

Harmful Consumption and Alcohol Dependence in Peruvian University Students with Body Dissatisfaction-An Observational Study

Carmen Indira Serrano de La Cruz¹, Priscilla Nicole Flores Olivares¹, Joel Alejandro Barreto Araujo², Sebastian Coronel Arias¹, Victor Serna Alarcón¹, Raúl Hernán Sandoval Ato¹ and Christian Alberto Rodriguez Saldaña^{3*}

¹Department of Human Medicine, Antenor Orrego Private University, Trujillo, Peru

²Department of Medicine, Philadelphia College of Osteopathic Medicine, Philadelphia, USA

³Department of Medicine, Cesar Vallejo University, Trujillo, Peru

Abstract

The abuse of alcoholic beverages is associated with complex mental health disorders, including Body Dissatisfaction (BD); that form a vicious circle that is very difficult for the person who suffers from them to overcome. The objective of our study was to evaluate the association between the abuse of alcohol consumption and the degree of body dissatisfaction in young women, in four universities in Northern Peru. An analytical cross-sectional study was carried out with a sample of 491 university students. Body dissatisfaction and alcohol consumption was analysed using the Body Shape Questionnaire (BSQ) and the Alcohol Use Disorders Identification Test (AUDIT), a test designed by the World Health Organization (WHO) as a simple screening method for its specific use in primary care settings, using the score greater than six that predicts harmful use or alcohol dependence. The prevalence of harmful consumption or alcohol dependence was higher in those women who presented body dissatisfaction with respect to the group without concern for their image, adjusted for type of university and family structure. (Adjusted PR: 2.33, 95% CI 2.10-2.57). In turn, university students who belonged to a reconstituted family obtained 6.82 more points (95% CI: 4.47 to 9.17) in the AUDIT test. Young women with body dissatisfaction are twice as likely to have harmful use/higher alcohol dependence even in single-parent or reconstituted families.

Keywords: Body dissatisfaction • Alcohol drinking in college • Alcohol abuse

Introduction

Mental health in university students and adolescents has taken on vital importance in recent years [1]. The transition between adolescence and maturity coincides with the beginning of university life. In this period, the disagreement of the self-perception of body image (Confidence Interval) and alcohol abuse appears [2].

It has been proposed that the abuse of alcoholic beverages leads to sedentary activities, excessive consumption of calories and consequently to body dissatisfaction (CI) [3]; alcohol abuse has also been described as relief from such disagreement [2]. This association is not totally clear; some studies do not find an association between alcohol abuse and body dissatisfaction [4].

The objective of our study was to evaluate the association between the abuse of alcohol consumption and the degree of body dissatisfaction and to identify the possible predictive variables of these, in young university women from Northern Peru.

Materials and Methods

An analytical cross-sectional study was carried out on young women from four universities, located in Piura, Peru, from February to April 2022. The inclusion criteria were being between 18 and 25 years of age, being enrolled in any faculty of the University of Origin, and agree to participate

through informed consent. We excluded those participants with medication that alters wakefulness or sleep, with a diagnosis of Down syndrome, a history of facial and/or body burns, with some intellectual disability or cognitive impairment that prevents full comprehension of the questionnaire, and those who filled out the questionnaire less than 80% of the main questionnaire.

Permissions were requested from the authorities of the universities to carry out the data collection. The invitation was extended to the students through a letter of introduction addressed to the rectors of the different universities of Piura to be part of the study. Those students who voluntarily agreed to participate were evaluated to confirm compliance with the selection criteria. The objective of the study, the correct completion of the instrument and the informed consent were explained. The sample size was 491 students, considering a 95% confidence level, an expected proportion of 30% and an accuracy level of 5%; the sampling was non-probabilistic [5].

Measures

For the purpose of the study, a data collection instrument divided into three sections was used. The first section collected the variables age, type of university and type of family.

In the second section, body dissatisfaction was measured using the Body Shape Questionnaire (BSQ). This questionnaire is made up of 34 items that address the perception of body image. Each item includes never, rarely, ever, often, very often, and always as answers, with scores from 1 to 6, respectively. The maximum score is 204, with a cut-off point greater than

***Corresponding Author:** Christian Alberto Rodriguez Saldaña, Department Medicine, César Vallejo University, Trujillo, Peru, E-mail: crodriguezsa13@ucvvirtual.edu.pe

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or equal to 110 points, which indicates body dissatisfaction, demonstrating rigid indicators of convergent validity [6]. The BSQ was validated in Peru in a sample of young university students, with high reliability due to internal consistency [7].

The last section measured alcohol consumption using the Alcohol Use Disorders Identification Test (AUDIT). This test presents the responses on a Likert-type scale, made up of a total of 10 items that evaluate recent alcohol consumption, symptoms of alcohol dependence, and alcohol-related problems. It was designed by the World Health Organization (WHO) as a simple screening method for specific use in primary care settings. World Health Organization the score ranges from 0 to 40 [8]. A score greater than six predicts harmful use or alcohol dependence [9]. AUDIT has proven to be a highly reliable instrument, in our study we obtained a Cronbach's alpha of 0.98 [10].

The data was processed using the statistical package Stata v.15.1. The normal distribution of the variables was analysed using the Kolmogorov-Smirnov test. Absolute and relative frequencies, medians, and Interquartile Ranges (IQR) were obtained. The non-parametric test (U-Mann Whitney) was used to contrast the hypotheses. The predictive association of the variables was estimated using multiple linear regression with adjustment for generalized least squares (White's robust standard errors). The Prevalence Ratios (PR) were found using logistic regression adjusting for covariates, with 95% confidence intervals (95% CI) and a significance level established at a p value of less than 0.05.

Results

Population characteristics

Of a total of 50,576 students enrolled in four universities in Northern Peru, 500 university students were approached, 9 participants were excluded for not meeting the inclusion criteria, and a total of 491 female students entered the study as shown in Figure 1. Among the included students, the median age (IQR) was 21 (20-22) years, 76% belonged to private sector universities and 37% reported belonging to a non-nuclear family.

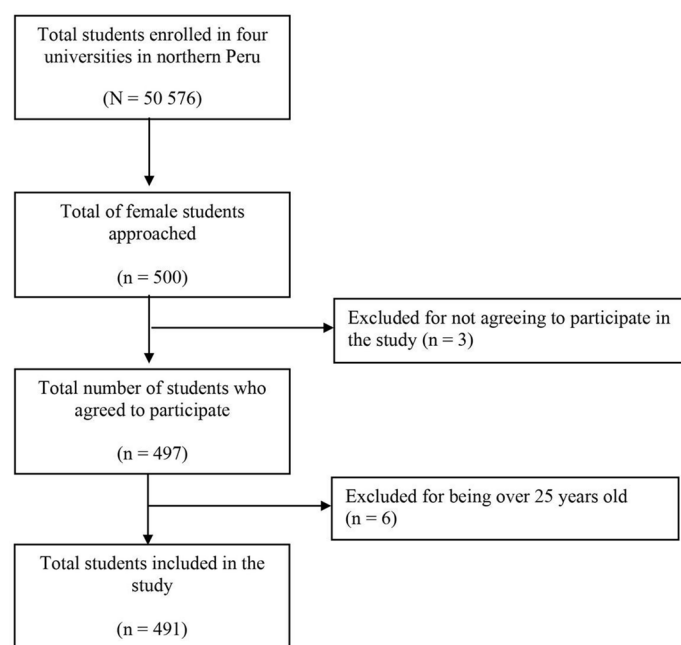


Figure 1. Study participants inclusion flowchart.

The median score of the AUDIT test (IQR) was 8 (3-35) points and the median score of the BSQ scale (IQR) was 139 (86-199) points. The prevalence of marked concern for their physical appearance and probable

alcohol dependence was 49.5% and 36.9%, respectively as shown in Table 1.

Table 1. Risky consumption of alcohol and body dissatisfaction in university students from four Universities in Northern Peru.

Classification	n (%)
Age (years)*	21 (20-22)
University	
Public	116 (23.6)
Private	375 (76.4)
Family type	
Nuclear	309 (62.9)
Single-parent	82 (16.7)
Reconstituted	100 (20.4)
Body dissatisfaction	
No concern	104 (21.2)
Mild concern	92 (18.7)
Moderate concern	52 (10.6)
Marked concern	243 (49.5)
BSQ score*	139 (86-199)
Alcohol risk consumption	
Abstinence	20 (4.1)
Occasional consumption	212 (43.2)
Risk consumption	60 (12.2)
Harmful consumption	18 (3.6)
Alcohol dependence	181 (36.9)
Audit score*	8 (3-35)

Note: *: Median (IQR); BSQ: Body-Shape Questionnaire; AUDIT: Alcohol Use Disorders Identification Test.

Risk of alcoholism and body dissatisfaction

The median of the BSQ score to assess body dissatisfaction was higher in students from public universities (95% CI: 166.5 (94-204); p=0.005), coming from a single-parent/reconstituted family (95% CI: 182.5 (116-203); p=0.001), and when there was probable harmful consumption of alcohol (95% CI:199 (166-204); p=0.001), as shown in Table 2; likewise, the BSQ score increased as risky alcohol consumption increased, showing a proportional relationship between both variables (X²=285.072; p=0.001) as shown in Figure 2.

Table 2. Bivariate analysis of the scores on the BSQ scale and the AUDIT test for risk of harmful alcohol consumption and body dissatisfaction.

Variable	BSQ*	p value ^a	AUDIT*	p value ^a
University				
Public	166.5 (94-204)	0.005	16 (4-40)	0.008
Private	135 (84-193)	-	8 (3-32)	-
Family type				
Nuclear	114 (77-179)	0.001	6 (2-17)	0.001
Single-parent / reconstituted	182.5 (116-203)	-	31 (8-40)	-
AUDIT ±				
No harmful consumption or dependence	89 (66-119)	0.001	-	-

Harmful consumption / dependence	185 (123-203)	-	-	
BSQ*				
No concern	-	-	3 (1-7)	0.001
Body dissatisfaction	-	-	31 (8-40)	-

Note: *: Median (IQR); †: AUDIT; cut-off point : 6; ‡: BSQ; cut-off point : 110; °: U de Mann-Whitney test.

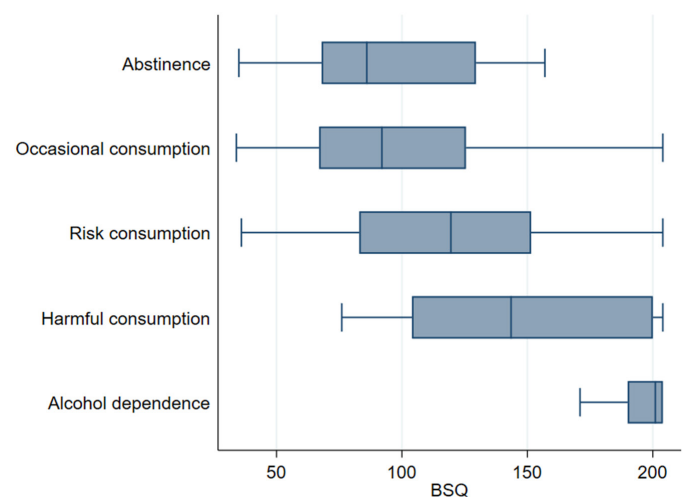


Figure 2. Distribution of the BSQ scale score according to the category of alcohol risk consumption in university women.

Note: Kruskal-Wallis test for independent samples.

Risk factors associated with harmful consumption or alcohol dependence

In the university women evaluated, the prevalence of harmful consumption or alcohol dependence was higher in those who presented body dissatisfaction with respect to the group without concern for their image (crude PR: 2.51; 95% CI 2.28-2.76). This association was slightly attenuated after adjusting for university and family type (adjusted PR: 2.33, 95% CI 2.10-2.57) as shown in Table 3.

Table 3. Multivariate analysis of harmful alcohol consumption/alcohol dependence in young women from four Universities in Northern Peru.

Variable	Frequency of outcome by category n (%)	Harmful consumption dependence (alcohol)			
		PR crude (95% CI)	p value	PR adjusted ‡ (95% CI)	p
Body dissatisfaction					
No	68 (35.2)	Ref.		Ref.	
Yes	246 (82.6)	2.51 (2.28-2.76)	<0.001	2.33 (2.10-2.57)	<0.001
Family type					
Nuclear	161 (52.1)	Ref.		Ref.	
Single-parent	62 (75.6)	1.48 (1.29-1.71)	<0.001	1.27 (1.13-1.43)	0.003
Reconstituted	91 (91)	1.69 (1.51-1.89)	<0.001	1.40 (1.27-1.55)	<0.001

Note: PR: Prevalence Ratio; ‡: PR adjusted for BSQ categories and family type.

Likewise, the prevalence of alcohol consumption or dependence in the participants who reported belonging to a reconstituted family was higher than those of a nuclear family, this value being statistically significant after adjusting for university and the BSQ scale (adjusted PR: 1.40; 95% CI

1.27-1.55) as shown in Table 3. Finally, no association was found between public or private sector universities and the risk of alcohol consumption or dependence in the adjusted analysis.

Through linear regression analysis, it was found that for each point that the score on the BSQ scale increases, the AUDIT test score increases by an average of 0.21 points (95% CI: 0.19-0.22), after adjusting for type of family. This value was statistically significant as shown in Table 4. In turn, the university students who belonged to a reconstituted family obtained 6.82 points more (95% CI: 4.47-9.17) in the AUDIT test, compared to those who were part of a nuclear family, this being statistically significant as shown in Table 4.

Table 4. Impact on the AUDIT test score by the BSQ scale score and family structure.

Variable	AUDIT score*			
	β crude (95% CI)	p value	β adjusted † (95% CI)	p value
BSQ (score)	0.22 (0.21-0.23)	<0.001	0.21 (0.19-0.22)	<0.001
Family type				
Nuclear	Ref.	-	Ref.	-
Single-parent	9.49 (5.78-13.20)	<0.001	3.79 (1.49-6.10)	<0.001
Reconstituted	14.53 (11.28-17.83)	<0.001	6.82 (4.47-9.17)	<0.001

Note: *: Linear regression with generalized least squares adjustment (White's robust standard errors); R2: 58%; †: β adjusted for family type and BSQ score.

Discussion

In our study we found that more than half of the participants had moderate or extreme perceived body dissatisfaction, with an overall median of 139 points on the Body Shape scale. These results are similar to those reported in the literature using comparable evaluation criteria [3]. The behaviour of this variable was especially affected by the risk of alcoholism in university students. The prevalence of harmful consumption and probable dependence on alcohol rose to approximately 40%, this behaviour being linear and proportional to the body dissatisfaction in the participants. For this finding, we found previous studies that share results demonstrating the same association [11]. Thus, additional evidence is generated in the relationship of affection due to alcoholic addiction in young women with a negative perception of their own image, contrary to some reports that mention not finding it [4,12].

Within the Peruvian reality, during the Coronavirus pandemic, body dissatisfaction was found in 43.6% of the women surveyed with the Body-Shape scale, associated with depressive symptoms [13]. Comparatively, another study carried out in Lima-Peru, 17.3% of adolescent women presented dissatisfaction with body image, finding no association with alcohol use [14].

Despite this, and taking into account the differences in age and psycho-socio-cultural factors between studies, the coherent association between body dissatisfaction and depression allows us to propose alcoholism as a third variable in an associative model. Thus, those university students with a devaluation of their own image will have a tendency towards depressive symptoms, resulting in a probable excessive consumption of alcoholic beverages as a means to mitigate these negative sensations.

In our study we found that the prevalence of harmful consumption or alcohol dependence in university students with body dissatisfaction was higher than in those who did not show concern, with an increase of 0.21 points in the AUDIT test with each point on the BSQ scale. In contrast, a study carried out in Brazil that included adolescent participants of both sexes found a non-significant association between both variables [4]. In relation

to these results, Andrew et al. found that negative self-image assessment was statistically associated with total alcohol consumption in the AUDIT test [11]. Psychological stress as a mediator between body dissatisfaction and the drive for thinness is an important part of understanding the results that we have presented [15,16]. Thus, those university students with a higher score on perceived stress scales had a higher risk of alcohol consumption, evaluated with the AUDIT test [16].

For its part, we found that the type of reconstituted family presented a significantly greater association with harmful consumption or alcohol dependence and an increase of 6.82 points in the AUDIT test, compared to nuclear families. In the European reality, the reconstituted family structure compared to the nuclear ones shows a probability odd of 2.01 for the frequency of drunkenness [17].

Within a cohort, it was found that belonging to an intact family structure for fifteen years was associated with a lower risk of alcohol use disorder in their offspring, compared with those children who were not exposed [18]. The different family formulas other than the nuclear one have been found to be related to adverse experiences during personal development in childhood and adolescence, which could explain the findings derived from our analysis [19].

We reinforce the idea that, during the different stages of development, the constant change resulting from adaptation to the environment in which we operate results in a period susceptible to changes in our own perceptions and substance abuse that has been shown to be harmful to health [20]. It is a priority reality to be constantly observed and evaluated. Furthermore, the associative dynamism of concepts that appear throughout development such as body dissatisfaction and depressive symptoms has been demonstrated, suggesting that they are not stable relationships in one direction and over time [21]. Therefore, we suggest that future studies incorporate the associative dynamism of the predictive variables of alcoholism in order to generate intervention strategies that take this characteristic into account in order to have a subsequent impact on addiction to alcoholic beverages.

Conclusion

The present study only allows us to analyse body dissatisfaction and the type of family structure as associated and not causal variables of the harmful consumption of alcohol and alcohol dependence, however, being carried out in four universities with a large sample, it allows us to extrapolate results to our reality. Our research addresses a subject of vital importance that is scarcely studied in Peru and allows us to be a stepping stone for the start of screening for harmful alcohol consumption within universities.

Declaration

Ethical approval

This article was approved by the ethics committee of the Antenor Orrego Private University with code No. 3335-2016-R-UPAO.

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Conflict of interest

The authors report there are no competing interests to declare.

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