

Social perceptions about the pattern of use of *cachaça* among indigenous peoples of the *Maxakali* ethnic group in Brazil

Percepções sociais sobre o padrão de uso da *cachaça* entre povos indígenas da etnia *Maxakali* no Brasil

Percepciones sociales sobre el patrón de uso de la *cachaça* entre los pueblos indígenas de la etnia *Maxakali* en Brasil

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Abstract

This study shows how it was possible to engage in intersubjective dialogue regarding the replacement of models and uses of Maxakali traditional drinks with a distilled beverage introduced through inter-ethnic contact. A comprehensive phenomenological approach was employed to understand and describe the social perceptions about the use of this distillate. Through thematic analysis, symbols and meanings of alcohol use were interpreted through their daily life histories, recorded by 21 leaders in three focus groups. It could amplify 'subjugated voices' and embarks on a similar venture of researching their villages' leaders from two disenfranchised groups. The findings highlighted that, with the use of sugar cane liquor, some adaptations have occurred in Maxakali alcohol use, with negative consequences for the communities. They revealed how the native drinks have disappeared and the liquor has been inserted into Maxakali cultural system. Considering the subjectivity of the leaders in the process of data collection and analysis, functions regarding the liquor as a social lubricant, facilitator of shamanic trances, knowledge producer, and factor in the relations of gender and age were identified. Those functions were enmeshed in their symbols and meanings regarding their drinking pattern and contexts, as well as a regulator of expressions of violence and enmity. Additional research and

theoretical/methodological alternatives are necessary to investigate the interactions between alcohol use and its ethnic and biopsychosocial synthesis, incorporating the Maxakali way of life into these possibilities.

Keywords: Indians, South American; Alcoholic beverages; Qualitative research.

Resumo

Este estudo mostra como foi possível dialogar intersubjetivamente em relação à substituição de modelos e usos das bebidas tradicionais Maxakali por uma bebida destilada introduzida por meio do contato interétnico. Uma abordagem fenomenológica abrangente foi empregada para compreender e descrever as percepções sociais sobre o uso desse destilado. Por meio da análise temática, os símbolos e significados do uso do álcool foram interpretados por meio de suas histórias de vida cotidianas, registradas por 21 líderes em três grupos focais. Poderia amplificar “vozes subjugadas” e embarcar em um empreendimento semelhante de pesquisar os líderes de suas aldeias de dois grupos desprivilegiados. Os achados destacaram que, com o uso da cachaça, algumas adaptações ocorreram no uso do álcool Maxakali, com consequências negativas para as comunidades. Eles revelaram como as bebidas nativas desapareceram e o licor foi inserido no sistema cultural Maxakali. Considerando a subjetividade das lideranças no processo de coleta e análise de dados, foram identificadas funções em relação ao licor como lubrificante social, facilitador de transe xamânicos, produtor de conhecimento e fator nas relações de gênero e idade. Essas funções estavam enredadas em seus símbolos e significados em relação ao seu padrão de consumo e contextos, bem como reguladoras de expressões de violência e inimizade. Pesquisas adicionais e alternativas teórico-metodológicas são necessárias para investigar as interações entre o uso de álcool e sua síntese étnica e biopsicossocial, incorporando o modo de vida Maxakali a essas possibilidades.

Palavras-chave: Índios sul-americanos; Bebidas alcoólicas; Pesquisa qualitativa.

Resumen

Este estudio muestra cómo fue posible entablar un diálogo intersubjetivo sobre la sustitución de modelos y usos de las bebidas tradicionales Maxakali por una bebida destilada introducida a través del contacto interétnico. Se empleó un enfoque fenomenológico integral para comprender y describir las percepciones sociales sobre el uso de este destilado. A través del análisis temático, se interpretaron los símbolos y significados del consumo de alcohol a través de sus historias de vida cotidiana, registradas por 21 líderes en tres grupos focales. Podría amplificar las 'voces subyugadas' y se embarca en una empresa similar de investigar a los líderes de sus aldeas de dos grupos privados de derechos. Los hallazgos destacaron que, con el uso del licor de caña de azúcar, ocurrieron algunas adaptaciones en el uso del alcohol Maxakali, con consecuencias negativas para las comunidades. Revelaron cómo las bebidas autóctonas han desaparecido y el licor se ha insertado en el sistema cultural Maxakali. Considerando la subjetividad de los líderes en el proceso de recolección y análisis de datos, se identificaron funciones del licor como lubricante social, facilitador de trances chamánicos, productor de conocimiento y factor en las relaciones de género y edad. Esas funciones estaban enredadas en sus símbolos y significados en cuanto a su patrón de consumo y contextos, así como un regulador de las expresiones de violencia y enemistad. Son necesarias investigaciones adicionales y alternativas teórico-metodológicas para investigar las interacciones entre el consumo de alcohol y su síntesis étnica y biopsicossocial, incorporando a estas posibilidades el modo de vida Maxakali.

Palabras clave: Indios sudamericanos; Bebidas alcohólicas; Investigación cualitativa.

1. Introduction

The colonization and Western expansionism in Brazil dissolved and eliminated models and uses of native fermented beverages (NFB). These kinds of beverages come from a fermentation technique based on insalivation, which persisted only in the mestizo population in the Amazon/Brazil (Fernandes, 2004; Fernandes, 2013). During these periods in South America, studies (Fernandes, 2004; Fernandes, 2013) show that, from the clash between cultures and ethnic groups of the Brazilian indigenous peoples (BIP) with 'the others', an ethylic regime emerged that was built up around a distilled beverage, not the NFB. The emergence of this regime focused on distilled alcoholic beverages (Fernandes, 2004), which have a higher alcoholic gradation than NFB (Brasil, 2009; Oliveira et al., 2019), is a phenomenon that needs to be better studied in Brazil (Pena, 2005).

With the introduction of this distilled drink, in particular sugar cane liquor (SCL), Brazilian researchers in this field (Fernandes, 2004; Fernandes, 2013; Souza et al., 2003; Souza, 2013; Ferreira, 2004; Pena, 2005; Quiles & Barros, 2001; Souza & Garnelo, 2007; Souza et al., 2007; Pereira & Ott, 2012; Ghiggi & Langdon, 2014) seek to understand the conceptions regarding these cultural practices. Those practices involve the apprehension of and the symbolic values towards the consumption of these strong distillates, which results in diseases and the marginalization of indigenous peoples.

Anthropological studies (Fernandes, 2004; Fernandes, 2013; Souza et al., 2003; Ferreira, 2004; Souza et al., 2007;

Ghiggi & Langdon, 2014) show that, with the substitution of regimes, BIP have experimented with and continue to experience distilled beverages, which have a disproportionate impact on their health and socio-cultural living. The consequences of these problems have caused serious suffering in the daily life of BIP (Fernandes, 2004; Oliveira et al., 2019; Souza, 2013; Ferreira, 2004; Pena, 2005). What aggravates this situation, even more, is the early use of alcohol by adolescents and the pattern of abusive use (Fernandes, 2004; Fernandes, 2013; Oliveira et al., 2019; Souza, 2013; Souza & Garnelo, 2007; Pereira & Ott, 2012), although these patterns vary among ethnicities and within the same community (Souza, 2013).

The first recording of the use of these distillates among Maxakali indigenous peoples (MIP) was in 1918. It has been recognized that SCL facilitates a change in euphoria, and this change is experienced quicker and is more intense than the effect of the consumption of NFB. SCL consumption also puts the Maxakali in contact with spirits during their rituals. Moreover, in their state of alcoholic trance, they resurrect historical animosities (Ribeiro, 2008). The outcome is signaled by fights and murder among their kinsmen and community members (Popovich, 1980; Álvares, 1992; Rubinger, 1980).

More recently, the consequences of Maxakali alcohol use have been described (Oliveira et al., 2019). It is noted that, with the complete replacement of the NFB by cachaça (SCL), cultural adaptations have been shaped by inter-ethnic contact, related to negative issues for the drinkers and their environment (families, villages, and communities). In daily life (Schutz, 1979), the consequences have manifested through an ethnic and biopsychosocial triad (Schutz, 1979; Geertz, 1989) in the form of accidents, insults, marital disharmony, neglect, violent behaviors, illness, and death (Oliveira et al., 2019).

Although ethnographic studies have recognized that the use of SCL and its consequences among Maxakali (Ribeiro, 2008; Popovich, 1980; Álvares, 1992; Rubinger, 1980) is damaging, the issue still needs to be explored (Oliveira et al., 2019; Pena, 2005) considering the breadth and depth of the theme and the socio-cultural diversity among 305 BIP (Fernandes, 2004; Fernandes, 2013; Souza, 2013; Langdon, 2005). This gap raises three questions: (1) How do the MIP perceive SCL experimentation in their socio-cultural contexts? (2) What are the social perceptions regarding the use of this distillate, which was introduced and perpetuated by inter-ethnic contact? (3) How can the information gathered in answering questions 1 and 2 be integrated into an intercultural sensitive prevention program for alcohol use among MIP?

2. Methodology

Sociohistorical contexts, study population, and theoretical references

Ethnographic studies conducted with the MIP point out that *Tikmũ'ũn* is the native term used for self-designation of *Makoni*, *Monoxó*, *Kapoxó*, *Malali*, *Maxakali*, *Cumanaxó*, and *Panhame* indigenous peoples who all speak *Maxakali* (Ribeiro, 2008; Popovich, 1980), as well as how they are recognized by the Brazilian State through the Maxakali ethos. Before colonization and Western expansionism, these indigenous peoples occupied six valleys located in Northeast Minas Gerais, Southern Bahia, and Northern Espírito Santo States (Ribeiro, 2008; Rubinger, 1980).

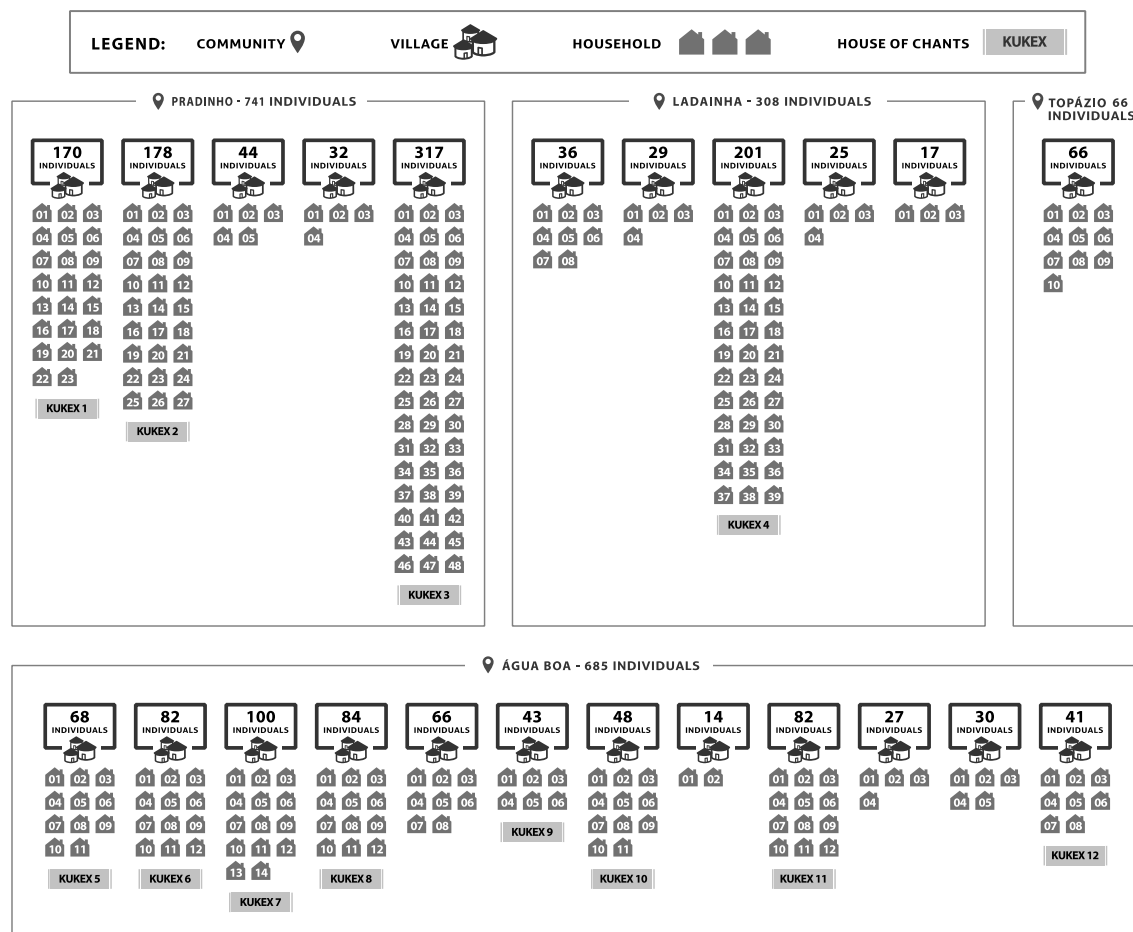
Data on the contact among the remnants of these groups and the regional population are much more detailed as of 1960 (Pena, 2005; Ribeiro, 2008; Rubinger, 1980). However, it was in the Mucuri Valley, Minas Gerais State, during the first decades of the 20th century, that these groups met to resist the attacks against their traditional enemies and non-Indians at the headwaters of the Umburanas river (Pena, 2005; Rubinger, 1980).

Although not all members of each group knew each other, to resist the attacks of non-Indians, studies show that this coexistence was achieved only because of the movement of people and goods. Besides this coexistence, these studies also explain that the formation of these alliances was represented by inter-group marriage (Ribeiro, 2008; Álvares, 1992). Besides kinship interchanged through marriage, the BIP also exchanged ritual songs, which were used to give greater stability to their alliances and to strengthen the coexistence among the representatives of these groups (Ribeiro, 2008; Álvares, 1992; Álvares, 2004).

From six valleys and three states, the *Tikmũ'ũn* nowadays live on just over 6,000 hectares. They comprise one land and

two indigenous reserves, located around four municipalities, in the extreme northeast of Minas Gerais, on the border with the State of Bahia (Pena, 2005). In 2017, for the four communities, the Indigenous Health Care Information System (SIASI) recorded a total of 1,873 Maxakali. Their geo-political-social organization is represented in Figure 1.

Figure 1 - Maxakali social organization: communities, villages, households, and house of chants (*kukex*), 2017.



Source: Authors.

In this study, we sought to broaden the spectrum of theorists who contributed to a theoretical framework on a social action benchmark. In Schutz (Schutz, 1979), we identified concepts that contribute to the understanding of the principles of a comprehensive approach regarding social action. The current relevance of these theoretical notions lies in their ability to understand and (re)interpret reality based on the action and subjectivity of the social actor (Schutz, 1979). Schutz's exposure to basic methods of Husserl's phenomenology and Weber's comprehensive sociology was crucial in defining the theoretical framework as the focus of this study while collecting and analyzing interview records.

According to Schutz (Schutz, 1979), actions are previously planned human conduct whose meanings are produced mentally. It is also understood that only a small part of a person's world knowledge originates from his or her own experience; most of someone's world knowledge is transmitted to him or her by others through their socio-cultural life (Schutz, 1979) who share the same spatial and temporal perceptions (Shkilnyk, 1985).

According to Schutz (Schutz, 1979), the social action of the interviewed *Tikmũ'ün* is a result of their interactions in different multicultural contexts, where those involved mobilize most of the knowledge previously acquired by their ancestors, and, at the same time, the knowledge produces meanings for action in a reflexive process (Schutz, 1979). To understand this reality and to describe the characteristics of those who experience the SCL experimentation, we added some cultural issues to

the comprehensive phenomenology. Maxakali cosmological values were included in the ethnic and biopsychosocial characteristics described by Schutz (Schutz, 1979; Minayo, 2010).

The belief about culture as a fluid system, which is open to reinterpretation, guides the idea that the meanings attributed to alcohol use can be apprehended only by using the understanding of the historical and contemporary conditions of the Maxakali's life, as well as their changes produced by subjects sharing the same web of meanings (Geertz, 1989) in time and space (Shkilnyk, 1985). In addition to assuming culture as a system opened to reinterpretation (Geertz, 1989), it is also assumed that culture determines how people will think, act, and imagine (Shkilnyk, 1985) in this intergenerational web of meanings (Geertz, 1989).

In the meantime, SCL experimentation ceases to be perceived as a set of immutable physical and biological symptoms observed in the empirical world. It is better understood as a subjective process (Oliveira et al., 2019; Souza & Garnelo, 2007) built up through interactions of sets of symbols and meanings (Schutz, 1979) brought from the *Makoni*, *Monoxo*, *Kapoxo*, *Malali*, *Maxakali*, *Cumanaxó*, and *Panhame* and experienced intersubjectively by *Tikmũ'ũn* in their socio-cultural contexts (Schutz, 1979) by the contemporary *Maxakali* (Oliveira et al., 2019; Pena, 2005; Ribeiro, 2008; Popovich, 1980; Álvares, 1992).

Complementarily, besides Schutz (Schutz, 1979) and Geertz (Geertz, 1989), the contributions of North American researchers (Shkilnyk, 1985; Edwards et al., 2005; Kunitiz, 2006; Spycer, 1997; Whitesell et al., 2014; Whitesell et al., 2012), Latin-American researchers (Fernandes, 2004; Fernandes, 2013; Souza et al., 2003; Ferreira, 2004; Quiles & Barros, 2001; Souza & Garnelo, 2007; Souza et al., 2007; Ghiggi & Langdon, 2014; Oyacer & Nanco, 1998; Menendez, 1982), and the ethnographic *Maxakali* literature (Pena, 2005; Ribeiro, 2008; Popovich, 1980; Álvares, 1992; Rubinger, 1980; Álvares, 2004) also shaped the data collection and analysis strategies of this research.

Qualitative Data collection

We began by understanding the *Maxakali* lived realities discussed in three focus groups, herein called story wheels about alcohol (SWA), a methodology already described in another study (Oliveira et al., 2019). From the SWA, we gathered significant descriptions of *Maxakali* leaders regarding their experiences with SCL, which could be understood and unveiled in their essence.

Purposeful selection of participants obtained community representation (Turato, 2003). Seven leaders did not attend SWA on account of their social agendas. The SWA were conducted with 21 leaders who live on the reservations. Some held one or more positions, such as teacher (7), village leader (4), indigenous health provider (4), or sanitation officer (3); there were also two shamans and a councilwoman. They were divided into three SWA. We worked with five women (26 to 40 years old) and 16 men (24 to 51 years old). Overall, they represent the two largest communities and nine villages of MIP.

Data collection began after all participants provided written informed consent. The SWAs were carried out and coordinated by the first and last authors of this study with the help of an observer, using an interview script.

Following the SWA phases, we read the story "The *Kaxmuk* (SCL) in my village" (Figure 2).

Figure 2 - Story: 'The Kaxmuk (SCL) in my village'.

'The Kaxmuk in my village'
<p>In my village, I saw from an early age a Tihik (Indian) drinking kaxmuk. Many start to drink very early on in their life. They drink at village parties to lose their shame, to dance, and for dating; they drink with village friends to celebrate events such as after hunting, after harvesting, or just to have fun after a soccer game. A Tihik also goes to other villages to drink with other relatives who have kaxmuk. The others sometimes drink in the city at Andihik (non-Indian) parties or when they travel. A Tihik buys kaxmuk in the city. If a Tihik does not have money, he drinks along with those who have some kaxmuk. There are some Tihiks who do not even want to drink, but if another Tihik who has cachaça invites him, then he has to join him and they drink together. After a Tihik learns to drink, it is very difficult to stop, because the others keep on inviting him. I have already seen a Tihik inviting a ugtok (child) and nhandã (elderly person) to get together to drink Kaxmuk. Another point is that a Tihik does not drink like an Andihik drinks. Andihik drink from a glass, but a Tihik drinks straight from the bottle spout (disposable pet bottle) and passes it to the others until it is finished. There is a Tihik who drinks casually. He or she drinks at most three days a month; some drink moderately from seven to 10 days per month, and others drink heavily, approximately 15 to 20 or more days per month. A Tihik always drinks until the bottle is empty. A Tihik does not save kaxmuk at home like an Andihik does; the Tihik buys and drinks the bottle until it is empty. A Tihik does not drink a small amount of Kaxmuk; he drinks kaxmuk until he becomes papitui (drunk) and agitated. There is also a Tihik who drinks just to get courage. Sometimes a Tihik drinks and even loses consciousness, causes quarrels, talks without meaning, lacks respect for other people, and causes sadness in his family.</p>

Source: Authors.

Subsequently, we asked the following: 'What did you feel when you heard the story?'; 'How was it to listen to this story?'; 'I want to hear you tell me the Kaxmuk story from your village.' When the groups finished their stories, a debate began to clarify any doubts about the issues discussed. The interviews were conducted in Portuguese and/or the Maxakali language, and they were recorded in audio format and later used for analysis.

Following the assumptions of the thematic analysis of Boyatzis (Boyatzis, 1998), two researchers began analyzing narratives through floating reading. Through the fragmentation of the contents of the stories and debates, they developed a coding system, which was later discussed and refined in consensus. This method served as a basis for the following analyses, and it was reformulated whenever the analysis and emergence of new themes occurred. The coding and grouping of the data, including the identification of categories, which developed into themes, evolved until reaching the theoretical saturation of the data.

For ethical reasons, the names of the interviewees and their villages were omitted in this study. This research was approved by the Research Ethics Committee of the Federal University of Minas Gerais and by the National Commission of Ethics in Research, CAAE-1.438.160.

3. Findings

Sugar cane liquor consumption: Ceremonial use, gender, age, and social knowledge acquisition

Regarding the historical consumption, the female leader said:

I grew up in Maxakali culture. Formerly, we had potato and green corn beverages that were made to use in the rituals. We also had a cajá drink (a fruit from the tropical forest) blended in coconut water. We also used to make garapa (sugar cane water) and mixed it with some palm coconuts. These were the drinks we used to drink during the religious rituals, although they were drunk as a food. The women used to make a pot, from that height (in order to show the height of the pot, she put her hand at the height of her head).

Although studies have reported the use of SCL within the house of chants (Ribeiro, 2008; Tugny, 2007), these findings have highlighted the divergence among villages as to their use during rituals, as one leader reported: 'In our culture, there is no cachaça during the rituals. I teach religion, but during the rituals I do not want anyone to drink it, because it disturbs the ritual'.

One point supported by other studies has to do with the possible existence of a controlled type of SCL use during rituals. As one leader described, 'If you have rituals, there is no drink. When I was a kid, we did not see anything, because the shamans would not let us see. Nowadays, when there is a drink, the mothers and shamans tell and explain the ritual stories. Then they calm down. If you have a drink, the ritual stops and only starts another day'.

It is noticed in the quote above that during an interruption of the ritual activities, the mother and the shaman are responsible to calm down the participant who made use of SCL and is not behaving according to the ritual. Therefore, in some other villages, SCL use is accepted: 'When there are rituals in our village, we take cachaça to the house of chants to make us more cheerful, but there is no disagreement. We were all happy in the house of chants until the sunrise'.

After discussions about the first alcohol use in SWA, the leaders did not directly link it to ceremonial use regarding male initiation, but they pointed out differences between age and gender for initiation and consumption: 'Teenagers at the age of seven do not drink it. Some families offer cachaça at the age of seven years, and if he drinks, he cannot handle it and falls. Now there is a nine-year-old teenager who already starts getting used to drinking'.

While telling stories of their villages, the female leaders described the use of SCL among women with reservations:

In my life, since I was very young, my parents did never sad that female child would drink sugar cane liquor. The mothers would not let a child drink. They said, 'You cannot even see the smell.' And today in my village, I will not talk about women, because they do not drink. The girls, my granddaughters, none of them drinks.

Regarding sex, a leader pointed out some differences: 'In my brother-in-law's village, there is a Maxakali monk who has a good ritual. There, young girls do not drink cachaça; women drink a little; young boys drink a lot'.

However, the female pattern of drinking is different among villages, as one leader reported: 'There is a village where some women drink, but they drink just a little. But some drink a lot: 'Besides my brother, another who drinks is my sister. When she drinks, she drinks for a whole week. Just on Saturday when she stops drinking. After that, she goes a month without drinking. This female pattern of alcohol consumption corroborates the findings of other research conducted with the Tenharim (Pereira & Ott, 2012), Bororo (Quiles & Barros, 2001), Tukáno, Aruák, Makú/AM (Souza & Garnelo, 2007; Souza et al., 2007), and Kaingáng (Souza et al., 2003) indigenous peoples.

As reported by a male leader: 'When I was five years old, I was learning about our culture. I had never tried sugar cane liquor. I only saw my father drinking because he was older. My father, while drinking sugar cane liquor, taught me the ritual songs and told stories of our ancestors.

One leader reported as follows: 'I got married, and my wife had a little baby. We were under postpartum care, and my father went out to the town and bought sugar cane liquor, and came to visit us. He gave me cachaça to teach me some songs of the Bat and the Hawk rituals'.

In the domestic context, SCL seems to be used to transfer and produce cultural knowledge: 'My father came to visit us. He gave me cachaça to teach me more ritual songs.'

The Maxakali pattern of drinking

Although respecting rules concerning age and gender, since large amounts are ingested during parties and drinkers stop only when all SCL is gone or they become unconscious, the pattern is similar to the one narrated in the Maxakali stories:

I've noticed the white man; he drinks a little bit. And then he says: 'Where is the lemon?' We Maxakali drink sugar cane liquor, but we do not have control. Maxakali takes the big pipe (disposable bottle) and drink until it is finished or falls to the ground. And the next day, if I wake up with a hangover, I go back and search for more. In my village, my brother drinks a lot! He and his children. When they want to drink, they drink Monday, Tuesday, Wednesday, Thursday, and Friday; on Saturday, they finish and cure their hangover. Then they go for a month without drinking. Today, I drink a full glass, and right afterward I drink it again. My brother-in-law drinks three glasses, and then he loses control of his head. On the second day of drinking, there are some Maxakali whose hands start to bend; they see snakes; they see a lot of things. When they have this kind of vision, they cannot sleep. So, I go there and cover them with a blanket, because they say it's getting cold. They still talk to you like this: 'I have a hangover. I drank five days in a row.' I say: 'That's all right; we'll stop drinking.' Everyone stays quiet for the whole week, up to a month; everyone is still.

Where sugar cane liquor use is learned by Maxakali and with whom they drink

According to leaders' reports, women are more likely not to drink because of their responsibilities to their family members, as reported:

The married women do not drink and do not like to see their husbands drink. There are some wives who do not let their husbands drink. They worry about their husbands; they do not want them to get hurt or get into trouble. They and their husbands have to take care of the children, tend crops, participate in rituals, and help the community, and the cachaça does not allow that. The sugar cane only brings problems into the house.

Studies suggest that the low prevalence of alcohol use among women may be related to day-to-day responsibilities and the duties of the roles assigned to indigenous women (Pereira & Ott, 2012; Kunitiz, 2006). These responsibilities are reinforced by a female leader: 'My father used to drink cachaça. But he never said anything like, "Come on over and have a drink with me." He would say, "You are a woman; you will take care of your children because your brothers will not take care of your children".

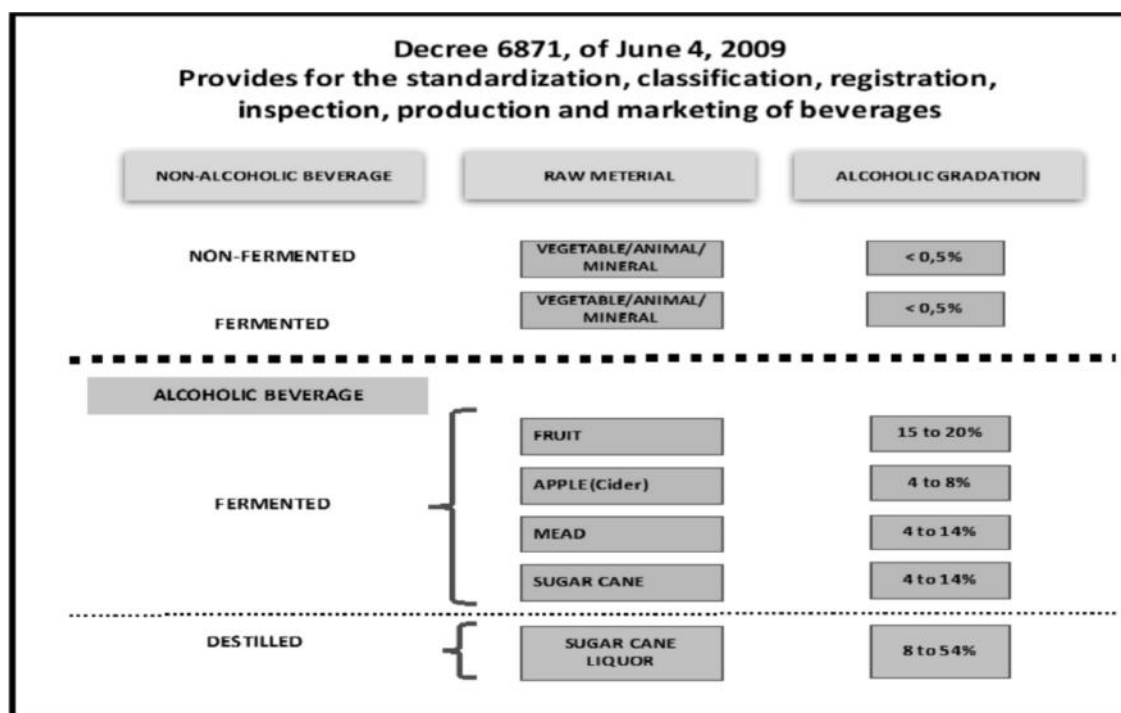
Two leaders pointed out two examples, the first regarding the use of SCL by a mother: 'There is a mother who drinks and thinks like this: "I will offer it to my children so they will not be against my drinking or against us. They'll take it, and they'll be fine with us." But the matter is, she is teaching her son to drink sugar cane liquor.' The second example regards SCL use by both parents: 'The father speaks like this: "I am drinking; your mother is drinking; why do you not want to drink with us?" Then, the child goes and drinks'. According to the interviewees, when parents drink, they expose behavioral models that are socialized with their children. As one leader reported: 'If the mother drinks with her husband, her sons and daughters will drink.'

4. Discussion

Sugar cane liquor consumption: Ceremonial use, gender, age, and social knowledge acquisition

Studies regarding the age at which alcohol use begins among BIP have taken into account the trials associated with their ceremonies (Fernandes, 2004; Souza et al., 2003; Souza & Garnelo, 2007), as well as gender and age roles (Edwards et al., 2005; Whitesell et al., 2012). Souza and Garnelo (S2007), studying when, how, and what is drunk among the Rio Negros/AM Indians, highlighted the types of drinks, their alcoholic gradation, and the contexts in which they are drunk. Two types of traditional drinks were recognized. The first is related to the native food infrastructure. It is formed by low-fermentation drinks, which are beverages with a low alcohol gradation. According to the authors, these kinds of drinks are presented as 'food drinks', which are consumed from early childhood in their rituals (Souza & Garnelo, 2007). The second type is constituted by the same fermented beverages, although with a high alcohol gradation. Its use begins at about 12 to 15 years of age in rituals or recreational situations. The use in this age group is linked to male initiation ceremonies (Souza & Garnelo, 2007) (Figure 3).

Figure 3 - Classification of beverages and alcoholic gradation at 20°C, Brazil, 2009.



Source: Authors.

For the *Maxakali*, consumption of traditional fermented drinks, considered a type of food, has disappeared. The use of these beverages in the rituals was described as like a mythical past, as when Álvares (1992) describes the myth of the Parrot or as a historical consumption, as described by a female leader with more than 40-year interviewed. According to the myth, when the *Maxakali* gathers in the Parrot ritual, the women make clay pots in which they cook their food and make their fermented beverages. Before the ritual, the parrot spirits bring the corn to the women, who chew it and throw it into a large pot of clay. The next day, the spirits of the Parrot take the corn kettle to the house of chants.

This story goes back to the past to a time when the *Maxakali* were not used to drinking white beverages. They had their drink, which was made of corn, and the caterpillar head of bamboo. These beverages were drunk to release ritual chants (Maxakali et al., 2008).

There are no studies regarding the use of fermented drinks (low alcohol gradation) in the *Maxakali* male initiation ceremonies. The use of *cauim*—a fermented drink prepared with chewed manioc or corn, sometimes mixed with various fruits or honey—is reported briefly by Pena (Pena, 2005), but without reference to ceremonial use.

The findings of this study diverge from reports by Pena (Pena, 2005). In his study, regarding access to SCL, he highlighted that there is no distinction between sex, as well as the age of access for 12-year-old girls (Pena, 2005).

Despite the differences between the use of alcohol and the secrets of the house of chants, in accordance with the findings, the use seems to occur in a controlled fashion. In this way, norms and attitudes are expected according to what the culture determines in each group (Geertz, 1989) regarding its way of thinking, acting, and imagining (Geertz, 1989; Shkilnyk, 1985). Therefore, not allowing clutter or fights during the *Maxakali* ritual is behavioral etiquette of humans and spirits.

Anthropological studies (Ribeiro, 2008; Popovich, 1980; Álvares, 1992; Álvares, 2004) emphasize that in the *Maxakali* cosmological life cycle, the child receives his spirit at birth. In possession of his spirit, this child will prepare for the male initiation ceremony. This entails receiving a song from one of his parents or relatives (grandparents, older brother, or uncle). The child should remember it and know how to sing it without hesitation during the initiation ceremony (Ribeiro, 2008; Popovich, 1980; Álvares, 1992; Álvares, 2004).

The possession of a chant can occur only through knowledge as part of a long learning process that begins in childhood, even before the initiation ritual (Ribeiro, 2008; Popovich, 1980; Álvares, 1992; Álvares, 2004).

This special learning, which is usually taught by a father or grandfather, is kept within the kinship group as part of its heritage (Fernandes, 2013; Popovich, 1980; Álvares, 1992).

After the male initiation ceremony, it is incumbent upon adult and elderly men in the house of chants to teach the boys the knowledge and secrets of the rituals, the entities that sing in their rituals, and the groups of singer spirits who visit the house of chants (Álvares, 1992; Álvares, 2004). The girls do not go through initiation (Popovich, 1980; Álvares, 2004), since only the *Maxakali* men, all of them, are xammans (Álvares, 2004); however, marriage for some girls begins at age (Pereira & Ott, 2012).

The findings of this study highlight that the social function of alcohol use regarding the roles of parents and grandfathers in the transmission of knowledge is an important aspect of the shamanic life of their children and grandchildren. It is expected from the son to listen to what his father says and also to learn and value the cultural beliefs told by his dad (Popovich, 1980). Thereby, the son will maintain the knowledge through an intergenerational web of meanings, which determines his way of thinking, acting, and imagining (Shkilnyk, 1985) as a true *Maxakali* (Álvares, 1992; Álvares, 2004).

From the reports of the SWA analysis, it is apparent that, in the context of the rituals, the SCL can be seen as a vehicle that 'we take the cachaça to the house of chants', it (SCL) is a substitute for traditional drinks that 'women used to make such a bottle', and nowadays it acts as a reinforcement of the social relations of families and allies for rituals (Ribeiro, 2008; Álvares, 1992; Álvares, 2004).

As with the *Maxakali* described here, Ferreira (Ferreira, 2004) reveals a similar use of cachaça among the *Mbyá* indigenous people. She pointed out that what leads a person to drink is a sensation experienced by the drinker, whereby he or she demonstrates knowledge: 'My father while drinking, taught me the religious song and told me the story of our ancestors.'

The Maxakali pattern of drinking







Patterns of alcohol consumption among the Rio Negro/AM, (Souza & Garnelo, 2007) Tenharim (Pereira & Ott, 2012), Bororo (Quiles & Barros, 2011), and Kaingáng (Souza et al., 2003) indigenous peoples have been interpreted as intense social consumption.

The consumption of the cachaça, to drink until to the end, as described to Kaxiri consumption by Rionegrino/AM (Souza & Garnelo, 2007) or to kiki consumption to the Kaingáng (Souza et al., 2003) seems to have also been assumed by the *Maxakali*: 'Maxakali pick up the pipe and drink until it is finished or falls to the ground'. This pattern of consumption, 'heavy drinking', is described as an unhealthy or dangerous way to drink. The alcoholic does things that he or she would not normally do if he or she were not drinking, such as driving a car or riding a motorcycle at high speed, attempting suicide due to mood swings, behaving violently, and exhibiting long-term emotional problems (DSM-V, 2013; OMS, 1993).

Assuming that the traditional drink has been replaced by the distilled drink, the transposed logic must also be analyzed in an interdisciplinary way in terms of the amount of pure alcohol ingested and the respective effects on the body. Therefore, we compared the amount of pure alcohol from SCL to the traditional fermented beverage. For this comparison, we used Pilsen beer, a non-NFB whose alcoholic gradation value is within the limits of the gradations of fermented beverages (Brasil, 2009).

If 'my brother-in-law drinks three glasses', we have in three glasses 540 ml of cachaça, with 40% alcohol at 20°C. This amount represents 216 ml of pure alcohol, equivalent to drinking 25.5 glasses of beer with 4.7% alcohol (4.7% represents the average alcoholic gradation from four kinds of Brazilian beers and one imported beer). If we convert 216 ml of pure alcohol into grams, we will have 172.8 g of pure alcohol. Considering 172.8 g of pure alcohol consumed, we have the equivalent of 0.17 g of alcohol per 100 ml of circulating blood in a 70-kg man. The effects of this amount of alcohol are described in Figure 4.

Figure 4 - Alcohol consumption and its effect on the body.

DISTILLED DRINK GLASSES OF SUGAR CANE LIQUOR (g/100ml)	FERMENTED DRINK GLASSES OF PILSEN BEER (g/100ml)	CAS (g/100ml)	EFFECTS ON THE BODY
 0,06***	 1293,62ml**	0,01 - 0,05*	Slight feeling of euphoria, relaxation, and pleasure
			Decreased ability to discern and loss of inhibition
			Incoherent behavior when performing tasks
			Decreased functions from various nerve centers
			Increased cardiac and respiratory rhythms
		0,06 - 0,10*	Physiological numbness of almost all systems
			Decreased attention and vigilance, slower reflexes, poor coordination, and reduced muscle strength
			Reduced ability to make rational or discerning decisions
			Growing feeling of anxiety and depression
			Decreased patience
 0,121***	 3234,04ml**	0,10 - 0,15*	Considerably slower reflexes
			Problems with balance and movement
			Changes of some visual functions
			Dragging speech
			Vomiting, especially if this blood alcohol level is reached rapidly
 0,182***	 4851,06ml**	0,16 - 0,29*	Severe sensory disorders, including reduced awareness of external stimuli
			Severe changes in motor coordination, with a tendency to stagger and fall frequently
		0,30 - 0,39*	Deep lethargy
			Loss of consciousness
			State of sedation comparable to surgical anaesthesia
			Death (in many cases)
		≥ 0,40*	Unconsciousness
			Respiratory failure
			Death, usually caused by respiratory insufficiency

Subtitle:

CAS: Chemical Abstract Service

* grams of pure alcohol per 100 ml of blood in a 70-kg man.

** Glasses with a capacity of 190 ml of Pilsen beer with 4.7% alcohol content.

*** grams of pure alcohol per 100 ml of blood in a man of 70 kg per cup with capacity of 190 ml of Boazinha sugar cane liquor with 40%.

Note: The body takes an average of one hour to absorb the alcohol. The time and effects vary according to the speed of drinking, eating before drinking, and the type of food ingested, as well as the weight, height, physique, age, and gender of the drinker.

Source: World Health Organization, Ministry of Health, Health and Alcohol Information Center (CISA)

The Maxakali drinking pattern does not follow the same standards as the general population. The Maxakali drink intermittently, as they spend short or long periods without drinking: ‘Afterwards, they (Maxakali) go for a month without drinking’. This drinking pattern would surely trigger abstinence syndrome in alcoholics of the general population, which is not the case with the Maxakali. This intermittent consumption in the development of disorders related to alcohol use among BIP has been the subject of debate and corroborates the findings of other studies (Souza, 2013; Quiles & Barros, 2001).

Ribeiro (Ribeiro, 2008) asserts that the emergence of conflicts, which are usually evoked by the risk of the disappearance of these people, cannot be interpreted under a purely negative bias. For the most part, the joining of several indigenous peoples who form the Maxakali ethos may be the expression of a style of political action in which collisions are made to expire (Ribeiro, 2008). Researchers point out that if we want to establish programs for the prevention and treatment of disorders related to alcohol use among BIP, it is fundamental to investigate the particular manifestations and contexts of drinking, moving the theme to the collective/social field and considering with whom, how, where, and when one drinks in the native view (Fernandes, 2004; Souza et al., 2003; Souza, 2013; Ferreira, 2004; Souza & Garnelo, 2007; Pereira & Ott, 2012; Ghiggi & Langdon, 2014), since the act of drinking is conduct that cannot be defined or judged outside its socio-cultural context (Oyacer & Nanco, 1998; Menendez, 1982).

Where sugar cane liquor use is learned by Maxakali and with whom they drink

In the studies of alcohol use among indigenous peoples, Eittle et al. (Eittle et al., 2013) emphasize that the family, as a dynamic and unique context for individual development, has been a neglected topic. Among indigenous peoples, there is an enormous diversity of family and kinship systems. Members of these systems help and protect each other; their collective responsibilities for the actions of others regulate individual behavior (Swain et al., 2011). This collective responsibility model the collective behaviors in society.

Popovich (Popovich, 1980), studying marriages and kinship relationships, and Alvares (Álvares, 1992; Álvares, 2004), studying social organization, observed that each level of Maxakali kinship carries a set of definitions, roles, and responsibilities for conduct. Each level has an information depository as well as an instrument that leads to action, bringing with it many expectations and behavioral norms (Popovich, 1980; Álvares, 1992).

According to Swain et al. (Swain et al., 2011), maternity emerges as a particular factor of protection from alcohol consumption, which is reinforced by the report of a leader: ‘When the father drinks and the mother do not drink, the mother still cares for the child and does not pay attention to the father. Why then do the wife of my cousin and my sister-in-law not have children with malnutrition? Because they do not drink’.

Studies with American Indians (Swain et al., 2011) have highlighted that in families where one or both parents are heavy drinkers, the risk is increased for their children's alcohol consumption. The disorders related to alcohol use by both parents were associated with the presence of 18-year-old children with alcohol-related problems. In addition, there is an increased risk of these disorders in children whose parents drink around four to nine times for men and two to three times for women (Swain et al., 2011).

Considering possible prevention strategies for and with the Maxakali, the findings of this study present challenges that must be overcome by the therapeutic approaches available to the general population. The relationship between gender and age at the beginning of SCL use, for example, brings to light the cultural complexities that we highlight. First: ‘...has a family that offers a drink to seven-year-old boys’; second: ‘Young girls do not drink; young boys drink a lot.’; third: ‘Today, in my village, the girls, and my granddaughters, none of them drinks’; and fourth: ‘Today, few women drink. And they do not drink too much.’

Prussing and Gone (Prussing & Gone, 2011) studied the issues regarding gender and age in a cultural context for the treatment of alcohol use among Canadian and American Indians. They pointed out a process that has become especially visible

in recent decades: Indigenous communities around the world are working to decolonize their health services. These communities have seen that the causes of health problems reflect colonial legacies, such as the multigenerational effects caused by the disappearance of their models and uses of native drinks and the introduction of distillates into their daily lives (Prussing & Gone, 2011).

To fully respond to such multifaceted and changing needs requires a more detailed understanding of how socio-cultural contexts can affect an intercultural sensitive prevention program for alcohol use (Fernandes, 2004; Fernandes, 2013; Souza et al., 2003; Ferreira, 2004; Pena, 2005; Quiles & Barros, 2001; Souza & Garnelo, 2007; Souza et al., 2007; Pereira & Ott, 2012; Ghiggi & Langdon, 2014) of the Maxakali. With regard to alcohol, for example, community members can mix drinking and sobriety with local meanings that circulate, interact, and produce social consequences that, in turn, generate new layers of meaning in a continuous process that influences how, why, and for whom particular therapeutic approaches can be culturally planned (5, 7, 9, 10, 12, 29, 30).

Under the Brazilian Indigenous Health System, these meanings can take different forms and shape substance abuse services in up to 305 different ways (Souza et al., 2003; Ferreira, 2004; Quiles & Barros, 2001; Souza & Garnelo, 2007; Pereira & Ott, 2012; Ghiggi & Langdon, 2014). Greater attention to this ethnic pluricultural requires rethinking the generalized characterization of the sensitive intercultural prevention and treatment needs of children and adolescents. Together with the Maxakali, indigenous health providers must develop a more nuanced understanding of the experiences of young girls, women, and young boys as members of this complex cultural multiplicity of the Maxakali.

5. Conclusions

It is essential for providers working in the Maxakali health and social protection networks to understand the legacies of colonization and expansionism in Brazil (Oliveira et al., 2019; Pena, 2005; Ribeiro, 2008), especially the ethnonym (Ribeiro, 2008; Popovich, 1980), the history of inter-ethnic contact (Pena, 2005), and the cosmology (Álvares, 1992; Álvares, 2004) that have shaped the current Maxakali alcohol regime (Ribeiro, 2008; Rubinger, 1980). Therefore, it is necessary to better address the ways in which the native beverages have disappeared and the distillate has been inserted into the Maxakali cultural systems, as well as to better understand the functions of this distillate drink as a social lubricant, facilitator of shamanic trances, factor in gender and age relations, and regulator of expressions of violence and enmity (Oliveira et al., 2019).

Reflecting on such legacies (Fernandes, 2004; Fernandes, 2013) represents a fundamental step in the management of the Brazilian Indigenous Health System and the psychosocial network (Ghiggi & Langdon, 2014) to understand the ways in which the majority society and the Maxakali had related in this clash of cultures around the ethical experience imposed by inter-ethnic contact (Fernandes, 2004; Fernandes, 2013). It is important to reaffirm that the inter-ethnic contact process does not represent a one-way street: the cultural change suffered by the Maxakali did not have only one side, nor was it commanded solely by the intentions and strategies of colonizers and representatives of the expansion fronts; it has been as an extensive process of resistance (Oliveira et al., 2019; Pena, 2005; Ribeiro, 2008; Rubinger, 1980) of the Maxakali people as well as a mutual discovery process that continues today.

It is necessary to use other theoretical/methodological approaches and alternatives to investigate the interactions between SCL use and its ethnic and biopsychosocial synthesis (Oliveira et al., 2019). Additionally, it is necessary to incorporate the Maxakali way of life (Fernandes, 2013; Schutz, 1979) into these possibilities (Fernandes, 2013) with its living and pulsating multiplicity (Ribeiro, 2008), as its culture is a fluid system that evolves over time (Geertz, 1989) and determines the way a true Maxakali (Álvares, 1992; Álvares, 2004) thinks, acts, and conceptualizes (Geertz, 1989) time and space (Shkilnyk, 1985).

References

- Álvares, M. M. (1992). *Yãmiy, os espíritos do canto: a construção da pessoa na sociedade Maxakali* (thesis). UNICAMP.
- Álvares, M. M. (2004). Kitoko Maxakali: a criança indígena e os processos de formação, aprendizagem e escolarização. *Revista ANTHROPOLÓGICAS*; 8;15(1):49-78.
- Boyatzis, R. E. (1998). *Transforming qualitative information: thematic analysis and code development*. California: Sage Publications Ltd.
- Brasil. (2009). Decreto no 6.871, de 04 de junho. Dispõe sobre a padronização, a classificação, o registro, a inspeção, a produção e a comercialização de bebidas. Diário Oficial da União 2009; 05 jun.
- DSM-V. (2013). Diagnostic and Statistical Manual of Mental Disorders, 5th Edition: DSM-5. American Psychiatric Association's classification and diagnostic tool.
- Dessen, M. A., & Silva Neto, N. A. (2000). Questões de Família e Desenvolvimento e a Prática de Pesquisa. *Psic.: Teor. e Pesq*; 16(3):191-292.
- Edwards, G., Marshall, E. J., & Cook, C. C. H. (2005). *O tratamento para o alcoolismo: um guia para profissionais de saúde*. (4a ed.) Artmed.
- Eitle T. M., Johnson-Jennings, M., & Eitle, D. (2013). Family structure and adolescent alcohol use problems: Extending popular explanations to American Indians. *C. Soc Sci Res*; 42(6):146-1479.
- Fernandes, J. A. (2004). *Selvagens Bebedeiras: Álcool, embriaguez e contatos culturais no Brasil Colonial*. (dissertation). Universidade Federal Fluminense.
- Fernandes, J. A. (2013). *Cauinagens e bebedeiras: os índios e o álcool na história do Brasil*. In: Souza MLP. *Processos de alcoolização indígena no Brasil: perspectivas plurais*. Rio de Janeiro: Editora Fiocruz; pp. 47-64.
- Ferreira, L. O. (2004). O "fazer antropológico" em ações voltadas para a redução do uso abusivo de bebidas alcoólicas entre os Mbyá-Guarani, no Rio Grande do Sul. In: Langdon EJ, Garnelo L, organizadores. *Saúde dos Povos Indígenas: Reflexões sobre antropologia participativa*. Contra Capa; pp. 89-110.
- Geertz, C. (1989). *A interpretação das culturas*. Rio de Janeiro: Livros Técnicos e Científicos Editora.
- Ghiggi Junior, A., & Langdon, E. J. (2014). Reflexões sobre estratégias de intervenção a partir do processo de alcoolização e das práticas de autoatenção entre os índios Kaingang, Santa Catarina, Brasil. *Cad Saude Publica*;30(6):1-10.
- Kitzinger, J. (1995). Qualitative Research: Introducing focus groups. *British Medical Journal*; 3(1):311-299.
- Kunitiz, S. J. (2006). Life-course observations of alcohol use among Navajo Indians: Natural history or careers? *Medical Anthropology Quarterly*; 20(3):279-296.
- Langdon, E. J. M. (2005). O abuso de álcool entre os povos indígenas no Brasil: uma avaliação comparativa. *Revista Tellus*; 9:103-124.
- Maxakali, R., Maxakali, P., Maxakali, I., Maxakali, M., & Maxakali, T. (2008). *Hitupmã'ax: curar*. Cipó Voador.
- Menendez, E. L. (1982). El proceso de alcoholizacion: revision critica de la producion socioantropologica, histórica y biomédica en America Latina. *Rev. centroam. cienc. salud*; 8(22):61-94.
- Minayo, M. C. S. (2010). *O desafio do conhecimento: pesquisa qualitativa em saúde*. (12a ed.), Hucitec, Abrasco.
- Oliveira RC, Nicolau BF, Levine A, Mendonça AVM, Videira V, Vargas AMD & Ferreira EFE. (2019). "When a Tihik drinks kaxmuk he neither has a father, nor a mother, or a brother": perceptions of Maxakali on the effects of sugarcane liquor consumption. *Cien Saude Colet*. 24(8):2883-2894. 10.1590/1413-81232018248.16992017.
- OMS. (1993). Organização Mundial da Saúde. Classificação de transtornos mentais e de comportamento da CID-10. Artes Médicas.
- Oyacer, A. M., & Nanco, J. (1998). Alcoholismo y etnia: criticas y propuestas. In: Salgado MS, Mella IJ, organizadores. *Salud, cultura y territorio: bases para una epidemiologia intercultural*. Chile: *Lincanray*; p. 43-58.
- Pena, J. L. (2005). Os índios Maxakali: a propósito do consumo de bebidas de alto teor alcoólico. *Revista de Estudos e Pesquisas, FUNAI*; 2(2):99-121.
- Pereira, P. P. S., & Ott, A. M. T. (2012). O processo de alcoolização entre os Tenharim das aldeias do rio Marmelos, AM, Brasil. *Interface Comunicação Saúde Educação*;16(43):957-66.
- Popovich, F. B. (1980). *A organização social dos Maxakali* (thesis). Texas University.
- Prussing, E., & Gone, J. P. (2011). Alcohol treatment in Native North America: gender in cultural context. *Alcoholism Treatment Quarterly*; 29:379-402
- Quiles, M. I., & Barros, E. P. (2001). Alcoolismo, doença do branco: Uma reflexão sobre o conceito de alcoolismo entre os povos indígenas a partir do comportamento alcoólico entre os índios Bororo de Mato Grosso. *Revista Saúde e Ambiente*; 4(1/2):35-48.
- Ribeiro, R. B. (2008). *Guerra e paz entre os Maxakali: devir histórico e violência como substrato da pertença* (dissertation). Pontifícia Universidade Católica de São Paulo.
- Rubinger, M. M., Amorim, M. S., & Marcato, A. S., organizadores. (1980). *Índios Maxakali: resistência ou morte*. Interlivros.
- Schutz, A. (1979). *Fenomenologia e relações sociais*. Zahar.

- Shkilnyk, A. M. (1985). *A poison stronger than love. The destruction of an Ojibwa community*. Westford: Murray Printing Company.
- Souza, J. A., Oliveira, M., & Kohatsu, M. (2003). O uso de bebidas alcoólicas nas sociedades indígenas: algumas reflexões sobre os Kaingang da bacia do rio Tibagi. Paraná. In: Coimbra C, Santos R, Escobar AL, organizadores. *Epidemiologia e Saúde dos Povos Indígenas do Brasil*. Rio de Janeiro: Fiocruz; pp. 149-167.
- Souza, M. L. P., & Garnelo, L. (2007). Quando, como e o que se bebe: o processo de alcoolização entre populações indígenas do alto Rio Negro, Brasil. *Cad Saude Publica*; 23(7):1640-1648.
- Souza, M L. P. (2013). *Processos de alcoolização indígena no Brasil: perspectivas plurais*. Fiocruz.
- Souza, M. L. P., Schweickard, J. C., & Garnelo L. (2007). O processo de alcoolização em populações indígenas do Alto Rio Negro e as limitações do CAGE como instrumento de screening para dependência ao álcool. *Rev Psiq Clín*; 34(2):90-96.
- Spycer, P. (1997). Toward a (Dys)functional anthropology of drinking: Ambivalence and the American Indian experience with alcohol. *Medical Anthropology Quarterly*; 11(3):306-323.
- Swain, R. C., Beauvais, F., Walker, R. D., & Silk-Walker, P. (2011). The effects of parental diagnosis and changing family norms on alcohol use and related problems among urban American Indian adolescents. *Am J Addict*; 20(3):212-219.
- Tugny, R. P. A. (2007). *Relatório parcial do plano de ação em saúde para o povo Maxakali*. Belo Horizonte.
- Turato, E. R. (2003). *Tratado da metodologia da pesquisa clínico-qualitativa: construção teórico-epistemológica, discussão comparada e aplicação nas áreas da saúde e humanas*. Petrópolis: Vozes.
- Whitesell, N. R., Asdigian, N. L., Kaufman, C. E., Crow, C. B., Shangreau, C., Keane, E. M., Mousseau, A. C., & Mitchell, C. M. (2014). American Indian adolescents: Patterns and predictors. *J Youth Adolescence*; 43:437-453.
- Whitesell, N. R., Beals, J., Crow C. B., Mitchell C. M., & Novins D. K. (2012). Epidemiology and etiology of substance use among American Indians and Alaska Natives: Risks, protection, and implications for prevention. *Am J Drug Alcohol Use*; 38(5):376-382.