

Perception of the healthiness of Pisco macerates in the district of Barranco: A study on consumer evaluation

Percepción de la salubridad de los macerados de Pisco en el distrito de Barranco: Un estudio sobre la evaluación de los consumidores

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Received: 20/09/2023

Review: 17/10/2023

Accepted: 22/11/2023

Published: 02/01/2024

ABSTRACT

The study was carried out in the district of Barranco due to its relevance in the offer and consumption of Pisco macerates. Bars were randomly selected based on the Barranco Local Tourism Development Plan for 2020, according to “Ordinance No. 554-2020-MDB.” A structured questionnaire with 36 closed questions was used via Google Forms, administered in two sessions, and analyzed in MS Excel. The questionnaire was validated by three experts. The survey took place on Barranco Boulevard over four weekends, interviewing people leaving local bars on Saturdays. The aim was to identify perceptions of regular Pisco macerate consumers, using closed questions for analysis and comparison. The sample included 341 randomly selected individuals. The survey focused on visual, gustatory, and olfactory perceptions related to the Pisco macerate consumption experience. The results showed that visual, gustatory, and olfactory perceptions influence the choice of healthy Pisco macerate consumption. Price and beverage color were determining factors in consumption choices. Additionally, taste was crucial for opting for healthy consumption, although olfactory perception was not a reliable indicator of Pisco authenticity. These findings highlight the importance of educating consumers on identifying quality Pisco and considering visual, gustatory, and olfactory aspects in selecting alcoholic beverages. Ensuring Pisco quality and authenticity is essential to maintaining consumer trust. **Keywords:** Healthiness, visual perception, gustatory perception and olfactory perception.

RESUMEN

El estudio se realizó en el distrito de Barranco, reconocido por su relevancia en la oferta y consumo de macerados de Pisco. Los bares fueron seleccionados al azar siguiendo el Plan de Desarrollo Turístico Local de Barranco 2020, respaldado por la “Ordenanza N° 554-2020-MDB”. Se utilizó un cuestionario de 36 preguntas cerradas en Google Forms, validado por tres expertos, administrado en dos sesiones y analizado en MS Excel. La encuesta se llevó a cabo en el boulevard de Barranco durante cuatro fines de semana, entrevistando a clientes de bares locales los sábados, con el objetivo de comprender las



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Rev. Investigaciones ULCB. Jan - Jul.11(1), 2024; ISSN: 2409 - 1537;74-81

percepciones de los consumidores habituales de macerados de Pisco. La muestra incluyó 341 personas seleccionadas al azar y se centró en percepciones visuales, gustativas y olfativas relacionadas con la experiencia de consumo de Pisco. Los resultados revelaron que la percepción visual, gustativa y olfativa influyen en la elección de un consumo saludable de Pisco, siendo el precio y el color factores determinantes. Aunque el sabor fue crucial, la percepción olfativa no fue un indicador confiable de autenticidad. Estos hallazgos resaltan la importancia de educar a los consumidores sobre la identificación de Pisco de calidad y considerar aspectos visuales, gustativos y olfativos en la selección de bebidas alcohólicas para mantener la confianza del consumidor.

Palabras clave: Salubridad, percepción visual, percepción gustativa y percepción olfativa.

INTRODUCTION

Pisco is a traditional drink from Peru, and its consumption has experienced constant growth in recent years. In the case of Peru, national consumption of Pisco during 2016 grew at an annual rate of 5.6 % on average. However, different factors have influenced the discrete decrease in production in recent years, not achieving the expected 2 000 000 liters per year. According to the Association of Exporters (ADEX), it is estimated that Pisco exports in 2023 would close to US\$ 10 500 000 which represents a 0.2 % increase compared to 2022, figures that may continue to increase with the opening of new markets in 2024 (ADEX, 2023).

Pisco macerates, a variant of this drink, must be made without chemical components such as coloring or flavorings, and without fruits in the bottles, since they can oxidize. Ingesting steeped beverages in unsanitary conditions can represent an immediate health risk. Alcalá (2002) points out that methanol, present in permitted levels in Pisco, can be toxic if consumed in excess. Methanol is especially dangerous when ingested through adulterated liquor, and can cause drunkenness, blindness, heart attack, asphyxiation and, ultimately, death. Aflatoxin, a toxic substance produ-

ced by certain fungi, can contaminate food crops and nuts, which are sometimes used in the production of Pisco macerates. The presence of aflatoxin in food represents a serious danger to human health, according to the World Health Organization (2018).

The Barranco District, known for its bohemian and cultural atmosphere, attracts local, foreign and other visitors from Lima, who enjoy its varied gastronomic offer, which includes Pisco macerates. In the future, consumers of Pisco macerated beverages are expected to be informed. Likewise, service establishments are expected to be more committed to the public health of their consumers.

The visual, gustatory and olfactory perception of Pisco macerates in the bars of the Barranco District is a topic that has been little addressed in scientific literature. However, the importance of these aspects in the choice and consumption of Pisco macerates is undeniable. The visual perception of a Pisco macerate includes aspects such as color, transparency and presentation of the drink. These factors can influence consumers' perception of product quality and healthiness. The taste perception of a Pisco macerate refers to the appreciation of the

flavor and texture of the drink. Olfactory perception, for its part, is related to the aromas and odors that emanate from the drink. All these aspects can influence consumers' decision to choose a Pisco macerate and their satisfaction with the product. Therefore, it is important to investigate how these aspects influence consumer perception and how they can be used by bars to improve their customers' experience.

MATERIALS AND METHODS

The present study was carried out in the district of Barranco, due to its importance in the supply and consumption of Pisco macerates. The selection of the bars under study was carried out randomly, following as a guide the Barranco Local Tourism Development Plan of the year 2020, governed by "Ordinance No. 554-2020-MDB".

For data collection, a structured questionnaire was implemented using the Google Forms platform. This questionnaire consisted of 36 closed questions and was administered in two work sessions. The data obtained were subsequently stored in MS Excel format, which allowed statistical analysis to be carried out. In order to ensure the validity of the data collection instrument, the questionnaire was subjected to a validation process carried out by three experts in the field of study. The survey was carried out on the boulevard of the Barranco district, where people leaving local bars were surveyed on four consecutive weekends, specifically on Saturdays.

The selection of these bars was based on information provided by the Barranco Local Tourism Development Plan database. The focus of the survey was descriptive in nature, with the objective of identifying the perceptions of regular

consumers of the "bar" establishments on the Boulevard of the Barranco District in relation to their experience as consumers of Pisco macerates. To facilitate data analysis and comparison, closed questions were used.

The sample was 341 people, randomly selected after leaving the bars. The structure of the survey focused on three main dimensions: visual perception, gustatory perception and olfactory perception, all of them related to the experience of consuming Pisco macerates in the bars of Barranco.

RESULTS AND DISCUSSION

The results in Table 1 indicate the importance of the price of Pisco macerates in the consumption decision in the bar establishments of the Barranco District.

Table 1.

Importance of the price factor for the healthy consumption of Pisco macerates.

Factor	Quantity	Percent
Very important	143	41.90%
Important	43	12.60%
Indifferent	118	34.60%
Unimportant	25	7.30%
Nothing Important	12	3.50%
Total	341	100%

Price is a very important factor when choosing what kind of Pisco macerate to consume. It is inferred that the raw material in healthy conditions for the production of this drink has a price directly proportional to the quality, so it is to be expected that a Pisco macerate in optimal healthy conditions will also have a price closely related to the quality. For this reason, we consider it essential to determine the level of importance of consumers' visual perception and its influence on the healthiness of Pisco

macerates according to the price factor in the bars of the Barranco District.

41.9 % of the people surveyed consider that the price of the drink is a “Very important” factor when choosing a Pisco macerate; 34.6 % are “Indifferent” regarding price; 12.6 % consider it “Important”; 7.3 % consider it “Unimportant”; and 3.5 % consider it “Not at all important.” The prices of most Piscos in the Peruvian market do not reach S/ 40.00, and many consumers pay close to S/ 30.00. However, it is necessary to confirm if they are really consuming Pisco.

To obtain a liter of Pisco, 9 kg of grapes are required, while for a liter of green must, 12 kg of grapes are required. Therefore, it is impossible for a premium Pisco to cost less than S/ 40.00. There are other very particular cases that have ended in tragedy due to the consumption of poor quality Pisco.

According to Collado (2012), acute methanol poisoning occurs mainly due to the consumption of adulterated liquor, which has been implicated in mass poisonings. In our country, there is a legal restriction on the marketing of methyl alcohol according to the Law on Control and Supervision of the Marketing of Methyl Alcohol (Law No. 28317).

That is why, although the authorities try to prevent the trafficking of this type of beverage, it is the consumer who must have an option that allows them to verify their drinks before being consumed and thus avoid the risk to their health.

The information presented in Table 2 highlights the relevance of color in Pisco macerates, both in the choice of consumers in the bars of the District of Barranco as in its possible effects on organic health.

Table 2.

Importance of the color of the drink for the healthy consumption of Pisco macerates

Factor	Quantity	Percent
Very important	217	63.60%
Important	94	27.60%
Indifferent	18	5.30%
Unimportant	6	1.80%
Nothing Important	6	1.80%
Total	341	100%

Furthermore, Ávila & Gonzáles (2011) pointed out that, although a sample may not be attractive in terms of color, its flavor may be pleasant, or that a sample may not have the right consistency, but still be tasty.

The perception of the color of the drink is a critical factor when choosing a Pisco macerate, since it can indicate the freshness and quality of the fruits used in its preparation, as well as its oxidation state, which in the long term can be detrimental to health. The survey results revealed that 63.6 % of respondents consider color to be a “very important” factor when choosing a Pisco macerate, while 27.6 % consider it “important.” On the other hand, 5.3 % are “indifferent”, 1.8 % consider it “not at all important” and another 1.8 % consider it “unimportant”. This underlines the importance of color in consumer choice.

The results in Table 3 provide us with information about the perception of consumers of Pisco macerates about the flavor of the drink in bar establishments in the Barranco District and how this perception can be related to the organic health of consumers.

This result highlights the importance of flavor in choosing a Pisco macerate, suggesting that consumer perception is based on the quality and enjoyment of

Table 3.

Importance of the flavor of the drink for the healthy consumption of Pisco macerates

Factor	Quantity	Percent
Very important	341	100.00%
Important	0	0.00%
Indifferent	0	0.00%
Unimportant	0	0.00%
Nothing Important	0	0.00%
Total	341	100%

the drink. However, it is essential to keep in mind that most consumers are not experts in tasting Piscos; They are, for the most part, simply regular consumers.

The totality of people surveyed considered flavor to be a “very important” factor when choosing a Pisco macerate. In this sense, Combe *et al.* (2017) point out that the preference for Pisco is constantly increasing in the national market, and that the wide variety of fruits available in Peru, such as strawberry, passion fruit and camu camu, should be taken advantage of to prepare and market macerates that highlight the characteristic flavors and aromas of these fruits and Pisco.

Ávila & Gonzáles (2011) also highlighted that the sensory quality of a food can be evaluated by considering the total impression it causes once tasted, including aspects such as color, appearance, flavor, aroma and mouth feel.

The result in table 4 provides us with valuable information about the consumer’s ability to detect the presence of adulterated Pisco in the macerates through the aroma of the drinks. This finding is significant since it allows us to delve deeper into consumer perception regarding the healthiness of this type of beverage.

The quality of food and drinks can be appreciated through their aromas, and

Table 4.

Recognition of the presence of adulterated Pisco in macerated drinks through aroma

Option	Amount	Percent
I can recognize	0	0.0%
I can't recognize	341	100%
Total	341	100%

Pisco macerates are no exception. A Pisco macerate should reflect the natural aroma of the fruits, herbs and other ingredients used, while maintaining the essence of Pisco. A macerate that gives off an alcoholic aroma could indicate the presence of artificial flavors or other types of alcohols, which could be harmful to your health. 100 % of those surveyed indicated that they could not recognize a macerate made with adulterated Pisco. Since Pisco macerates are complex mixtures of fruits, herbs, nuts and other ingredients, along with Pisco, this diversity of aromas and flavors can confuse the consumer. Most consumers are not experts in beverage tasting; They are simply attracted by the novelty, the quality of the drink, the flavor, the presentation, among other factors. Therefore, it is important that bar establishments in the Barranco District and throughout the country act conscientiously and ethically when offering Pisco macerates. The Ministry of Foreign Trade and Tourism (MINCETUR) noted in an Operational Plan in the Moquegua Region in 2006 that unfair competition, informal trade and the presence of adulterated Pisco in the market are problems at the national level. The National Institute for Consumer and Property Defense Intellectual (INDECOPI) has carried out inspection operations, although without achieving the desired results. It is important to note that many supermarkets have assumed the commitment, with the approval of the Pisco quality standard, of

not marketing adulterated Piscos

Table 5 offers us information about the knowledge that consumers have of Pisco macerates to identify the most relevant characteristics in the selection of inputs for the production of these drinks.

Table 5.
Knowledge about the most important characteristics for the selection of inputs.

Option	Amount	Percent
No	341	100%
Yes	0	0.0%
Total	341	100%

The main reason why consumers of Pisco macerates in the Barranco District lack basic or elementary information that can contribute to healthy consumption is that most of them are simply consumers and not experts in the preparation of these drinks. This is reflected in the fact that 100 % of those surveyed admitted not knowing the most important characteristics for selecting inputs in the preparation of Pisco macerates.

Combe *et al.* (2017) point out that the raw material must be free of elements foreign to the production process and that, during the washing process, the plant operators must inspect and remove any organic element or defective raw material that does not contribute to the quality of the product. Final product. Furthermore, it is crucial to take into account the origin of the Pisco when preparing macerates. Ravelo *et al.* (2011) point out that toxic agents in alcoholic beverages can be present from the areas where the raw material is grown, due to environmental factors, mistreatment during harvest or transportation, and conserva-

tion or industrialization processes.

Table 6 shows the perception of the consumer of Pisco macerates about the conservation conditions of these drinks. This allows us to observe the level of basic or elementary knowledge that consumers in the Barranco District have on this topic.

Table 6.
Conservation conditions for Pisco macerates

Option	Amount	Percent
Does not know	234	68.60%
No exposure to sunlight	94	27.60%
Dust-free environment	13	3.80%
Total	341	100%

Pisco consumers in the Barranco district do not know what the conservation conditions are for Pisco macerates. This indicates a general lack of knowledge among consumers about how to properly preserve these drinks. Regarding exposure to light, they responded that Pisco macerates should be protected from sunlight. This response suggests that some consumers have a basic understanding of the importance of avoiding direct exposure to light to preserve the properties of the beverage.

A minimum number of Pisco consumers in the Barranco district consider that Pisco macerates should be kept in a dust-free environment. This response reflects more specific knowledge about conservation conditions, but is a minority compared to those who do not know or only mention sunlight.

Overall, these results show that there is a need to educate consumers about the proper storage conditions for Pisco macerates. This suggests that information on the conservation of these drinks is not

widely known among consumers, which could affect the quality and flavor of the Pisco macerates they consume.

These findings agree with what was mentioned by Briceño *et al.* (2018), who stated that the containers must be tightly closed to prevent the leakage of aromas. Furthermore, the Pisco macerate should always be kept in a closed environment, in the shade and avoiding exposure to sunlight to prevent oxidation and prevent the generation of free radicals.

Likewise, Aliaga (2018) recommends that conservation areas have a minimum number of windows, located at the highest height and protected to prevent the entry of dust, birds and insects. Shelves should be clean and free of dust, and working and storing in places with drafts or airborne dust should be avoided.

CONCLUSIONS

The research carried out on the perception of Pisco macerates in consumers of bar establishments in the Barranco District reveals the importance of visual, gustatory and olfactory perception in choosing a healthy consumption of this

drink. 55 % of those surveyed considered that the price, associated with the quality of the product, influences their decision to consume Pisco macerates in a healthy way, while 91.2 % identified the color of the drink as an indicator of its healthiness. , making it a decisive factor in consumer choice.

Likewise, 100 % of the participants indicated that the flavor of the drink is a crucial factor in opting for a healthy consumption of Pisco macerates. However, regarding olfactory perception, all respondents stated that they could not recognize the presence of adulterated Pisco through smell.

These findings suggest the need to educate consumers on how to identify quality, unadulterated Pisco, as well as the importance of considering visual, gustatory and olfactory aspects in the selection of alcoholic beverages.

In addition, it highlights the importance of guaranteeing the quality and authenticity of Pisco to maintain consumer confidence and satisfaction.

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