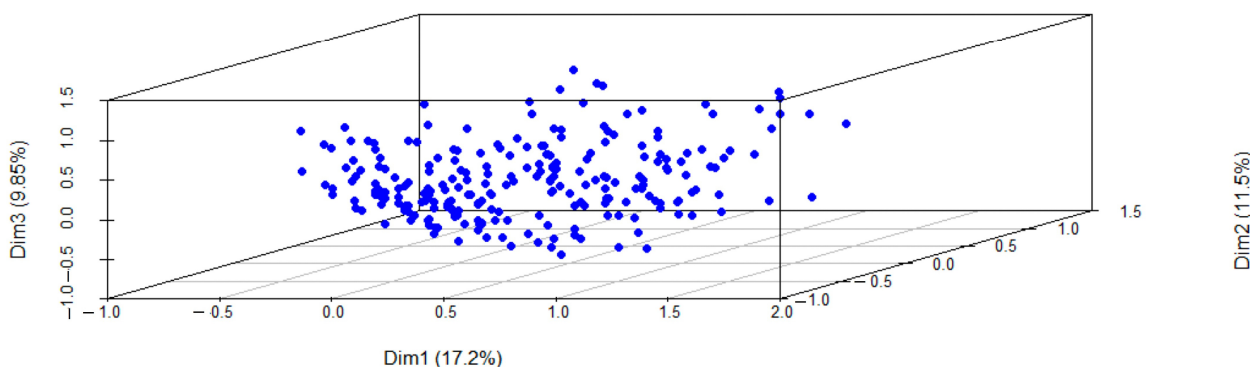
Figure 1. Multiple correspondence analysis with the dimensions "pregnancy" (Dim 1), "number of sexual partners" (Dim 2) and "substance use" (Dim 3).

Table 6. Cos^2 of the variables per dimension retained in the multiple correspondence analysis.

Dimension 1	Cos^2	Dimension 2	Cos^2	Dimension 3	Cos^2
Q30	0.51 ***	7	0.64 ***	C4	0.28 ***
Q29	0.44 ***	Q15	0.58 ***	AUDIT	0.23 ***
Q15	0.28 ***	Q29	0.13 ***	Q29	0.22 ***
Q17	0.28 ***	Q30	0.12 ***	Q30	0.20 ***
C4	0.24 ***	AUDIT	0.08 ***	Q15	0.17 ***
AUDIT	0.22 ***	Q32	0.02 ***	Q31	0.12 ***
Q25	0.18 ***	C4	0.03 ***	Q18	0.09 ***
Q32	0.13 ***			Q17	0.06 ***
Q31	0.09 ***				
Q18	0.03 ***				

Notes: *** $p < 0.001$.
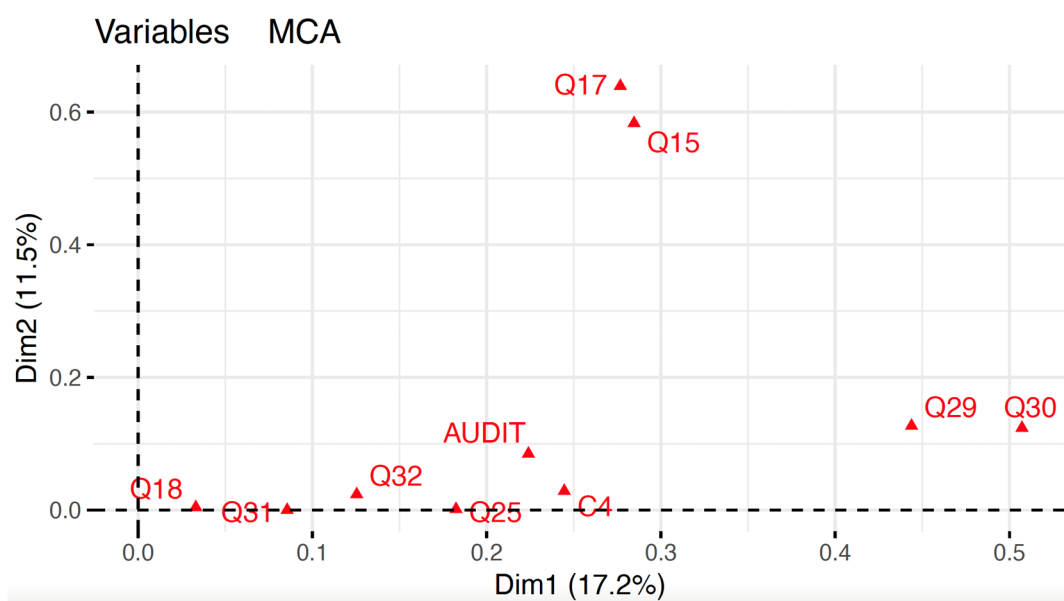
Figure 2. Correlation between variables and the dimensions "pregnancy" (Dim 1) and "number of sexual partners" (Dim 2).

The biplot in Figure 3 shows the discrimination capacity of the variables included in the first two dimensions of the multiple correspondence analysis performed. The first dimension distinguishes between affirmative and negative responses to specific questions related to pregnancy. For example, in the SBSRHQ, on the right side of the axis, questions 25, 29, and 30 to 32 were answered affirmatively, while on the left axis, they were answered negatively, with an inverse pattern for question 18. The consumption of alcoholic beverages with risk and moderate consumption and dependence on tobacco were also found on the right side of this axis, contrary to the location of their opposites, particularly the consumption of alcoholic beverages without risk and non-consumption of tobacco. Although the categories of the questionnaires on substance consumption (i.e., AUDIT and C4) were close to the origin, indicating a lower contribution to Dimension 1, and the category "Does not take" was positively associated with Dimension 2, it should be considered that these have their own dimension (i.e., Dimension 3) that was not appreciated in the biplot. Moreover, in Figure 3, the second dimension showed an association between the categories that imply a greater number of sexual partners throughout life (i.e., 11 or more; Q15) and in the last year (i.e., 4 or more; Q17) and discriminated between the category of 2 to 3 sexual partners in the last year (i.e., Q17).
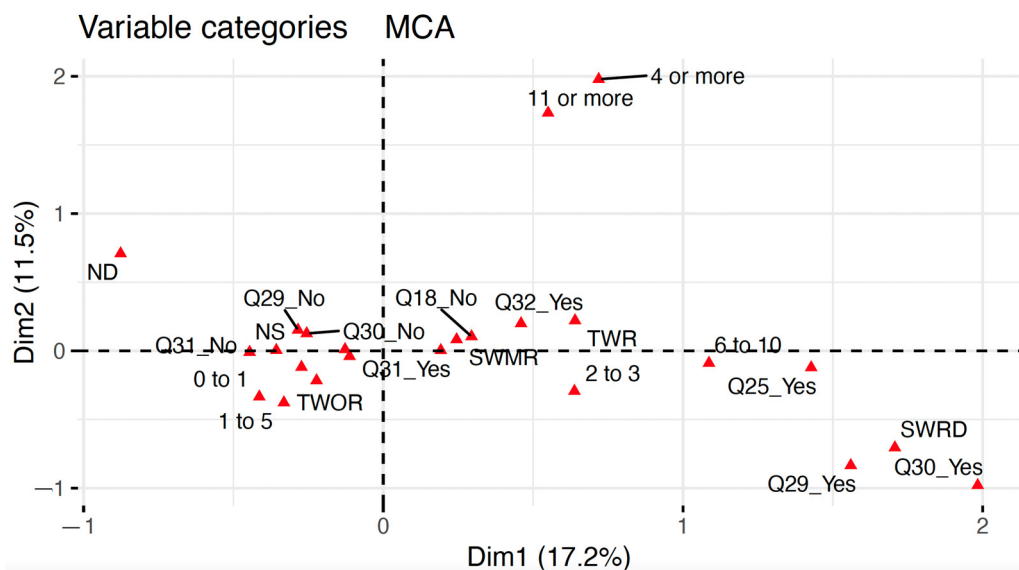
Figure 3. Discrimination capacity for the variables included in the dimensions "pregnancy" and "number of sexual partners".

It shows five different profiles for the participants, those with (1) 11 or more sexual partners throughout their lives and 4 or more in the last year; (2) dependence on tobacco consumption, pregnancy, and voluntary interruption of it; (3) 6 to 10 partners throughout their lives and a diagnosis of some STI; (4) 2 to 3 sexual partners in the last year, consumption of alcoholic beverages with a risk level and moderate dependence on tobacco consumption, without the use of a condom in their last sexual relationship, use of the morning-after pill, and taking an HIV test; and (5) consumption of alcoholic beverages without risk, without tobacco consumption, 1 to 5 sexual partners throughout their lives and a maximum of 1 in the last year, the use of a condom in their last sexual relationship, without a diagnosis of some STI, without taking an HIV test or use of the morning-after pill, and without pregnancy or voluntary interruption of it (Figure 4).
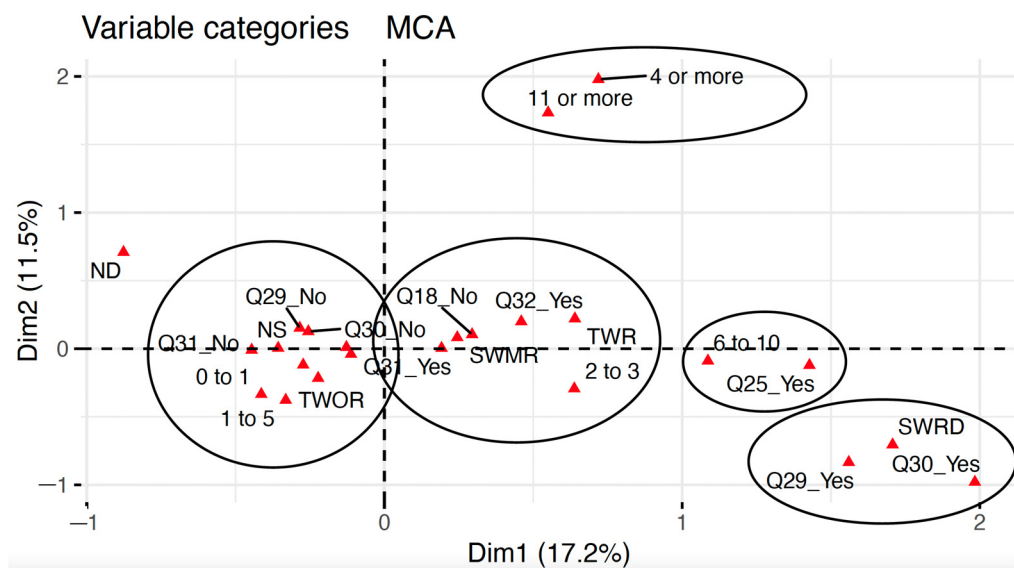
Figure 4. Profiles based on point clouds grouped by Euclidean distances that differentiate specific subgroups for the participants.

The results of the ellipse strategy with 95% confidence areas (cf., [78]) for the AUDIT variable categories are shown in Figure 5. The subgroups represented are "Take with Risk"

(i.e., TWR; red), "Take without Risk" (i.e., TWOR; green), and "No Drinking" (i.e., ND; blue). The ND subgroup is separated from the other two, covering the left part of the axis of Dimension 1, "pregnancy", specifically for the negative responses to the questions related to the topic (except for Q18). Furthermore, their variability is lower, indicating that the characteristics of this subgroup are more homogeneous. The TWR and TWOR subgroups show a wide overlap in the two-dimensional space, especially on the right axis of Dimension 1, "pregnancy". This indicates that their members share similar characteristics, specifically in the affirmative responses related to the dimension (except for Q18). However, there is greater variability in the TWR subgroup, whose members extend towards the upper axis of Dimension 2, "number of sexual partners", being those who have the highest number of these throughout their lives and in the last year. This last aspect indicates a minor but important distinction between the members of both subgroups.
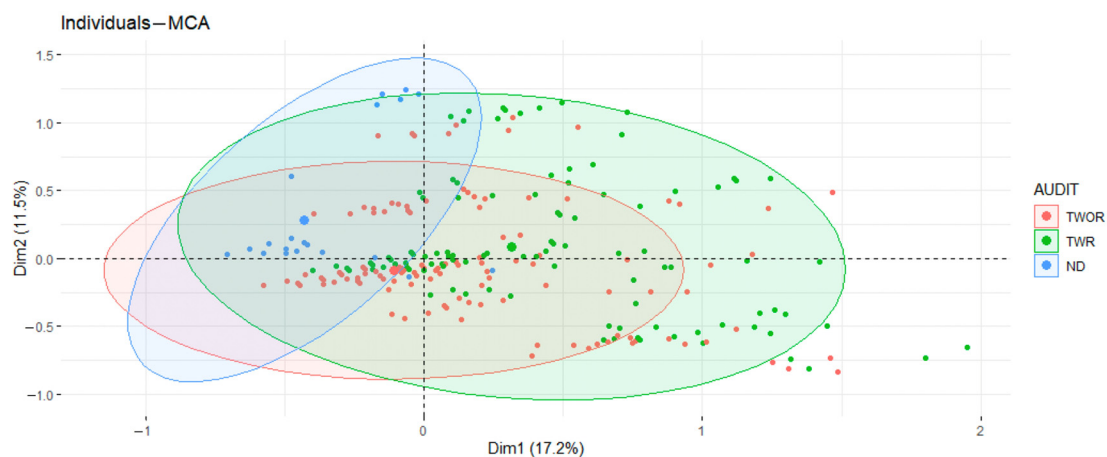
Figure 5. Profiles based on ellipses with 95% confidence from the consumption of alcoholic beverages.

Using the same strategy but for the categories of variable C4, the following results were obtained (Figure 6). The subgroups represented are "Does not smoke" (i.e., NS; red), "Smokes with moderate risk" (i.e., SWMR; green), and "Smokes with risk of dependence" (i.e., SWRD; blue). The SWRD subgroup is largely separated from the other two, mainly covering the right side of the axis of Dimension 1, "pregnancy", with positive responses to the questions related to the topic, except for Q18. It is the largest ellipse and has the greatest variability, which indicates a wide heterogeneity among its members, that is, exclusive but varied characteristics for this subgroup. The previous interpretation is reinforced by the fact that the NS and SWMR subgroups show extensive overlap in the two-dimensional space. However, the variability in the NS subgroup is lower and is mainly oriented towards the left axis of Dimension 1, "pregnancy", with negative answers to its questions, except for Q18. On the other hand, the green ellipse, corresponding to the SWMR subgroup, shows greater variability that extends in both directions of Dimension 1 and Dimension 2, "number of sexual partners". This indicates a pattern of contrasting answers regarding pregnancy and the number of sexual partners among its members. An interpretation that integrates the analysis by ellipses for the AUDIT and C4 variables suggests that those participants who consume tobacco with moderate and dependent risk and who consume alcoholic beverages at a level without risk and with risk are more likely to give affirmative answers to the questions regarding the topic of pregnancy (except for Q18) and have had a greater number of sexual partners throughout their lives and in the last year. This is in comparison with those participants who do not smoke and do not consume alcoholic beverages.
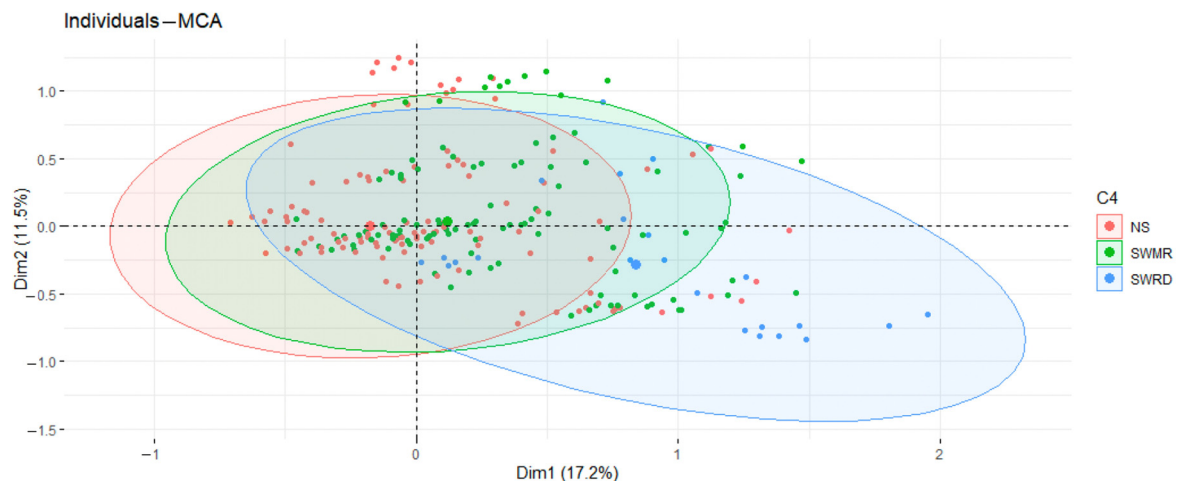
Individuals—MCA

Figure 6. Profiles based on ellipses with 95% confidence from tobacco consumption.

4. Discussion

The aim of this study was to identify specific profiles for university women who associate RSBs with alcohol consumption, the level of tobacco consumption, and the frequency of academic stress. A multiple correspondence analysis yielded a coherent and parsimonious solution that retained three dimensions that explained 38.60% of the variance. Dimension 1 addressed pregnancy-related issues and discriminated between participants whose RSBs did or did not promote pregnancies, possibly unwanted, as well as STI diagnosis and HIV testing. Dimension 2 addressed the number of sexual partners, discriminating between participants with a greater or lesser number of them throughout their lives and in the last year. Dimension 3 referred to the consumption of substances, specifically alcoholic beverages and tobacco, discriminating between non-consumption and different levels of consumption. Each dimension had variables that showed an acceptable cos^2 and were easy to interpret conceptually (i.e., Dimension 1, Q30 = 0.51; Dimension 2, Q17 = 0.64; and Dimension 3, AUDIT = 0.23). Contrary to expectations, the inclusion of the academic stress variable was not appropriate since its contribution evaluated by cos^2 was close to 0 (i.e., ≤ 0.03), in addition to the fact that the inclusion of this variable compromised the parsimony of the solution and complicated its interpretation. The percentage of variance explained is also acceptable, considering that according to Díaz and Morales [80], the dimensions obtained through a multiple correspondence analysis do not explain large percentages of the total variance.

Once the three-dimensional solution for the multiple correspondence analysis was obtained, two approaches were tested for the creation of profiles. Following a point cloud strategy based on the distance between categories in a two-dimensional plane or biplot (cf., [76]), the following profiles were distinguished:

- Active Promiscuous: Eleven or more sexual partners throughout life and four or more in the last year.
- Vulnerable Reproductive Health: Dependence on tobacco consumption, with at least one pregnancy and a voluntary interruption of the pregnancy.
- STI Risk: Between 6 and 10 sexual partners throughout their lives, with a diagnosis of at least one sexually transmitted infection (STI).
- Moderate Risk Behaviors: Two to three sexual partners in the last year, alcohol consumption at a high-risk level, and moderate dependence on tobacco. Did not use a condom in their last sexual relationship, used the morning-after pill, and had an HIV test.
- Conservative and Prudent: Between one and five sexual partners throughout their lives, with a maximum of 1 in the last year. Consumption of alcoholic beverages without reaching risk levels, does not smoke. Used a condom in their last sexual

relationship, were not diagnosed with any STI, and did not take an HIV test or use the morning-after pill. No pregnancy and, therefore, no voluntary interruption of pregnancy.

The strengths of this strategy are that it yields coherent, intuitive, parsimonious, and useful profiles as an initial exploration of the data. However, since it is based on an appreciation of the closeness between categories, different researchers may have different appreciations of this. In this sense, a strategy of ellipses with 95% confidence was also used, which formed subgroups based on the establishment of centroids with the categories for the consumption of alcoholic beverages and tobacco consumption (cf., [78]). The profiles thus obtained are consistent with those described above and facilitate the integration of some of them and t a parsimonious solution as follows:

- Higher probability of RSBs: Those with tobacco consumption with moderate risk and dependence, who consume alcohol without risk and with risk, are more likely to have been pregnant, to have had a voluntary interruption of pregnancy and a diagnosis of a sexually transmitted infection, to have not used a condom in their last sexual relationship, and to have taken an HIV test. However, moderate alcohol consumption tends to lead to a higher number of sexual partners throughout life and in the last year, while tobacco consumption with moderate risk and the number of sexual partners show greater variability.
- Lower probability of RSBs: Similar to the Conservative and Prudent profile detected by the previous strategy, particularly because of not consuming tobacco and not consuming alcoholic beverages. These individuals tend to avoid risky sexual behaviors that may lead to pregnancy, STIs, and voluntary interruptions of pregnancy.

The advantages of this last strategy are the clear delineation of the profiles with a confidence measure, allowing for a more precise interpretation that reinforces the robustness of the conclusions and minimizes the subjectivity in the grouping of the categories. However, the interpretation is more complex and less direct. Despite the above, the profiles detected by both approaches are consistent with each other. Furthermore, while point clouds present a more accessible interpretation, this can be complemented by ellipses, which, despite increasing complexity, integrate more information.

Regarding the descriptive statistics obtained, we found that 91.7% of the students consumed alcohol, consistent with the results reported by Angelini et al., and one in three presented risky consumption [81]. In Mexico, based on a latent class analysis, 36.7% of students with excessive alcohol consumption were reported [82]. These data are within the range reported in studies with female populations, being lower than that of some (e.g., [24,81]), although higher than that of others [22,83]. Risky alcohol consumption is observed in the MCA based on the point cloud strategy, where we see a profile called "Moderate Risk Behaviors" in which there is a risky consumption of alcoholic beverages associated with not using a condom in their last sexual relationship and the use of the morning-after pill. It is also observed in the MCA through the ellipse strategy, in the Higher probability of RSB profile, where alcohol consumption is related to the incidence of unwanted pregnancies and interruption of pregnancy. This is in line with the consequences previously noted in the literature, in the case of having sexual relations after drinking alcohol [28–31,34–36]. In this regard, it is important to say that risky alcohol consumption is dangerous for students, not only because of its association with RSBs [35,37,38] but also because it is a risk factor for liver problems and various types of cancer [17]. In addition, it can negatively affect decision-making. Heavy alcohol consumers have been observed to be influenced by a dysfunction in the reward system, where both hypersensitivity [84] and hyposensitivity have been discussed as risk markers [84,85], ignoring other long-term aspects. In general, adverse effects have been found in prefrontal areas of the brain related to decision-making [86,87]. In addition to excessive alcohol consumption, irregular condom use and the reported incidence of pregnancies may be due to reduced sexual assertiveness that allows students to negotiate their use with their partners [88]. In addition, the

perception of being infected with sexually transmitted diseases has been observed to be low, especially in stable relationships; in particular, women tend to protect themselves less with their stable partners and opt for other methods such as birth control pills [89–91], behavior consistent with a greater concern for avoiding pregnancies than for avoiding STIs. Therefore, it seems that women in formal unions only seek to postpone their fertility, but are free from contracting STIs [92], which questions the effect of university sexual health campaigns. The consumption of the morning-after pill, as well as that of voluntary termination of pregnancy, is higher in this study than that reported in previous studies [93], but lower than in others carried out in Mexico, in which 77.3% use of emergency contraception is reported [94]. In addition to its association with alcohol consumption, it could be related to inadequate prevention behavior that considers the long-term consequences of their decisions, as well as ignorance about how they work, underestimating the risks, as has already been reported among university students [94,95].

Consistent with previous data, tobacco consumption was lower in this population [81], but 47.7% of the students consumed tobacco, which has been associated with a greater number of sexual partners in the last year [11–42,96]. This is consistent with what was found in the MCA using the point cloud strategy, since in the STI Risk profile, tobacco consumption was detected in conjunction with the presence of STIs. In the case of the Moderate Risk Behaviors profile, alcohol consumption was presented together with tobacco consumption accompanied by the lack of using condoms, as well as the use of the morning-after pill. Also in the MCA, through the ellipse strategy, the presence of STIs, pregnancies, and pregnancy termination accompanied by alcohol and tobacco use was observed. These data coincide with what has been reported in the literature when discussing polydrug use (c.f., [11,97]). To explain the association between tobacco consumption and RSB, we can point to studies that indicate that women may smoke based on the desire to project greater attractiveness and social acceptance [98,99].

It is curious that the Conservative and Prudent profile obtained through the point cloud strategy contains alcohol consumption—although this is not risky. Thus, we can speak of an adaptive profile, because, although its members have active sexual lives, they maintain sexual and reproductive health practices that have allowed them to avoid unwanted pregnancies and the spread of STIs.

The relationship between RSB and alcohol and tobacco use may also be mediated by sociocultural factors not examined in this study. Iwamoto et al. [13] suggested that women's greater sexual freedom and social empowerment may cause casual sex and a lack of sexual fidelity to be viewed positively or that excessive alcohol consumption is a way to gain social attention. Consistent with this interpretation, alcohol consumption and sexual behavior in university women has been explained by adherence or detachment to certain norms referred to as "feminine" [100] since it is clear that we live in a sex–gender system, heteronormative about the feminine and the masculine. So, from this perspective, drinking or consuming substances, or any subversive behavior, distances a woman from the roles that she should fulfill, in mature adulthood, regarding being a mother, wife, caregiver, etc. [101]. In the case of young adults, Iwamoto et al. [13] identified that adherence to rules such as sexual fidelity or appearing "sweet" and "kind" was negatively associated with excessive alcohol consumption, while a greater investment in appearance was positively associated with this and its associated problems (i.e., RSBs). In this regard, an interpretation based on behavioral analysis would propose that the emergence and maintenance of drinking behavior produces a short-term pleasurable reinforcement that adds to the social reinforcement they receive from the approval of their peers for deviating from the norm. There are even articles that point out the existence of the term "social consent", which refers to the influence of friendships in challenging gender norms and engaging in risky behavior at the level of consumption or sexual behavior [102].

4.1. Practical Implications of This Work

One of the strengths of this study is the use of multivariate and multidimensional analysis, such as the MCA, which allowed for the integration of variables that are generally analyzed in isolation using bivariate statistics. In addition, the use of two additional strategies (i.e., point clouds and ellipses from centroids and a 95% confidence interval) provided a broader understanding of the variables that contribute to risk behaviors in university women. The above provides a conceptual and empirically relevant basis for the design of strategies that address this vulnerable group.

4.2. Limitations

This study has a number of limitations. Being descriptive, it does not provide information on possible causal relationships for RSBs, while its cross-sectional design does not allow for the evaluation of changes that may occur in students throughout their academic training. Although the sample is heterogeneous, as it was not obtained through random sampling, the external validity of the data is compromised. On the other hand, not recording the IP address of the respondents could enable the duplication of responses, even with control methods such as the automatic recording of the date and time of the response. Future studies should evaluate aspects such as impulsivity, sexual assertiveness, sensation seeking, and even the "norms" proposed as feminine by Brady et al. [100–102].

5. Conclusions

In conclusion, alcohol and tobacco consumption are associated with various risky sexual behaviors in Mexican university women. We suggest that sexual and reproductive health campaigns in higher education institutions be strengthened, with a focus on the female population in order to address their specific needs. For example, the generation of elective subjects that favor the prevention of RSBs. Regarding academic stress, although it was not relevant for the multiple correspondence analysis, there was an association between a lot of stress and a greater number of sexual partners, which could be associated with maladaptive coping strategies [18]. This suggests substance use or the presence of RSBs to cope with such stress, so further analyses should be constructed to determine whether stress plays a greater role in RSBs.

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