

Perceived discrimination and alcohol consumption in an indigenous population

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ABSTRACT

Introduction. Indigenous populations are considered a vulnerable minority and have characteristics such as poverty, difficulties to access food, housing, and educational backwardness; these conditions make them prone to alcohol consumption problems. Dependence on alcohol consumption probably arises as a symbol of protest, challenge, and response to social anguish, which has in turn repercussions in marginal population sectors that have conditions of fragility due to exploitation and discrimination, such as indigenous people.

Objective. To know the effect of perceived discrimination on alcohol consumption in Mexican indigenous population. **Method.** Research design was descriptive, correlational check-model, with a sample of 362 adults from two indigenous communities. **Results.** A simple linear regression model was performed, which shows a significant effect in the entire model ($F_{[248]} = 78.312, p = .001$), which explains 49% of the variance of alcohol consumption. A significant positive influence was also found from the perceived discrimination variable ($\beta = .626, p < .001$) on alcohol consumption. **Discussion and conclusion.** The studied indigenous communities had characteristics that the literature highlights as risk factors for developing addictive behaviors of alcohol consumption. These results coincide with those of the National Commission for the Development of Indigenous Peoples. Indigenous population present discrimination problems that are associated with alcohol consumption problems.

Keywords: Social discrimination, alcohol use disorder, alcohol abuse, indigenous people.

RESUMEN

Introducción. Las poblaciones indígenas se consideran minoritarias y vulnerables, y se caracterizan por su pobreza, dificultad para acceder a la alimentación, la vivienda y el rezago educativo. Estas condiciones los vuelven propensos a presentar problemas de consumo de alcohol. La dependencia al consumo de alcohol surge probablemente como símbolo de protesta, reto y respuesta a la angustia social, lo cual repercute en los sectores poblacionales marginales que poseen condiciones de fragilidad por la explotación y discriminación como los pueblos indígenas. **Objetivo.** Conocer el efecto de la discriminación percibida en el consumo de alcohol en poblaciones indígenas mexicanas. **Método.** El diseño del estudio fue descriptivo, correlacional de comprobación de modelo, con una muestra de 362 adultos de dos comunidades indígenas. **Resultados.** Se realizó el modelo de regresión lineal simple el cual muestra efecto significativo en la totalidad del modelo ($F_{[248]} = 78.312, p = .001$), explica el 49% de la varianza del consumo de alcohol, además se encontró influencia positiva significativa de la variable discriminación percibida ($\beta = .626, p < .001$) sobre el consumo de alcohol. **Discusión y conclusión.** Las comunidades indígenas estudiadas poseen características que la literatura destaca como factores de riesgo para desarrollar conductas adictivas de consumo de alcohol, estos resultados coinciden con lo expuesto por la Comisión Nacional para el Desarrollo de los Pueblos Indígenas. Las poblaciones indígenas presentan problemas de discriminación que se asocian con los problemas de consumo de alcohol.

Palabras claves: Discriminación social, trastorno del consumo de alcohol, abuso de alcohol, pueblos indígenas.

INTRODUCTION

The General Consultation Report on Alcoholism and Indigenous people indicates that these populations are considered minoritarian and vulnerable since they have characteristics such as poverty, difficulty in accessing food, housing, and educational. These conditions make them prone to problems like alcohol dependence ([Comisión Nacional para el Desarrollo de los Pueblos Indígenas \[CDI\], 2008](#)).

A study carried out on indigenous population of Mexico City reported that excessive alcohol consumption occurred in 20.9% of indigenous men and 24% of non-indigenous men. In indigenous women, the prevalence of this consumption was 22.9% versus 21% of non-indigenous women ([Vega et al., 2015](#)). Although there is not much difference between alcohol consumption in indigenous and non-indigenous populations, it is important to mention that indigenous populations are often characterized by a low economic status and so the consequences of alcohol consumption are more severe in people with malnutrition ([Fundación de Investigaciones Sociales, 2002](#)).

It is also important to point out that alcohol dependence consumption is likely to arise as a symbol of protest, challenge, and action to social anguish, which has repercussions on marginal population sectors that have fragility conditions due to exploitation and discrimination, such as indigenous people ([Almaguer, García, & Vargas, 2017](#)). The discrimination factor refers to patterns that generate unequal practices and strategies designed to exclude any social group, such as indigenous population.

In this way, a qualitative study carried out in Canada about the experiences of the medical care of indigenous people highlights that participants expressed that, in their interaction with health personnel, they experienced discrimination, in addition to being stigmatized by the stereotypes that link indigenous people with substance use ([Goodman et al., 2017](#)). In the same way a study carried out in Australia about the indigenous workers alcohol consumption refers that discrimination is a source of isolation and depression that returns to the indigenous people most vulnerable to turning to alcohol as a source of support to overcome stressful situations ([Roche et al., 2013](#)).

In their study of the trajectory of alcohol consumption and drinking problems during adolescence in an indigenous population of North America, [Cheadle and Whitbeck \(2011\)](#) found that perceived discrimination predicts an early start of alcohol consumption ($Z = 1.30$ [2.32], $p < .05$). They also found that the perception of discrimination is positively related to alcohol abuse or dependence ($t = 2.02$, $p < .05$). This adds up to the fact that perceived discrimination increases the probability of abuse and dependence on alcohol by 22%.

It is important to mention here that there is little evidence of how perceived discrimination affects alcohol

consumption in Mexican indigenous populations. For this reason, the objective of this study is to learn about the effect of perceived discrimination on alcohol consumption in Mexican indigenous populations.

METHOD

Design of the study

The study design was cross sectional, for model verification, as it sought to examine the relationships between the variables perceived, discrimination and alcohol consumption, and the model verification because the effect of the perceived discrimination variable on alcohol consumption will be measured.

Description of the sample

The population was made up by indigenous adults from the town of Mazateupa, in the municipality of Nacajuca, and Ayapa, in the municipality of Jalpa de Méndez, Tabasco, Mexico. Together, these localities have a population of 3,598 adults of over 18 years of age of both sexes ([Instituto Nacional de Estadística y Geografía \[INEGI\], 2010](#)). The sample size was calculated using the statistical program n'Query Advisor®, version 7.0 ([Elashoff, Dixon, Crede, & Fotheringham, 2007](#)), for a proportion with a significance level of .95 for a two-sided interval, an estimation error limit of .05%, Power at 90% with a coefficient of determination of .05%, considering a non-response rate of 5%, thus obtaining a final sample of 362 indigenous adults. The sampling was non-probabilistic for convenience by quota.

Measurements

A Personal Data and Prevalence of Alcohol Consumption Card (CDPPCA) was used together with the Scale of Events Perceived as Discrimination (Escala de Eventos Percibidos como Discriminación, EEPD), and the Alcohol Use Disorder Identification Test (AUDIT).

The personal Data and Consumption Prevalence Card includes sociodemographic data and four questions on the prevalence of alcohol consumption, lifetime, in the last year, in the last month, and in the last week. In addition, two questions that examine the age of start of alcohol consumption and the number of drinks consumed on a typical day are included.

The Scale of Events Perceived as Discrimination is a questionnaire created by Moreno in 2011 with the aim of measuring the perception of social discrimination among the Costa Rican indigenous population, which is understood as the opinion that people have of being treated unfairly, which is directly related to being part of an ethnic group.

It is made up of 22 questions in total, which are subdivided into two sections. The first one is composed of 16 items that examine events perceived as discrimination, and the responses have a Likert-type format with four options (Moreno, 2011). The second section measures the perception of discrimination with two scales, with six items, with a Likert-type response format of four options.

To evaluate the questionnaire, the responses of each of the two sections of the questionnaire are summed, where the first section has a minimum score of 16 and a maximum of 64 points, while the second section has a minimum score of 6 and a maximum of 24. The estimate indicates that the higher the score obtained is the greater the perception of social discrimination. This instrument was used in a study with a Costa Rican indigenous population, and an adaptation of the questionnaire was made for the Mexican indigenous population by the authors of this research as original document used terms that are not applicable at local population having for the first section a Cronbach above $\alpha = .70$ and for the second section a Cronbach above $\alpha = .80$ (Moreno, 2011). In the present study, a Cronbach alpha was obtained from the first section of $\alpha = .89$ and in the second section, $\alpha = .76$, the scale in general presented a Cronbach alpha of $\alpha = .90$.

The Alcohol Use Disorders Identification Test (AUDIT) was adapted for the Mexican population by de la Fuente and Kershenobich (1992). This instrument explores alcohol consumption during the last twelve months, the problems that occur due to consumption, as well as it identifies the patterns of alcohol consumption (hazardous, dependence, and harmful), "hazardous drinking is a pattern of alcohol consumption that increases the risk of harmful consequences for the user or, dependence use refers to alcohol consumption that results in consequences to physical and mental health, and harmful alcohol use is a cluster of behavioural, cognitive, and physiological phenomena that may develop after repeated alcohol use" (World Health Organization, 2001), others, it is made up of 10 items with a score that ranges from 0 to 40 points. The classification of the consumption type is obtained by adding 1 point to each positive answer. This creates a range that goes from 1 to 3 considering hazardous consumption, 4 to 7 as dependent consumption, and 8 to 40 it is considered harmful consumption, as higher the score, higher is alcohol consumption. In rural populations in Mexico, a Cronbach's alpha of $\alpha = .78$ has been reported (Alonso et al., 2016). In this study, a Cronbach's $\alpha = .87$ was obtained.

Procedure

First, authorization was requested from the delegate of the indigenous communities and the authorities of the health center. They contacted afterwards the community health personnel, who were trained to carry out the promotion of

the survey and the interview. Through the health center, people who attended for consultation were contacted. Those who agreed to participate attended a doctor's office where the informed consent was read and signed. The application of the instruments was then carried out through direct interview (face to face), as studied population speak Spanish as second language, as covid pandemic was present at the time all interviews were one at a time, after each interview a sanitize process was made in the room, and both interviewer and subject used face mask and alcohol to sanitize hands.

Statistical analysis

The Statistical Package for the Social Sciences, version 25, was used. Descriptive statistics were used for the sociodemographic data of the sample, for the prevalence of consumption and the AUDIT test, descriptive statistics and 95% confidence intervals were used for continuous variables the Kolmogorov-Smirnov with Lilliefors correction to know normality in variables, since they did not present normality non-parametric statistics were used, the Spearman correlation and the linear regression test.

Ethical considerations

The study adhered to the Regulation of the General Health Law on Health Research Matters (Secretaría de Salud [SS], 1987), in its Last Reform (DOF 04-02-2014). This document has the approval of the ethics and research committee of the School of Nursing of a public university in the state of Nuevo León, Mexico, with folio No. 19-CEI-004-20180614.

RESULTS

Table 1 describes the sociodemographic data of the indigenous populations studied, 58.6% of the total sample belong to the indigenous locality of Mazateupa, in this locality 99.1% identify themselves as part of an indigenous community, in what concerns the speak an indigenous language, 54.7% say they do, and 78.8% have a family member who speaks this language, the age group with the highest percentage with 55.2% was 18-26 years, regarding sex, the highest prevalence was female with 53.8%, 57.5% of the population is classified as single, 31.1% has a bachelor's degree, and 36.3% identifies as a student.

The indigenous population of Ayapa represents 41.4% of the total sample of this study, where 98.7% feels that they belong to an indigenous group, 68% speak an indigenous language, likewise 88% report that they have a family member who speaks some indigenous language, the age group with the highest percentage was 27-59 years with 76%, the predominant sex was male with a prevalence of

54.7%, 57.3% declared themselves with a partner, regarding schooling, high school presented 31.3%, finally the most frequent occupation is merchant with 29.3%.

Regarding the age of initiation of alcohol consumption, the minimum age was eight years and the maximum was 26 years ($SD = 7.50$), with a mean $\bar{X} = 13.91$ years (Mdn = 16.0); Regarding sex, the age of initiation of alcohol consumption in males was between 10 and 25 years of age ($SD = 6.86$), with a mean $\bar{X} = 17$ years (Mdn = 14.59), in females the age of onset of alcohol consumption is be-

Table 1
Sociodemographic characteristics of the indigenous adults in the study

Characteristics	Mazateupa		Ayapa	
	f	%	f	%
	212	58.6	150	41.4
Belongs to an indigenous group				
No	2	.9	2	1.3
Yes	210	99.1	148	98.7
Speak an indigenous language				
No	96	45.3	48	32.0
Yes	116	54.7	102	68.0
Some relative speaks an indigenous language				
No	45	21.2	18	12.0
Yes	167	78.8	132	88.0
Age				
18-26 years	117	55.2	19	12.7
27-59 years	93	43.9	114	76.0
60-86 years	2	.9	17	11.3
Sex				
Male	98	46.2	82	54.7
Female	114	53.8	68	45.3
Marital status				
With couple	90	42.5	86	57.3
Single	122	57.5	64	42.7
Scholarship				
None	5	2.4	10	6.7
Elementary	15	7.1	15	10.0
Junior high	15	7.1	13	8.7
High school	45	21.2	47	31.3
Technical career	28	13.2	28	18.7
Degree	66	31.1	29	19.3
Postgraduate	38	17.9	8	5.3
Occupation				
Does not work	5	2.4	11	7.3
Student	77	36.3	14	9.5
Housewife	27	12.7	26	17.3
Professional	31	14.6	20	13.3
Farmer	17	8.0	6	4.0
Merchants	12	5.7	44	29.3
Administrative	10	4.7	23	15.3
Others	33	15.6	6	4.0

Notes: f = frequency; % = percentage; n = 362.

tween eight and 26 years old ($SD = 8.05$), with a mean age of $\bar{X} = 16$ years (Mdn = 13.24).

According to the prevalence on alcohol consumption (Table 2), it was obtained that 80.1% of the participants have consumed alcohol at least one in a lifetime, 68.8% report consumption in the last year, 52.8% in the last month, and 38.7% in the last week.

According to the types of alcohol consumption of the study participants, it is shown that 15.8% have a hazardous consumption, 22.4% dependent consumption, and 61.8% harmful consumption (Table 3). Regarding the Scale of Events Perceived as Discrimination, a mean $\bar{X} = 41.42$ (Mdn = 42), with a minimum score of 22 and a maximum of 75 ($SD = 11.73$).

For continuous variables, the Kolmogorov-Smirnov Test was performed, where the variables did not show normality, so it was decided to use non-parametric statistics.

The results of the Spearman Correlation Coefficient (Table 4) show that perceived discrimination was related to the number of drinks consumed ($r_s = .475, p < .001$), as well as the perceived discrimination variable was related to the consumption of alcohol (AUDIT; $r_s = .486, p < .001$), which means that the more discrimination is perceived by the indigenous population, the greater the number of drinks

Table 2
Prevalence of alcohol consumption

Prevalence	f	%	95% CI	
			LL	UL
Lifetime				
No	72	19.9	76	84
Yes	290	80.1		
In the last year				
No	113	31.2	64	74
Yes	249	68.8		
In the last month				
No	171	47.2	48	58
Yes	191	52.8		
In the last week				
No	222	61.3	34	44
Yes	140	38.7		

Notes: f = frequency; % = percentage; CI = Confidence interval; n = 362; LL = Lower limit; UL = Upper limit.

Table 3
Type of alcohol consumption according to the AUDIT

Type of consumption	f	%	95% CI	
			LL	UL
Hazardous	38	15.8	11	20
Dependent	54	22.4	17	28
Harmful	149	61.8	56	68

Notes: f = frequency; % = percentage; CI = Confidence interval; LL = Lower limit; UL = Upper limit; AUDIT = Alcohol Use Disorder Identification Test; n = 241.

Table 4
Spearman's Correlation Coefficient Discrimination with Alcohol Consumption

Variable	1	2	3	4	5
1. Age	-				
2. Age of start of consumption	.151**	-	-	-	-
3. Number of drinks consumed	.271**	.423**	-	-	-
4. Alcohol consumption (AUDIT)	.238**	-.099	.706*	-	-
5. Perceived discrimination (EEDP)	.271**	.100	.475**	.486 **	-

Notes: AUDIT = Alcohol Use Disorder Identification Test; EEDP = Scale of Perceived Events with Discrimination.

* $p < .05$; ** $p < .01$.

consumed on a typical day and the greater the alcohol consumption, as additional findings, it is shown that age was related to perceived discrimination ($r_s = .271, p < .01$) that as the older the age, the greater the perceived discrimination, age was related to the number of drinks consumed ($r_s = .271, p < .001$), and with AUDIT alcohol consumption ($r_s = .238, p < .01$), that is, the older the age, the greater the alcohol consumption by the indigenous participants.

Finally, a simple linear regression model was carried out to observe the effect of discrimination on alcohol consumption (Table 5), in which a significant effect is reported in the entire model ($F_{[248]} = 78.312, p = .001$), explaining 49% of the variance of alcohol consumption. Perceived discrimination ($\beta = .626, p < .001$) was found to have a positive and significant effect on alcohol consumption.

DISCUSSION AND CONCLUSION

The results found in the present study show that the average age of beginning of alcohol consumption in indigenous women is below the national average reported, in a national study on alcohol consumption, this shows that the indige-

nous women from these communities of Tabasco had started alcohol consumption at an earlier age than non-indigenous women (INPRFM, INSP, CONADIC, & SS, 2017). In addition to the above, Ahumada-Cortez, Gámez-Medina, and Valdez-Montero (2017), state that there is currently greater homogeneity between gender roles.

All the prevalence of alcohol consumption in this study presented higher percentages compared to the results shown by the ENCODAT 2016-2017; In addition to the above, harmful consumption presented the highest percentage of consumption, these results support what was stated by the Mexican organizations that studies diverse characteristics of indigenous peoples (CDI, 2008), which mentions that indigenous populations are more likely to have problems with alcohol consumption. The indigenous communities in this study have characteristics that the literature highlights as risk factors for developing alcohol addictive behaviors such as poverty, domestic violence, mental health problems, availability and accessibility of alcohol, and community policies conducive to alcohol consumption, such as the sale of alcohol in places not regulated by law (Becoña et al., 2010; Gómez-Restrepo, Rincón, & Urrego-Mendoza, 2016).

The scores obtained in the present study on perceived discrimination were high, this shows that indigenous people feel discriminated, which coincides with what was obtained by the National Survey of Discrimination in Mexico (Encuesta Nacional de la Discriminación en México, 2010), which mentions that the people who belong to Indigenous communities manifest discrimination as a primary problem in their daily life.

It is worth mentioning that in the context in which the study was developed, indigenous people felt uncomfortable if they were interviewed by people who did not have physical characteristics similar to those they consider typical of indigenous people, they said that they feel attacked if a person that they consider non-indigenous, classifies them as indigenous, because they perceive that being classified as indigenous by non-indigenous populations is linked to stu-

Table 5
Simple linear regression for the effect of perceived discrimination on alcohol consumption

	SS	gl	MS	F	p
Regression	27093,536	1	27093,536	78,313	.001
Residual	85799,564	248	345,966		
Total	112893,100	249			R ₂ = .490
Coefficients					
Model (n = 241)	β	SE	t	p	95% confidence interval
(Constant)	6,745	2,701	2,497	.013	1,426 12,065
Perceived discrimination	.626	.071	8,849	.001	.487 .766

Notes: R₂ = coefficient of determination; SS = sum of squares; df = degrees of freedom; MS = mean square; β = Beta; p = significance; SE = Standard error; t = t-test statistic; n = 362.

pid, aggressive and ignorant people, it is important to note that this phenomenon is considered as internalized racism (David, Schroeder, & Fernandez, 2019), which is a characteristic that communities that have been constantly and systematically discriminated against, this causes that over time, the negative ideas expressed by the oppressive group, becomes a reality in the oppressed group and they conceive them as their own, which leads them to adopt a behavior according to what their oppressors expect of them.

Regarding discrimination, it present an effect on alcohol consumption, which shows that it is an important factor to take into account in the study of the phenomenon of alcohol consumption in indigenous populations, these results coincide with that reported by Cheadle and Whitbeck (2011), based on a study carried out in an American indigenous population, this study reported that the perception of discrimination is positively related to alcohol abuse or dependence.

In conclusion, indigenous populations present discrimination problems that lead them to develop problems with alcohol consumption, it is important to take into account that it is necessary to continue the study of discrimination perceived by indigenous populations as well as the problem of alcohol consumption.

The limitations of the study were due to the fact that the sampling was not probabilistic derived from the limitations that were imposed by the pandemic.

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Conflict of interest

The authors declare that they have no conflicts of interest.

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