v. 4, n. 36, 2024

International Journal of Human Sciences Research

DAIRY CONSUMPTION: EFFECTS ON HUMAN HEALTH AND ETHICAL IMPLICATIONS FOR ANIMAL WELFARE

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Acceptance date: 16/12/2024

INTRODUCTION

Dairy consumption dates back approximately 6,000 years, when milk began to be processed for food purposes and techniques for its preservation began to be used[1] (Maza, 2011). The emergence of biotechnology and the advance of techniques in the dairy industry brought with it the development of increasingly sophisticated and specific products for the needs of consumers[2]. However, their consumption has also been associated with various pathologies; moreover, current production techniques have ethical implications regarding the welfare and dignity of the animals used in the dairy industry.

In Western societies, above all, the consumption of animal products has been established as normal, natural and necessary (Joy, 2013). This paradigm called *carnism*, which, according to Joy (2013) is based on an invisible belief system, conditions people to feed themselves through certain animals, as well as to elaborate a classification in terms of their usefulness for humans: food, clothing, entertainment, companionship, among others.

Carnism is a paradigm that is deeply rooted. For Smil (2022), eating meat is part of the evolutionary heritage, in which hominid ancestors, for reasons of survival, were carnivores. However, at present, considering the consumption of foods of animal origin as necessary for human welfare, encounters some contradictions and diverse opinions (Sánchez, 2021). Regarding the above, on the one hand, some studies suggest that people can obtain the necessary proteins for the optimal functioning of the organism through the correct combination of foods of plant origin (Quesada and Gomez, 2019; European Food Information Council , 2022). On the other hand, medical evidence has highlighted the effects that certain foods of animal origin have on human health (Physicians Committee for Responsible Medicine, 2024). This article addresses some of these, as well as the ethical implications of dairy industry production techniques on animal welfare, particularly in cows.

DAIRY PRODUCTS AND THEIR EFFECTS ON HUMAN HEALTH

Dairy consumption has been recommended for decades and has been associated with healthy lifestyles. However, several studies on the effects on human health have given rise to different opinions regarding the recommendations for their consumption. In this sense, some consider that they are an essential part of the diet of people in the different stages of life (Aparicio et al., 2019; Salas et al., 2018; Milke, 2011); while others suggest reducing or even dispensing with them due to their association with cardiovascular and gastrointestinal diseases, obesity, osteoporosis, some types of cancer, allergies, among others (Quesada and Gómez, 2019; Dahlke, 2020; Tafalla, 2022; Sánchez, 2023; Physicians Committee for Responsible Medicine, 2024).

Lactose intolerance is a gastrointestinal symptom related to the consumption of dairy products. According to Aparicio (2019) a mutation produced approximately 10,000 years ago, allowed some humans to consume milk in the different stages of life: "(...) thanks to the development of livestock and a mutation that allows us to use lactose, humans were able to incorporate milk as another food in our diet, thus taking advantage of all the nutrients that this food provides us with important health effects in all stages of life" (p. 5).

1. According to Maza (2011), milk production can even be traced back 8,000 years since Mesopotamian peoples tried to domesticate animals for these purposes such as goats, sheep and finally, with the domestication of cattle, these animals were replaced by cows, considered since then as the main source of milk for humans.

2. Through the development of techniques such as pasteurization and standardization at the end of the 19th century, higher quality milk production and lower health risks were achieved (Maza, 2011).

However, to digest milk, humans need to produce the enzyme called lactase. In this regard, Tafalla (2022) mentions that: "Human infants who feed on breast milk produce lactase to digest it. However, when we become adults, our body no longer needs milk, lactase production decreases, which makes it difficult or impossible to assimilate lactase correctly. Therefore, drinking dairy products causes discomfort, and we speak of lactase intolerance" (p. 105). In this sense, it is estimated that 68% of the world's population suffers from intolerance to this enzyme (Storhaug et al., 2017), although for Aparicio (2019) only one third of the population (35%) presents malabsorption of this enzyme.

In addition to the above, the elaboration and production of industrial cheeses and yogurts involves the addition of large amounts of salt, sugars and bad cholesterol (Tafalla, 2022; Sin Azúcar.org s/f; Physicians Committee for Responsible Medicine, 2024;). Moreover, being a source of saturated fats, dairy consumption contributes to the development of cardiovascular and degenerative diseases such as type 1 and 2 diabetes and Alzheimer's disease (Montoya et al., 2023; Physicians Committee for Responsible Medicine, 2024). On the contrary, Aránzazu et al., (2023) consider that only some fatty components of milk (lauric, myristic and palmitic acids) are associated with cardiovascular diseases, as long as they are consumed in isolation and in excess; while some bioactive components of dairy products can have beneficial effects on health and modulate the effect of saturated fats. They also mention that dairy consumption has positive or neutral effects on type 2 diabetes and obesity.

On the contrary, a study conducted by doctors from Harvard Medical School suggests that dairy products have few health benefits for people who consume them and could even become harmful (Willet and Ludwin, 2020). In countries with high consumption of these products such as the United States, New Zealand and Australia, increased development of osteoporosis has been observed (Willet and Ludwin, 2020; Dahlke, 2020). According to Dahlke (2020), the higher the presence of animal proteins, the higher the risk of suffering from this disease; this is due to the fact that: "[...] these proteins increase the degree of acidification of the tissues, and the body must neutralize the acids by using calcium from the bones, with the consequence of a high elimination of calcium through urine" (p. 116).

Therefore, although milk can provide calcium, its assimilation causes a great loss of calcium (Dalhke, 2020; Montoya, et al., 2023). Physicians Committee for Responsible Medicine (2024), recommends the intake of plant-based diets as a source of calcium, without the health risks associated with dairy products. Thus, they suggest including in the diet green leafy vegetables, citrus fruits, legumes, vegetable milks, vitamins K and D, as well as potassium and magnesium as a good source of calcium.

The development of breast, endometrial and prostate cancer is another side effect associated with dairy consumption. In women, it was found that this risk factor is related to the high content of fats and hormones in milk, cheeses and derivatives. In men, it is linked to the consumption of whole milk (Sanchez, 2023; Dalhke, 2020; Fraser et al., 2020; Willet and Ludwing, 2020).

The relationship between cancer and dairy products is due to the fact that a high consumption of dairy and animal proteins can alter the way in which hormones operate and promote their overproduction (Campbell and Campbell, 2004; Dahlke, 2020). Other studies have found that a decrease in these foods and a higher intake of plant-based foods contributes to a decreased risk of the aforementioned

cancers (Physicians Committee for Responsible Medicine, 2024; Tantamango et al., 2016).

Finally, milk consumption is related to the suffering of some allergies, in addition to promoting the appearance of autoimmune diseases, because during the pasteurization process in which the milk from thousands of cows is mixed, a mixture of proteins is created that increasingly overloads the human immune system (Sanchez, 2023; Dalhke, 2020).

According to Sánchez (2023), not all dairy products have the same harmful effects on health and, as we have seen, the scientific evidence regarding their consumption, with both beneficial and adverse results, does not allow sharp conclusions regarding their advantages or disadvantages; however, most of them do not come from healthy sources, but contain large amounts of saturated fats, sugars and antibiotic overload, in addition to the fact that their production involves animal exploitation and environmental pollution.

On the other hand, in the face of arguments regarding the harmful effects on human health, the dairy industry has presented its products as an essential, healthy and functional food, through misleading advertising accompanied by claims regarding its nutritional content (Ruíz, 2021), and images about the treatment of cows and the conditions of milk production, which most of the time are questionable.

Sánchez (2023), considers that it is also a conflict of interest involving the governments of some nations such as the United States and Spain, which promote the consumption of these foods (myplate.gov) and in which their producers have even influenced public health policies and recommendations (myplate.gov; Federación Nacional de Industrias Lácteas [FeNIL], 2024), guaranteeing the continuity of this industry. In this sense, Tafalla (2022) mentions that the dairy industry: "[...] has been building century after century an increasingly powerful business that has ended up becoming a global empire, which not only manages huge amounts of money, but has colonized our culture, has settled in our homes and has become part of our daily habits" (p. 105).

Therefore, it is up to each consumer to inquire about nutritional content, health effects and the sources of this information, as well as to maintain a critical attitude towards marketing and misleading advertising that promotes the consumption of foods that are presented as essential.

Just as the effects on human health give rise to divided opinions regarding the consumption of dairy products, the production techniques employed by this industry represent ethical dilemmas and challenges associated with animal welfare, suffering and dignity.

MILK PRODUCTION: ANIMAL WELFARE AND SUFFERING

Milk is a food that each female mammal produces for her young and is designed to meet the biological needs of each species (Milke, 2011). Once the young are able to feed themselves, they no longer require milk. However, unlike other species, humans are the only ones that consume milk from other animals.

The discourse that the dairy industry has constructed through images and advertisements accompanying dairy products, which show idyllic farms and cows grazing in freedom, suggests that dairy products are exempt from animal cruelty, since their production does not require as such, the slaughter of cows; however, most of these animals spend their entire lives confined in sheds or outdoors, crowded in spaces surrounded by fences where they are fed through mechanical feeders. The ground they walk on is in unsanitary conditions saturated with urine and feces (Joy, 2013; Singer, 2018).

Dairy cows are kept in a permanent state of gestation, artificially fertilized to maximize milk production for human consumption (Joy, 2013; Donaldson and Kymlicka, 2018; Singer, 2018; Nussbaum, 2023). The continuous process of mechanical gestation to which they are subjected has repercussions on their health: weak bones due to lack of calcium, lameness and mastitis (Joy, 2013; Nussbaum, 2023).

Other techniques employed by the dairy industry include the use of genetically altered growth hormones, as well as modification of the cows' herbivorous diet by adding cereals, soybeans, fishmeal, protein, meat and bone meal, and even poultry manure (Singer, 2018; Joy, 2013).

In addition to the physical stress, there is the stress that cows go through when separated from their calves: "[...] cows establish a very strong emotional bond with their calves, which they nurse for a year. However, on dairy farms, calves are separated from their mothers within hours after birth" (Joy, 2013, p. 66). This is because it is not profitable for the industry to feed calves on mother's milk, but the goal of the dairy business is that it is intended for human consumption.

Separation has negative emotional consequences for both cows and calves: "Often the calf has to be separated from the mother and the cow moos hysterically. [...] Like human mothers, cows despair when they cannot find their calves. They moo for days on end, desperately searching for their calves, and sometimes even act violently and kick the workers" (Joy, 2013, p. 66).

In the case of calves, one study showed that separating calves from their mothers altered their cognitive behavior, whereas, if calves were reared with others of their species, their problem-solving response was better (Gaillard, 2014). Likewise, in other studies it was observed that calves experienced emotional pain after being separated from their mothers, resulting in them stopping eating and showing behavior described as pessimism (Bates, 2014; Daros, 2014).

The existence of the dairy industry gives rise to the veal calf industry, which operates using female calves as replacement dairy cows (Crary and Gruen, 2023). While male calves, being of no use to the business, are discarded as soon as they are born, as described by Joy (2013): "Days and even hours after they are born, they are loaded onto a truck, sometimes at a crawl, because they can't walk properly yet. They end up at auctions where they are sometimes sold for as little as $50 to suckling pig meat producers" (p. 67).

Calves, whose average life span is 16 to 18 weeks, are chained by the neck and confined in small crates that prevent them from moving to lie down. When immobilized, they exhibit stereotypical behaviors such as head-butting, kicking, scratching and biting. The pale color that characterizes veal is a consequence of an unnatural diet lacking in iron. As with other intensively reared animals, slaughter methods are cruel and violent, involving stunning (Joy, 2013; Singer, 2018).

According to Crary and Gruen (2023), the decline in veal has caused the dairy industry to send male calves straight to slaughter. Also, small-scale farmers are not exempt from cruel practices such as letting calves starve to death (Crary and Gruen, 2023).

One might think that in small organic and even traditional dairies, cows are raised in conditions of welfare and dignity; however, in most of them, the same techniques are used as in the large-scale dairy industry: artificial insemination, separation of calves, slaughter of male calves, transport under stressful conditions, cruel slaughter and processing. As can be seen, the same mechanisms of violence and cruelty towards these animals are reproduced, as they are part of the system

that conceives them as commodities and resources: "It is not surprising that cows suffer greatly in small dairies, as these cows are part of the usual custom of treating the reproductive capacities, bodies and secretions of cows as commodities for trade" (Crary and Gruen, 2023, p. 47).

Humane husbandry implies a respectful, empathetic treatment in which the animals' capacities are enhanced, their interests and their flourishing as the species they are, as well as their bonds are taken into consideration and, above all, they are considered as valuable beings in themselves, beyond the utility they may represent for humans: "[...] if we see individual cows as containers of satisfaction and consider relevant any perception of them as complex individuals with deep social bonds" (Crary and Gruen, 2023, p. 48). In accordance with the above, recognizing cows and their calves as individuals, giving them a name and close contact with them, brings benefits also to their caretakers, reflected in a higher quantity of milk (King, 2021).

As we have seen, the dairy industry presents various ethical and moral questions, regarding the methods to satisfy the demand for milk consumption. One might therefore ask as Donaldson and Kymlicka (2018) if "Can we imagine a non-exploitative environment for cows; that is, an environment that recognizes them as full citizens and contributes to their prosperity [...] (p. 246)?" (p. 246). The answer is linked to the deconstruction of the image of these animals as producers of milk for human consumption, which has legitimized their use in the dairy industry, promoting the image of these animals as happy beings grazing in idyllic pastures. On the other hand, there are the choices of consumption, from an ethical and critical stance, which inquires about the origin of food and how it is produced.

CONCLUSIONS

The consumption of milk and dairy products has been associated with healthy lifestyles; however, the various studies regarding their benefits, as well as the negative effects on human health, have given rise to diverse opinions regarding the recommendations for their consumption and their benefits.

The production techniques employed by the dairy industry represent ethical dilemmas and challenges associated with the welfare, suffering and dignity of cows and their offspring. The idyllic farms with cows grazing freely, an image promoted by this industry as a consumer advertising strategy, suggests that dairy products are free of cruelty and animal suffering; however, the methods employed involve animal suffering and exploitation.

Therefore, it is necessary to stop conceiving cows as beings whose purpose is to supply the demand for milk and dairy products, and to consider them as sentient beings with their own interests, whose value is not determined by the profitability and benefit of their secretions or their meat.

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