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Donkey milk as a traditional remedy in the Andean community of Peru

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Donkey milk was ancestrally used in the Andean communities of Peru as a natural remedy to treat various ailments, including asthma, gastritis and bronchitis. This qualitative ethnographic research explores the traditional knowledge associated with its use, therapeutic value and marketing practices in rural and urban contexts. In-depth interviews, participant observation and focus groups with producers, vendors and consumers in the city of Ayacucho and surrounding communities were used. The results show that donkey milk is considered an alternative to conventional medicine and, in some cases, a substitute for breast milk. However, its sale is informal, without sanitary regulation, and loaded with cultural stigmas. Information is transmitted orally, mainly in Quechua, which limits its scientific systematization. It is concluded that it is urgent to revalue this ancestral knowledge and integrate it into intercultural health and food security policies.

KEYWORDS

customs and traditions, donkey milk, culture, Andean community, oral tradition

1 Introduction

In the Andean region of Peru, traditional medicine is deeply rooted and widely accepted by the population, whose consumption is supported by the transmission of knowledge over generations. This type of sales practice has also become widespread in various parts of the world, for example in Ecuador there are “seven stalls, with about fifteen of these female animals, where the product is traded between 06:00 and 09:00 every day. These businesses, which have become part of the landscape, offer donkey milk in two presentations” (Carrión, 2023). It highlights an interesting aspect about the donkey milk trade in the region, showing how it has become a regular activity within the community. Furthermore, the reference to the “two presentations” of the product suggests that there is an effort to adapt to consumer preferences, indicating the relevance of the product in terms of both tradition and demand.

This research was carried out in the Andean region of Peru, specifically in the city of Huamanga, capital of Ayacucho. In this area, donkey milk is marketed in one of the busiest streets, often evading the supervision of municipal inspectors in charge of health and control of street commerce. Preceding research refers to “its health benefits, donkey milk is not only used in early childhood nutrition, but also as a supplement in the diet of older and immunocompromised adults” (Lespinard et al., 2022). In the case of this research, its therapeutic use is not supported by medical or sanitary prescription; it is a traditional knowledge that is transmitted from one generation to another orally and in the Quechua language.

The form of street sales is quite similar to other parts of Latin America in particular, where the Andes is the main focus of consumption. Worrying reports are evident in this regard as in Bolivia from the “head of Traditional Medicine of Sedes, Jesús Gómez, reported that there is

a massive consumption of donkey milk in the markets of Quillacollo, Sacaba and Cercado, due to the dissemination of its healing properties through testimonies” (Gómez, 2013). This statement highlights how traditional medicine, supported by popular beliefs and personal testimonies, continues to play an important role in the communities, there is little scientific information to support these benefits. It also highlights how cultural traditions and word of mouth can influence consumption behavior, even in a context where formal scientific information may not be as present or accessible to all.

Andean culture is distinguished by a rich oral tradition, especially in the Quechua language, which continues to this day. It is an investigation based on traditional medicine accepted by popular society through stories, lacking scientific validation, which uses milk—an essential substance for life—as a curative agent for various ailments. Multiple benefits are attributed to this practice; however, “it is necessary to consider adequate hygienic measures for obtaining and handling donkey milk, knowing that it is a food of nutritional quality, can indirectly contribute to the preservation of donkeys” (Pérez-Rámirez et al., 2024). It is important to apply hygienic measures in the production of donkey milk, emphasizing its nutritional value. In addition, it suggests that encouraging its responsible consumption can indirectly help to conserve the species, linking human health and animal protection in a sustainable and ethical approach.

2 Methodology

This is qualitative ethnographic research, which aimed to understand the cultural and therapeutic value of donkey milk in Andean communities. The research involved direct participation with donkey milk sellers and consumers, who constituted the object of study. The field work was carried out in the places where the product is extracted, transported and sold, allowing daily interaction with the social environment in which this ancestral practice of donkey milk consumption takes place.

For the best information gathering process, in-depth interviews were applied with open and flexible questions that facilitated the exploration of the perceptions, beliefs and experiences of the research subjects. Focus groups were also organized in which, through open and collective dialogue, knowledge was exchanged, and life experiences were shared on the ancestral therapeutic use of donkey milk. The number of vendors on the colonial street, declared a pedestrian street because of its historical value, does not exceed ten people, mostly women. Many of them do not come every day, since the donkeys in their communities do not produce milk every day or face difficulties in acquiring it from their neighbors. The transfer from their communities to the city is usually done in groups, because vehicular access is limited to certain days and hours, due to the low demand for transportation. The focus group discussion allowed us to gather valuable information about this dynamic.

The work was complemented with participant observation, where the researchers were actively integrated into the scenario of the group being investigated. This insertion facilitated a deeper and first source understanding of the research problem, since most of them are quite monosyllabic in their answers if one is not a potential client. In the work, a content analysis of the texts, recordings and photographic materials obtained during the field work is carried out. This work made it possible to identify patterns, recurrent meanings and key aspects in the discourses and practices in the observation.

Finally, the field diary is used to systematically take notes of the observation. The records obtained contribute directly to the analysis of the research, especially on the objectives established on the therapeutic usefulness that sellers and buyers attribute to donkey milk. If it is not a potential client, it is difficult to obtain information, and they are very reserved in their expressions for fear that they are part of the municipal supervision as undercover agents.

3 Results

3.1 Traditional practices with donkey milk in communities

The use of donkey milk in traditional medicine is deeply rooted in the Peruvian highlands; however, there is also knowledge of its medicinal use in other countries, such as in Europe: “recently the commercialization and consumption of this product has begun in Spain. This fact, supported by a tradition not yet forgotten, can contribute significantly to the conservation of our native breeds, currently in danger of extinction” (Villalobos and González, 2014). This research contrasts with the situation in Bolivia, an Andean country like Peru, where “the belief that donkey milk has healing powers is very popular. For this reason, it is common to see farmers with their freshly milked animals in the streets of some cities” (InnovaPress Noticias, 2021). Globally, Andean communities (those living in the highest areas, above 2700 meters above sea level, and Quechua speakers) stand out as frequent consumers of donkey milk.

Andean communities consume frequently; in Bolivia according to Cañipa (2016), responsible for “Breastfeeding of the Ministry of Health, explained that ‘there is no scientific study that proves this healing power of donkey milk... but we have knowledge that it has more protein, and it may be because it has more colostrum’. The statement of the health personnel contradicts with the interview in Ayacucho (Peru) during the research who relates a deeply rooted tradition in his community, stating: “Since always my parents and the people of the village used to take it for the lungs as a remedy, for asthma and flu.” The interview reveals the strength of the intergenerational transmission of traditional medical knowledge, where the practice of using donkey milk for respiratory conditions is not a novelty, but an ancestral custom learned and practiced within the family nucleus and the community. The reference to “the people of the village” underscores the communal and accessible nature of this remedy, based on empirical observation of its effectiveness over time.

Scientific research on donkey milk and other animals of the same species, valuable raw materials in Andean medicine, could reveal diseases that go unnoticed by farmers. In addition, the donkey, a source of milk for commercialization, often lacks adequate care. Martini (2019) recommend a “prevention is based on clinical examination of mares before service, which allows segregating those that show clinical signs. However, the preventive management described does not eliminate the possibility of contagion of latently infected animals.” The interviewee reveals and contradicts science as a direct economic motivation for her activity: “I started selling donkey milk in Ayacucho to support my family.” This statement underscores how a local tradition or available resource can become a source of livelihood. It also geographically locates the practice in Ayacucho, suggesting a specific regional context for the use and trade of this product.

The Andean communities of Peru still practice the traditional consumption of donkey milk strictly for medicinal purposes. This ancestral form of use contrasts with scientific approaches developed in other parts of the world, where donkey milk is studied through experimental methods. In this context, interviews with key stakeholders are essential to understanding the continuity and value of this local knowledge. One of the interviewees states: “A small bottle of milk costs 10 soles (three dollars). There are three of us who always sell it. Each day we milk five donkeys, and all the milk gets sold—there’s never any left. I’m here from 8 or 9 a.m. until 2 or 3 p.m., or until the milk runs out.” This interview reveals a daily and organized practice of selling donkey milk, with consistent local demand. Three individuals actively participate in the commercialization process, milking five donkeys a day and selling the entire production. This not only reflects the cultural and medicinal value placed on the product but also its economic importance as a stable source of income for the families involved.

3.2 Ancestral knowledge: local perceptions as natural medicine

Andean culture possesses love of nature, veneration of the earth and consideration of plants as *kausay* (life) knowledge that is transmitted from generation to generation, mainly through the Quechua and Aymara languages, which lack official writing. Cases have been reported such as “the Aymara say that it cures the lungs and strengthens the immune system. But that tradition is fading fast. Although this woman, Julia Flores, is determined to save the popular practice of drinking donkey milk” (Flores, 2018). The report reflects how Aymara ancestral medicinal knowledge, such as the use of donkey milk to strengthen health, is disappearing. However, it is a cultural resistance to preserve these practices, valuing traditional knowledge in the face of its possible oblivion due to modernization or generational disinterest.

The interview with a vendor—like most of them, a woman who sells donkey milk on the public street—states the following: “Everyone buys from me: young people, adults, students, men and women. They ask me from different parts of Peru to send them donkey milk and also the preparation, another remedy made with the same donkey milk” This testimony from an Ayacucho woman shows the diversity of people interested in natural products made with donkey milk, which demonstrates not only the validity of certain traditional knowledge. This contrasts with what is mentioned in an article in *InnovaPress Noticias* (2021), which states that “in Bolivia, the belief that donkey milk has curative powers is very popular. For this reason, it is common to see farmers with their freshly milked animals in the streets of some cities, not only in La Paz.” A donkey milk vendor complements what another vendor mentioned in the interview: “I come from San Lorenzo Socos; I collect donkey milk from the community. At 5 o’clock in the morning they start milking the donkeys; from each donkey they take two small bottles.” This information supports the research of *Badin et al.* (2022), who state that “the components of interest in donkey milk, the water-soluble vitamins of the B group, are present in relevant quantities; among them, vitamin B2, B6 and B8 stand out”.

The sale of donkey milk is ambulatory, takes place on public streets and lacks sanitary control. Even so, there are potential customers who buy it for consumption, especially for their children, highlighting its supposed curative power related to the development

of intelligence. This information contrasts with *Garhwal et al.* (2023), who state that “donkey milk has peculiar nutritional qualities, similar to those of mother’s milk. Therefore, it can be considered an excellent substitute. In the last decade, extensive research has been carried out on the milk of various donkey breeds.” This observation is complemented by an interview with a donkey milk vendor in the second block of Jiron 28 de Julio, who states the following: “We do not process anything, everything is pure and natural so that it can be drunk at any time, it only lasts a day, and at night it can start to vinegar, we have not tried to store it in the refrigerator because we do not have it.” This situation is also evident in *Figure 1*.

The inhabitants of the Peruvian Andes are characterized by the frequent use of natural medicine as part of their ancestral culture. In the interview, a segmented consumption is mentioned: “women and men from 18 to 65 years of age for medical purposes and alternative natural medicine.” In view of this traditional practice, it is important to consider scientific advances, as indicated by *Khan et al.* (2024): “donkey milk represents an interesting option for healthy eating, thanks to its unique nutritional profile and potential therapeutic properties. However, in-depth studies are still required.” The paper highlights the nutritional and therapeutic value of donkey milk, recognizing it as a healthy alternative. However, it also points out the need for more rigorous research to scientifically support its benefits, especially in view of its traditional use and growing interest as a natural medicine in different communities.

Traditional medicine contrasts with the scientific perspective regarding donkey milk consumption. For example, “donkey milk is said to be very similar to breast milk, with great health benefits. In the late 20th century, it was used to feed orphaned and sick children in European countries” (*Bhairav, 2020*). This vision coincides with the promotions made by vendors, who claim that “milk is very useful when you have a cough, pneumonia, bronchitis, asthma, flu, colds, for anemia. Also, when you have low defenses and for many other diseases” (*Carrión, 2023*). The expression collected in the interview complements the work carried out on the importance of donkey milk in the world: “we bring it in big natural bottles, it has nothing else, it is drunk instantly at any time of the day, then it is vinegared”.

3.3 Results of therapeutic use: tradition and health

This research work does not aim to analyze the chemical and biological components of specialized sciences. It focuses on traditional transmitted by the *yachaq* (wise man of the people), folkloric and natural medicine, defended by those who produce, sell and consume it. This perspective is far removed from the results obtained by *Khan et al.* (2024): “the production and composition of donkey milk is closely related to the specific breed of the animals involved. Studies have shown that certain breeds exhibit markedly higher milk yields compared to others.” The contribution highlights that the breed of the animal significantly influences the quantity and quality of donkey milk produced. This finding is key to selecting breeds with higher yields, especially in contexts where nutritional or medicinal benefits are sought. Genetic variability has a direct impact on its commercial value.

Health is a highly valued asset, and when a person faces an illness, he or she seeks to be cured by any means available. In this context,



FIGURE 1
Street sale of donkey milk in Ayacucho. Photograph taken by the author, 2025.

resorting to traditional medicine becomes a common option, since its promoters usually offer life expectancy. However, this practice is contradicted by Vega (2014), who states that “there is no scientific evidence that proves that donkey milk cures the disease.” Despite this, the therapeutic use of this milk is common in the Andes, as confirmed by an-interview with another vendor: “Another type of remedy called *preparado* is also sold, which is based on donkey milk and other ingredients, which are: pollen, iodine, garlic, quion or ginger, wamanripa, eucalyptus, tara, muña, good for tuberculosis, for the lungs with water, for phlegm, for anemia, especially for tuberculosis. The cost of a bottle of 625 is 15 soles (five dollars).” The interview reflects how traditional knowledge combines donkey milk with herbs and other natural inputs to treat respiratory diseases such as tuberculosis.

The promotion of donkey milk in points of sale is done by highlighting its curative properties and its power as a remedy for children. From time to time, intermittently, the exclamation is heard in the streets or near the merchant: “donkey milk! donkey milk!,” seeking to capture the attention of potential customers and motivate them to stop, especially if they are not familiar with this product; meanwhile, other passers-by pass by without paying attention. Thousands of people, including informal vendors and pedestrians, pass daily through areas where donkey milk is sold, without knowing what (Radhakrishnan et al., 2023) discovered: “donkey milk is the best alternative to human milk for children with cow’s milk protein allergy due to its palatability, nutritional adequacy, clinical tolerability and physiological functions as molecules of digestive activity.” The ambulatory sale of donkey milk, extracted in an artisanal way, represents an empirical knowledge that is kept alive in the Peruvian Andes.

Vendors and customers are often doubtful about the authenticity of the donkey milk; they constantly question it and observe whether it really is authentic or how to distinguish it. Several passersby

comment that it is not authentic, that it is a hoax for commercial purposes. This perception was confirmed during participant observation. To contrast these doubts, an-interview was conducted, where a saleswoman stated: “If you know, my landlords always know which is donkey milk, goat milk and cow milk, donkey milk is different, it is not as thick as goat milk and cow milk also has a different taste.” From Andean medicine, donkey milk is valued for its healing properties and its link to body balance. In this sense, ancestral wisdom anticipated scientific findings such as those of Bhairav (2020), who points out that “donkey milk contains a very heterogeneous group of molecules including casein, whey proteins, milk fat globule proteins, enzymes and various other minor proteins.” Within this worldview, donkey milk is considered a vital spirit food: its components help to harmonize the organs, strengthen the blood and treat digestive and respiratory imbalances, especially in debilitated children.

This research aims to analyze the essential aspect of donkey milk consumption in the Andes, framed within Andean, folkloric and ancestral medicine. Scientific evidence supports these traditional practices (Martini, 2019) points out that “tolerability is linked to the lower casein content compared to ruminant milks (about 50% of total protein) that give soft clots in the stomach and contribute to better degradability.” The interviewees corroborate modern science. One of them commented: “Some people are surprised when they hear about donkey milk for the first time, but those they know always support me and my countrymen also support me, that is why they give me the milk from their donkeys because they know it cures many diseases”.

3.3.1 Healing testimonies

There are several testimonies about the healing value of donkey milk; however, this information is usually kept in reserve, as it is difficult to identify because it is a product that is not socially

recognized as suitable for consumption. In addition, popular culture tends to associate the donkey—and by extension those who consume its milk—with a supposed lack of intelligence, which generates fear of ridicule and stigma. This situation was evidenced during participant observation, where the silence or discretion of some consumers was noted. In the context of the Peruvian Andes and at the national level, it is recognized that “the decline in breastfeeding rates could have direct implications in the increase of anemia and chronic malnutrition in the country, since breast milk is a crucial source of iron and other micronutrients” (Angulo, 2024). In the face of this problem, donkey milk emerges as an alternative recognized in local knowledge. The interview conducted provides valuable and complementary information: “*The milk should be drunk pure at any time during the day, even before going to sleep, it is good for TB, anemia, lung, asthma, to keep the face young, and also for the brain for students*”.

The stealth consumption of donkey milk in the Peruvian Andes, specifically in Ayacucho—the research site—contrasts markedly with the situation in other countries. For example, “donkey milk consumption is widespread in the Mediterranean region, and its production in the European Union (EU) is estimated at 300 tons. In the last 10 years, donkey breeding for milk production has increased” (Zheleva, 2022). In the local context, there is still reluctance to offer this product openly in authorized markets, due to the scarce dissemination of its nutritional value. This situation is reflected in the testimony of a vendor who, when asked about the inspectors, stated: “*They throw us out when they see that we are selling, because we are street vendors*.” This shows the lack of knowledge that still exists locally about the value of donkey milk in other parts of the world. People buy with suspicion, because a product as important as milk is sold on the street and in plastic containers.

Some testimonies obtained through interviews and participant observation reveal that knowledge about the properties of donkey milk is passed down empirically, inherited from ancestors. This ancestral knowledge is supported by recent research confirming important differences in its composition. For example, Garhwal et al. (2023) state that “compared to the milk of major dairy animals, such as cow, buffalo, goat, camel and sheep, donkey milk has a significantly different composition.” Traditional knowledge guides and justifies its consumption, as expressed by one interviewee: “*Women and men from 18 to 65 years old buy it from me, they buy it as a remedy for their illnesses, those who work in the mine buy a lot from me, they are already my landlords*.” In addition, it is necessary to consider the economic potential that this product represents, as pointed out by Ivanković et al. (2023): “Although the revitalization of the labor function of donkeys is not foreseen, there is a growing opportunity for the economic reaffirmation of local breeds of donkeys through the production and marketing of donkey milk and meat”.

In the testimonies of personal experience of those who have consumed, it is difficult to obtain information because there are certain taboos because donkey is synonymous with clumsiness in popular expression. However, people coming from the countryside express without any problem their experiences of having consumed. These experiences coincide with the scientific research of Albertos et al. (2022), which states that “donkey milk is currently the subject of much research attention due to its similarity to human milk. Its potential benefits to human health have also been studied for its antioxidant and antimicrobial properties.” Furthermore, the above is consistent with what is expressed by a vendor who extracts milk in her

community, where the donkey is now an animal in the process of extinction because it is no longer useful for carrying loads. She says: “*They are not mine; I collect milk from donkeys in the community*.” In her community, the villagers see their extraction and subsequent sale in the informal market of Ayacucho as normal.

As a natural and ancestral medicine, the consumption of donkey milk in the high Andean communities of Peru is seen as normal. People in the city are hesitant because of the way it is marketed, because they do not see the way it is milked, bottled, transported and sold on public roads. Among the villagers, its use is even recommended when they observe children or elderly people suffering from certain ailments, associated with traditional medicine. As expressed in the interview: “*In my village we drink donkey milk, we have known its uses since we were children*.” The sellers and potential consumers in these communities, mostly illiterate and Quechua speakers, are unaware of the scientific properties, but know empirically the healing power of this product. This coincides with Radhakrishnan et al. (2023): “donkey milk is a nutritious alternative for newborns allergic to cow’s milk. The lipids in the milk are nutritionally valuable for the control of the immune response.” From Andean medicine, donkey milk can be considered a functional food, aligned with the body-nature balance principle. Its use in allergic newborns reflects the ancestral knowledge of taking advantage of local resources for healing.

3.4 Local knowledge and cultural persistence as a therapeutic resource

The use of the Quechua language is predominant in the Peruvian Andes, especially in the area where the research was conducted. There, customs are transmitted by a yachaq, a wise man of the people. In this context, it is understood that “the Andean community is predominantly Quechua. The singers or the musical group perform mostly in Quechua, the offers of their products, the exhibition of handicrafts in oral Quechua, the religious rituals also take place in Quechua” (Gutiérrez et al., 2024). The language not only communicates, but also preserves identity, traditions, art and spirituality, showing how the ancestral language articulates all aspects of daily and ritual life. The cultural value and diverse perception of donkey milk consumption is highlighted, as evidenced in the interview: “*Many people do not know about donkey milk, they are surprised; my countrymen, some say it is good, others are ashamed*.” The greater participation of women in the sales was evidenced because they are mothers and have more consumer acceptance. The men help in their community to tame the donkeys and help load the packages onto the bus that goes to the city.

Local knowledge, as a form of ancestral medicine, is not considered a vital element in the Peruvian dairy industry, mainly due to the lack of knowledge and taboos that persist around the consumption of donkey milk. For this reason, donkey milk is sold in an ambulatory and informal way, in the middle of public streets, to those who dare to buy it in view of hundreds of passers-by who pass by the points of sale every day (see Figure 2). In contrast, in some Latin American countries, such as Brazil, donkey milk is in the process of being incorporated into the formal industry. As indicated by Messias et al. (2022), “more studies are still needed to understand the safety and improvement of milk quality to integrate donkey milk into the Brazilian dairy industry.” The research also evidences divided

perceptions about donkey milk: while some value it, others are embarrassed. This reflects the cultural tensions between traditional knowledge and the external gaze, showing how certain ancestral knowledge still faces stigmas for its recognition and social validation.

The process of formalizing the use and sale of donkey milk in the Andes, where villagers have no objection to consuming the products derived from their animals, requires both scientific and sanitary improvements. It is essential to prevent the product from being exposed to the open air without refrigeration. The vendors state that they do not have refrigeration in their homes, so they must sell all the jars or bottles prepared for the day, without the option of preserving the product for later sale. In this context, it should be considered that “the donkey industry improves donkey milk production through nutritional manipulation. However, most previous researchers have focused on dairy cows, and few studies on donkeys are available” (Yue et al., 2022). This quote highlights the lack of adequate infrastructure in the sale of donkey milk, which forces female sellers to market the entire product quickly. It also highlights the paucity of studies and research on improving donkey milk production.

Advances in international research, together with the ancestral knowledge of the Andean peoples of Peru and their native language, Quechua, highlight the cultural importance of this knowledge worldwide. In this context, the testimonies gathered through interviews and participant observation reveal a direct relationship with traditional practices. For example, it is stated that “donkey milk has been used for centuries as a remedy for various ailments, such as asthma, joint pain, gastritis and bronchitis” (Radhakrishnan et al., 2023). During one of the interviews, in which responses are generally monosyllabic, a saleswoman commented: “I sell every day in 28, from

Monday to Friday, also Saturdays and Sundays I sell, every day the milk runs out, there is never any left.” When dealing with a potential customer interested in buying, the saleswomen are usually more accommodating and detailed, explaining in Quechua all the goodness of the milk, in order to sell all the product, since they cannot take back what is not sold to the countryside, its place of origin.

Andean medicine is highly valued by the local population, especially among native speakers of Quechua and other native languages that are currently facing extinction due to urbanization and the advance of medical science. Nevertheless, this ancestral practice is still in force and represents an encouragement for those suffering from diseases considered incurable. According to testimonies, Andean medicine is not as harmful as conventional drugs. In this context, it is corroborated that “Andean medicine is an important health resource for the local population; it is practiced by lay people themselves, great connoisseurs of medicinal plants and animals, and by specialists such as healers, bonesetters and midwives” (Mathez-Stiefel et al., 2012). This work highlights the value of Andean medicine as an essential resource for health in local communities, exercised by both community members and traditional specialists, who preserve and transmit ancestral knowledge on the use of plants, animals and healing techniques that complement or supplement modern medicine.

4 Conclusion

The local belief that donkey milk is consumed only in the Peruvian Andes and Bolivia has been discarded, since its use dates back to ancient times and extends worldwide. The difference and the central contribution



FIGURE 2

A woman from the countryside sells donkey milk on the main street of the city and on public roads.

of this research lies in the rescue of its ancestral value as part of Andean medicine and popular knowledge, areas historically undervalued by modern science and conventional studies on dairy products. Currently, the donkey—formerly a fundamental animal for cargo transport in the Andes—is facing an accelerated decline in its population, especially in the study areas, due to the growth of carriage roads that have reduced its practical usefulness. Nevertheless, in some Andean communities, particularly among rural women, its value has been redefined by recognizing its milk as an effective therapeutic alternative for various ailments that affect human beings. This work confirms the validity and importance of donkey milk both in the Andean context and in other regions of the world, where its study is intensifying due to its medicinal properties and its potential as a substitute for mother's milk.

An essential element that is evident in the research is the lack of knowledge on the part of the municipal authorities, who have not formalized the sale of donkey milk, nor have they provided adequate spaces to guarantee its commercialization in hygienic conditions, free of contamination, despite the fact that it is a product of animal origin with therapeutic value. It takes several hours to transport it from the field, and both the containers and the methods of sale are handmade. It is sold on an itinerant basis, often on the pedestrian walkway of one of the busiest streets in the city of Ayacucho. Since this is a dairy product, it requires proper refrigeration conditions, something that so far is not guaranteed. Public health specialists should warn about the sanitary risks of this informal sales practice. In addition, there is a negative symbolic charge that affects both consumers and sellers. Many villagers consume the milk discreetly, while those who sell it express a certain degree of shame, influenced by stigmatizing beliefs about the donkey, traditionally perceived as a clumsy animal, associated with an image of low intellectual value that reinforces cultural prejudices.

Scientific laboratory research has proven the nutritional and therapeutic value of donkey milk. However, this approach corresponds mainly to biomedical studies. This research, on the other hand, focuses on the ancestral and natural use of donkey milk, valued in Andean contexts as an alternative substitute for mother's milk. This knowledge is supported by the sellers themselves, who have made the commercialization of milk their main source of income in conditions of structural poverty in the Peruvian highlands. They emphasize its benefits compared to conventional medicine, based on knowledge transmitted orally, without any academic support or formal studies, in many cases from a condition of illiteracy or semi-literacy, and expressing themselves only in Quechua or other native languages in danger of extinction. The nutritional and therapeutic value of donkey milk, in this context, is transmitted from generation to generation through the Quechua language, in an oral tradition that preserves ancestral practices. Therefore, it is essential to carry out qualitative research work that systematizes and revalorizes not only the consumption and beliefs associated with this product, but also the extraction process and the necessary care that this milk-producing animal deserves, just like any other animal in the human food system.

Further research is needed on the scientific components of donkey milk in order to formalize its consumption and support its ancestral therapeutic value. Currently, its ambulatory sale and the absence of adequate sanitary conditions weaken the recognition of this traditional knowledge in the face of conventional medicine. One of the main limitations of this research is the lack of scientific systematization of the knowledge, which is transmitted orally and in the Quechua language. During the data collection process, participants are often reluctant to

respond, offering monosyllabic answers, and show fear of possible inspections by the authorities that regulate urban order. In addition, informal sales and the lack of sanitary regulations make access to accurate and reliable information difficult. Added to this is the cultural stigma associated with donkey milk consumption, due to the negative perception of the animal, considered by many as unfit for human consumption, which reinforces social and communicative barriers around its commercialization and use.

Data availability statement

The original contributions presented in the study are included in the article/[Supplementary material](#), further inquiries can be directed to the corresponding author.

Ethics statement

Ethical review and approval was not required for the study on human participants in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study.

Author contributions

EG-G: Conceptualization, Investigation, Methodology, Resources, Supervision, Writing – original draft, Writing – review & editing. JÑ-F: Data curation, Software, Visualization, Writing – original draft, Writing – review & editing, Investigation, Project administration. RG-R: Writing – original draft, Writing – review & editing, Formal analysis, Investigation, Project administration, Supervision, Visualization. JA-B: Writing – original draft, Writing – review & editing, Conceptualization, Formal analysis, Methodology, Visualization. JQ-R: Conceptualization, Resources, Validation, Writing – original draft, Writing – review & editing. FC-U: Data curation, Formal analysis, Funding acquisition, Writing – original draft, Writing – review & editing.

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Supplementary material

The Supplementary material for this article can be found online at: <https://www.frontiersin.org/articles/10.3389/fsufs.2025.1626780/full#supplementary-material>

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