Social representations of health-disease-care, security, and food sovereignty of indigenous students from Insikiran

Representações sociais da saúde-doença-cuidado, segurança e soberania alimentar dos estudantes indígenas do Insikiran

Representaciones sociales de salud-enfermedad-cuidado, seguridad y soberanía alimentaria de los estudiantes indígenas de Insikiran

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Ana Paula Barbosa Alves
PhD student in Environmental Sciences from Programa de Pós-Graduação em Recursos Naturais (PRONAT)
Institution: Universidade Federal de Roraima
Address: Boa Vista - Roraima, Brazil
E-mail: paula.alves@ufrr.br
Orcid: https://orcid.org/0000-0003-0000-7029

Francilene dos Santos Rodrigues
PhD in Social Sciences from Centro de Pesquisa e Pós-graduação sobre as Américas (CEPPAC)
Institution: Universidade de Brasília
Address: Boa Vista - Roraima, Brazil
E-mail: france.rodrigues@ufrr.br
Orcid: https://orcid.org/0000-0003-1618-3684

Meire Joisy Almeida Pereira
PhD in Environmental Sciences and Sustainability in the Amazon
Institution: Universidade Federal do Amazonas
Address: Boa Vista - Roraima, Brazil
E-mail: meire.joisy@ufrr.br
Orcid: https://orcid.org/0000-0001-7846-1833

ABSTRACT
The social representations of Insikiran Indigenous students regarding health-illness, care, security, insecurity, and food sovereignty were analyzed, aiming for a contextualized understanding of these topics, which are scarcely explored in the literature. This case study employed an exploratory, descriptive, and qualitative approach and was conducted at the Insikiran Institute of Indigenous Higher Education. The methodology included processing the textual corpus formed by the responses of 22 Indigenous students, using SPSS and IRaMuTeQ software. The analyses encompassed descriptive statistics, lexical analysis, descending hierarchical classification, similarity analysis, and word cloud generation. The results highlighted
significant thematic diversity, emphasizing the importance of traditional health practices, concerns with chronic diseases, and the relevance of food sovereignty. The social representations were organized into three main thematic groups, demonstrating the intersections between traditional and academic knowledge. This study underscores the importance of adopting interdisciplinary and culturally adapted approaches to promote health and well-being in Indigenous communities.

**Keywords:** traditional health practices, chronic diseases, food autonomy, interculturality.

**RESUMO**
Analisaram-se as representações sociais dos estudantes indígenas do Insikiran sobre saúde-enfermidade, cuidados, segurança, insegurança e soberania alimentar, visando compreensão contextualizada desses temas pouco explorados na literatura. Tratou-se de um estudo de caso de abordagem exploratória, descritiva e qualitativa, realizado no Instituto Insikiran de Formação Superior Indígena. A metodologia incluiu o processamento do corpus textual formado pelas respostas de 22 estudantes indígenas, utilizando os softwares SPSS e IRaMuTeQ. As análises abrangeram estatística descritiva, análise lexical, classificação hierárquica descendente, análise de similitude e nuvem de palavras. Os resultados destacaram uma diversidade temática significativa, ressaltando a importância das práticas de saúde tradicionais, as preocupações com doenças crônicas e a relevância da soberania alimentar. As representações sociais foram organizadas em três grupos temáticos principais, demonstrando as intersecções entre saberes tradicionais e acadêmicos. Este estudo sublinha a importância de adotar abordagens interdisciplinares e culturalmente adaptadas para promover a saúde e o bem-estar nas comunidades indígenas.

**Palavras-chave:** práticas de saúde tradicionais, doenças crônicas, autonomia alimentar, interculturalidade.

**RESUMEN**
Se analizaron las representaciones sociales de los estudiantes indígenas de Insikiran sobre salud-enfermedad, cuidados, seguridad, inseguridad y soberanía alimentaria, con el objetivo de comprender contextualmente estos temas poco explorados en la literatura. Se trató de un estudio de caso con un enfoque exploratorio, descriptivo y cualitativo, realizado en el Instituto Insikiran de Formación Superior Indígena. La metodología incluyó el procesamiento del corpus textual formado por las respuestas de 22 estudiantes indígenas, utilizando los programas SPSS e IRaMuTeQ. Los análisis abarcaron estadística descriptiva, análisis léxico, clasificación jerárquica descendente, análisis de similitud y nube de palabras. Los resultados destacaron una diversidad temática significativa, subrayando la importancia de las prácticas de salud tradicionales, las preocupaciones por las enfermedades crónicas y la relevancia de la soberanía alimentaria. Las representaciones sociales se organizaron en tres grupos temáticos principales, demostrando las intersecciones entre los conocimientos tradicionales y académicos. Este estudio resalta la importancia de adoptar enfoques interdisciplinarios y culturalmente adaptados para promover la salud y el bienestar en las comunidades indígenas.

**Palabras clave:** prácticas de salud tradicionales, enfermedades crónicas, autonomía alimentaria, interculturalidad.
1 INTRODUCTION

Food and Nutritional Security (FNS) concerns ensuring humanity has opportunities for access to fundamental, standard, and safe foods in a satisfactory amount, consistently and without compromising the attainment of other essential needs, based on healthy eating habits, thus contributing to a dignified life and comprehensive development (Santos; Henrique, 2018). The principles and guidelines of FNS dictate that health-promoting dietary practices should respect cultural diversity and be socially, economically, and environmentally sustainable (CONSEA, 2004). FNS as a human right encompasses ethical and structural aspects, including addressing unequal social and economic issues (Ribeiro; Pilla, 2013).

In this study, the social representations (SR) developed by Indigenous students at Insikiran concerning health-disease-care, safety, insecurity, and food sovereignty will be addressed. Thus, the research adopts an interdisciplinary approach that interlinks fields such as Education, Health, and Applied Social Sciences.

The Theory of Social Representations (TSR), developed by Serge Moscovici (2012, 1978), serves as an essential theoretical and methodological foundation for research in fields such as education, health, medicine, anthropology, and psychology (Sobral, 2022). This theory highlights social representations as forms of practical knowledge, generated in everyday life and the lived reality of individuals. Moscovici (2012; 1978) emphasizes that these representations integrate the spontaneous knowledge of the group with scientific concepts adapted to everyday life, guiding individuals in their social contexts and facilitating communication within the community.

Recent studies, such as those by Sobral (2022) and Chamon, Miragaia, and Monteiro (2020), have expanded on Moscovici's ideas, exploring how social representations assist in interpreting the unknown through the processes of objectification and anchoring. These processes transform abstract concepts into concrete elements and incorporate new ideas into the familiar context of the group, promoting the efficient assimilation of new information.

Sobral (2022) emphasizes that in the field of health, the application of the Theory of Social Representations (TSR) has contributed to enriching knowledge and understanding in medicine and public health, considering the individual in their various dimensions and not merely from a biological perspective. He highlights the importance of the theory in rethinking practices
and care in the field of mental health with the Indigenous population. Correa and Maia (2021) assert that studies using this approach can help dismantle cultural stereotypes, promoting respect for Indigenous culture.

This study is of invaluable relevance as it addresses the social representations of health-disease-care, safety, insecurity, and food sovereignty among Indigenous students, thereby filling a significant gap in the academic literature. The analysis is conducted within the context of the Insikiran Institute for Higher Indigenous Education, providing a contextualized understanding of these perceptions. Thus, the question arises: What are the social representations of health-disease, healthcare, safety, insecurity, and food sovereignty among the students of the Insikiran Institute for Higher Indigenous Education?

Thus, through a qualitative methodology based on semi-structured interviews, this study captures the complexity of the students' social representations, providing pertinent reflections to contribute not only to the advancement of academic knowledge but also to the formulation of inclusive policies and practices that respect cultural diversity and promote the health and well-being of Indigenous communities. Therefore, this study sought to analyze the social representations of health-disease, healthcare, safety, insecurity, and food sovereignty among Indigenous students at the Insikiran Institute.

2 METHODOLOGY

This was an exploratory, descriptive, and qualitative case study that utilized the textual corpus composed of responses from 22 Indigenous students, pertaining to the guiding questions that formed the framework of the semi-structured interviews, covering 7 main themes, accompanied by 10 pre-established guiding questions. The interviews had an average duration of 80 minutes each. The specific themes explored in the interviews encompassed the participants' perceptions of health, disease, healthcare, Food and Nutritional Security (FNS), Food Insecurity, and Food Sovereignty.

The context accessed was the Insikiran Institute for Higher Indigenous Education (Insikiran), an academic unit associated with the Federal University of Roraima (UFRR), located in the city of Boa Vista, Roraima.

Several approaches were taken to invite participants. Initially, during class sessions,
permission was obtained from the teachers to present the research objectives to the students and subsequently invite them to participate in the semi-structured interviews. Additionally, recruitment also occurred through initial contacts made in the common areas of Insikiran and through prior communication via email or WhatsApp, which served to schedule the meetings for the interviews.

The research was submitted to the Brazil Platform and subsequently directed to the Research Ethics Committee in Human Beings of the Federal University of Roraima (CEP/UFRR), and the National Commission on Research Ethics (CONEP), following the guidelines of the National Health Council of the Ministry of Health (MS) as stipulated in Resolution No. 466 of December 12, 2012, and No. 510 of April 7, 2016, and its supplements, which address the ethical aspects of research involving human beings. The study received an approval opinion with the number: 5.460.390 and a CAAE: 55309321.6.0000.5302.

The participants of the study were 22 Indigenous students, all enrolled in one of the three undergraduate courses available at the institution: the Intercultural Teaching Degree Program (CLI), the Bachelor's Degree in Indigenous Territorial Management (CGTI), and the Bachelor's Degree in Indigenous Collective Health Management (CGSCI). They were selected based on specific inclusion criteria: being speakers and readers of the Portuguese language, being over 18 years of age, and voluntarily agreeing to participate in the study. Those who did not meet these inclusion criteria were excluded from the research.

Data collection took place between June 20, 2022, and January 30, 2024, adapting to the availability of the participants. After accepting to participate through a formal invitation and signing the Informed Consent Form (ICF), individual interviews were conducted. These were carried out by the main researcher of the project in a private room at the Insikiran Institute, ensuring the privacy and confidentiality of the information collected. With the participants' permission, the interviews were recorded for documentation and subsequent analysis. To organize the data and preserve the anonymity of the interviewees, each was assigned a sequential numerical code (01, 02, 03, 04, etc.), corresponding to the order in which the interviews were conducted.

Information about the participants was organized into Excel spreadsheets, and descriptive statistical analyses were performed using IBM® SPSS® software (version 24). Variables such as sex, age, ethnicity, course, and study period were considered, expressed in absolute and
relative frequencies (Vieira, 2022).

For the analysis of the interviews, the IRaMuTeQ software (Interface de R pour les Analyses Multidimensionnelles de Textes et de Questionnaires) was employed, a prominent tool in textual analysis. Created by Pierre Ratinaud, IRaMuTeQ was initially available only in French, but since 2009, it has expanded its support to various languages, increasing its use in global research (Souza et al., 2018; Camargo; Justo, 2013).

Developed in the Python language and incorporating features from the R statistical software, IRaMuTeQ offers a robust platform for various statistical analyses of textual data. Its implementation in Brazil, starting in 2013, marked a notable advancement, especially in studies of social representations. Since then, its application has expanded to other research areas, strengthening qualitative analysis across various domains of knowledge (Souza et al., 2018).

IRaMuTeQ provides a range of functionalities, including the quantification of word frequency, multivariate analyses such as Descending Hierarchical Classification (DHC) and Correspondence Factor Analysis (CFA), as well as techniques like word clouds and similitude analysis. These tools enable detailed investigation of textual data, such as interviews and documents, facilitating the detection of patterns, trends, and structures in the analyzed corpus (Souza et al., 2018; Camargo; Justo, 2013).

The default settings of the software were preserved to ensure a consistent analysis that aligns with the linguistic and semantic characteristics of the corpus. After organizing the textual corpus, two analyses were conducted: Classic Lexicographic Analysis and Descending Hierarchical Classification (DHC) of text segments, all performed with the assistance of the IRaMuTeQ software version 0.7.

The Classical Lexicographical Analysis examined the structure and vocabulary of the textual corpus, conducting word counts and identifying hapax legomena. This method enriched the understanding of linguistic and semantic aspects through detailed analysis of lexical units. Lemmatization to basic forms and the creation of a reduced forms dictionary were essential for discerning patterns of linguistic usage, highlighting both active and passive verbal forms, following the guidelines of Camargo and Justo (2021).

HDC is a cluster analysis technique described by Mendes et al. (2019), which organizes words from a text into lexical classes based on frequency and position. By using contingency tables to record the co-occurrence of these words, HDC facilitates the visualization of
relationships between lexical classes and aids in identifying patterns and semantic categories. This method reveals the underlying structure of narratives, highlighting the connections between different themes and concepts (Camargo; Justo, 2013).

3 RESULTS

The research involved 22 Indigenous students, whose characterization considered variables such as sex, age, ethnicity, course, and period of study. There was a predominance of the female gender, accounting for 76.36% (n=17) of the participants, while the male gender represented 22.73% (n=5) of the sample. In terms of age, there was a significant concentration in the age group of 21 to 30 years, encompassing 81.82% (n=18) of the participants, with ages ranging from 22 to 26 years. Notably, the presence of participants aged 26 was significant, corresponding to 31.82% (n=7) of the sample. The median age was 26 years, with a standard deviation of approximately 8.14 years.

Regarding ethnicity, the Macuxi and Wapichana groups were the most represented, accounting for 50% (n=11) and 40.91% (n=9) of the participants, respectively. The Wai-Wai ethnicity had the least representation, with 4.55% (n=1) of the sample. The majority of the students were enrolled in the Indigenous Collective Health Management course, representing 77.27% (n=17) of the total.

The Intercultural Teaching and Indigenous Territorial Management courses had smaller participation, with each contributing 9.09% (n=2) of the total participants. Regarding the distribution by study period, there was a balance between the "3 to 5" and "9 or more" periods, both accounting for 40.91% (n=9) of the participants. The "6 to 8" period had a lower frequency, representing 18.18% (n=4) of the sample.

The lexicographic analysis of the textual corpus, comprising 22 interviews (22 texts), revealed a total of 15,141 occurrences, including words and various forms. Among these, we identified 1,494 distinct words. Notably, 556 of these words (37.22% of the total distinct forms) were classified as hapax, that is, terms that appeared only once, accounting for 3.67% of the total occurrences. The detailed analysis indicates an average of 688.23 occurrences per text, demonstrating the lexical richness and thematic diversity addressed by the participants in the interviews, as shown in Figure 1.
After the lemmatization of the textual corpus, 1,322 active words and 160 supplementary forms were identified. Among the active words, the six most frequent were: "ser" (supplementary verb, 323 occurrences); "ter" (supplementary verb, 205 occurrences); "alimento" (noun, 189 occurrences); "comunidade" (noun, 161 occurrences); "doença" (noun, 134 occurrences); and "saúde" (noun, 123 occurrences). Additionally, the IRaMuTeQ software classified 378 out of 429 text segments (88.11% of the corpus), demonstrating high efficiency in utilizing the data for analysis. This result highlights the prevalence of vocabulary related to health and food sovereignty among the participants, as well as the importance of these categories in the context of the interviews.

**Figure 2** illustrates the results obtained by the Descending Hierarchical Classification (DHC), summarizing data extracted from the textual corpus: 22 texts, 429 text segments, 2,239 forms, 15,141 occurrences, 1,494 lemmas, 1,322 active forms, 160 supplementary forms, of which 553 active forms had a frequency of three or more. The average number of forms per segment was 35.29, and six clusters were identified, with 378 segments (88.11% of the total) classified, resulting in the formation of six distinct lexical classes.
The application of Descending Hierarchical Classification (DHC) facilitated the organization of the lexical classes identified in the corpus into three main thematic groups, named A, B, and C, as described below:

Group A: This cluster encompasses Class 1, which accounts for 19.05% (72/378) of the total and focuses on health care, and Class 4, which comprises 18.78% (71/378) and concentrates on perceptions of health. The close percentage proximity between these classes indicates a narrow thematic relationship, highlighting the significance of health care and perceptions in the social representations of the participants.

Group B: Consists of Class 2, which encompasses 18.52% (70/378) of the total and addresses social representations related to disease, and Class 5, which represents 16.4% (62/378) and focuses on conceptions of food sovereignty. This group reflects a second area of thematic interest, highlighting distinct yet equally important concerns within the corpus.

Group C: Comprised of Classes 3 and 6, which address, respectively, understandings of Food Insecurity (14.81% - 56/378) and notions of Food and Nutritional Security (FNS), as well as activities related to FNS at the university (12.43% - 47/378). This group reveals a third
significant thematic axis, highlighting the participants' concerns with nutritional aspects and food security.

The organization of the lexical classes into three main groups will be meticulously illustrated in the dendrogram, which will also include the 10 most prominent active words per class (see Figure 3). This arrangement of classes and the delineation of the central thematic groups provide a structured and comprehensive perspective of the semantic dynamics manifested in the interviews. Such structuring serves as a foundation for subsequent interpretations and more detailed analyses of the collected data.

Figure 3: Groups and Their Lexical Classes

![Dendrogram showing groups and lexical classes](source: Authors 13/02/2024)

According to Figure 3, the analysis of the lexical classes by Descending Hierarchical Classification (DHC) shows that Group A is the most representative, accounting for 37.5% of the analyzed text segments. Within this group, Class 1, focused on health care, is the most prominent, followed by Class 4, which deals with perceptions of health, highlighting the importance of health and care themes among the participants. Following this, Group B, with Class 2 on social representations of disease, and Class 5 on food sovereignty, form the next level of representativeness, showing other thematic areas of interest.

Classes 3 and 6 form Group C, which address food insecurity and food and nutritional security (FNS), respectively, in addition to activities related to FNS at the university. They
represent subsequent themes, emphasizing concerns with food and nutrition. This order of representativeness indicates the thematic prioritization in the social representations of the participants, from general health issues to specific aspects of food security.

The distribution of text segments across the lexical classes revealed the thematic diversity and richness of the social representations in the corpus. The prominence of Group A indicates an emphasis on specific themes, reflecting the main concerns and perceptions of the participants. The hierarchy within the classes suggests a gradation in the themes addressed, providing a solid foundation for the analysis of the narratives.

These results were essential for understanding the nuances of the participants' social representations, offering a detailed view of the themes discussed in the interviews. The categorization of words into lexical classes and their organization into groups enabled a structured analysis of the corpus, revealing discursive patterns in the participants' narratives. The lexical classes were named according to the main emerging themes, representing the diverse social representations about health, disease, safety, insecurity, and food sovereignty among the participants. The denominations were assigned based on the identified themes:

a) Group A:
- Class 1: designated "Traditional Health Care Practices," is focused on primary health care, both individual and family-oriented. This title is fully related to the students' representations of health care:

"Our traditional knowledge is used for taking care of our family and for the benefit of all members of the indigenous community. Depending on the illness, the community resident continues to consult with the doctor, undergo evaluations and medical examinations, and continues taking industrialized medications" (n_01).

"I believe that the traditional knowledge of Indigenous peoples can be very useful in the care and control of diseases identified in my community. Traditional medicine may not be the solution for all diseases, but it certainly has its value, especially for alleviating symptoms of colds and diarrhea. We typically prepare homemade syrups and teas for these conditions, as well as for cases of vomiting. There are traditional health practices to treat tumors, such as the use of pirarucu leaf applied directly to the tumor, helping to draw out the purulent secretion and alleviate the problem" (n_06).

The five most prominent words, along with their respective percentages of occurrence and grammatical classifications, were identified. These words reflect the valuation of traditional health practices among the participants:
- the word "Traditional" (adjective) - mentioned 47 times, present in 78.33% of the
occurrences in this class, highlighting the importance attributed to time-honored health practices;
- "plant" (noun) - referred 31 times, appears in 100% of the occurrences within its category, emphasizing the value of medicinal plants in health care;
- "medicinal" (adjective) - mentioned 27 times, representing 100% of the occurrences, reinforcing the relevance of the healing properties of natural elements;
- "remedy" (noun) - appeared 26 times, constituting 96.3% of the occurrences, indicating a preference for natural and homemade treatments;
- "medicine" (noun) - mentioned 26 times, appeared in 89.66% of the occurrences, encompassing the knowledge and practices related to health.

Lexical Class 1 emphasizes the valuation of traditional methods and natural remedies. Terms such as "traditional," "plant," "medicinal," and "remedy" highlight the preference for natural treatments and the use of homemade preparations. The word "knowledge" underscores the importance of ancestral wisdom in health, while "use" indicates the practical application of this knowledge. This lexical class underlines the relevance of traditional practices in health promotion and disease treatment, showcasing the connection between ancestral knowledge and quality of life. Thus, Class 1 highlights the significance of traditional medicine in health care and the preference for natural treatments over conventional methods.

- Class 4, titled "Holistic Dimensions of Health," expresses the students' perceptions of health that go beyond biological aspects, as we can observe in the narratives:

"Health means much more than just not being physically ill; it also involves mental and emotional well-being. It is having food on the table, a stable job, and ensuring that our children receive a good education. Health is feeling good inside and out, without discomfort or illness, and maintaining positive social relationships. It includes having peace of mind, a home of our own, access to land for cultivation, and a healthy environment where we can plant, harvest, and sustain ourselves. Health is living in emotional harmony, possessing stability and contentment, and having a quality of life that allows us to live well in our communities without fear of losing our lands to invaders" (n_08).

"Health is the well-being of each person, including physical, mental, and social aspects, such as having decent housing, access to quality food, basic sanitation, a job to obtain an adequate income every month, access to quality education for my family, personal transportation, and moments of leisure. It is having a quality of life and well-being" (n_19).

Thus, we list the five most frequent words in Class 4, accompanied by their respective
percentages and grammatical categories:

- health: the most cited word, appearing 44 times and representing 41.9% of the occurrences in this class. Grammatical classification: noun;
- well-being: mentioned 22 times, with a percentage of 75.96% of the occurrences for this term. Grammatical classification: noun;
- life: present 21 times, constituting 50.0% of the occurrences. Grammatical classification: noun;
- physical: appears 20 times, representing 80.0% of the occurrences. Grammatical classification: adjective;
- live: cited 16 times, with 84.21% of the occurrences. Grammatical classification: verb.

These terms emphasize a holistic view of health, understood not merely as the absence of disease, but as a state of physical, mental, and social well-being, influenced by social factors. The emphasis on "Health," "Well-being," and "Life" indicates an integrated approach that prioritizes quality of life. "Physical" and "Live" highlight the importance of bodily health and the experience of a full life, underscoring the interaction between physical well-being and social, psychological, and environmental aspects.

Lexical Class 4 addresses different conceptions of health, ranging from traditional views to those shaped by urban and educational contexts. The designation "Holistic Dimensions of Health" captures the essence of the participants' discussions on the various dimensions of health, offering a detailed view of how they perceive and experience health in their daily lives. It emphasizes the connection between physical well-being, psychological factors, and socioeconomic conditions.

b) Group B:

- Class 2: named "Prevalent Diseases and Health Conditions," reflects the participants' social representations of the most common illnesses and health conditions in their family and community:

"Disease is when I am suffering physically or emotionally, when I have some pain or a worry. The diseases I identify in my community are viral infections, diarrhea, and respiratory problems, especially during the rainy season, as well as NCDs like hypertension and Type 2 diabetes, and alcohol abuse, which is present among women, men, and young people. In the past, these diseases, hypertension, and Type 2 diabetes, didn't even exist in my community. The most prevalent diseases in my family are NCDs like hypertension and Type 2 diabetes, and alcohol abuse" (n_02).
"Disease is being unable to perform my daily activities, not working, doing what I like, feeling unwell, sad, bad, not having a structured family, and not having food for my children. The main diseases I identify in the community are depression, addictions like alcoholism, Type 2 diabetes, hypertension, and respiratory diseases in children, such as pneumonia and diarrhea" (n_14).

The five most mentioned words in this class, along with their frequencies of mention, percentages, and grammatical classifications, were:
- hypertension (HAS) (noun) - mentioned 54 times, corresponding to 88.52% of the occurrences in this class, underscoring hypertension as a significant health condition;
- type 2 Diabetes (DM_2) (noun) - cited 55 times, with 82.09% of the occurrences, highlighting Type 2 diabetes as a prevalent health concern;
- diarrhea (noun) - referred to 33 times, representing 94.28% of the occurrences, indicating the importance of this condition as a common health issue;
- flu (noun) - mentioned 26 times, constituting 83.87% of the occurrences, emphasizing the flu as a frequent illness in the community;
- NCD (Non-Communicable Diseases) (noun) - cited 23 times, with 85.19% of the occurrences, stressing the relevance of chronic diseases as a central health issue.

This lexical class highlights the participants' concern with chronic and infectious diseases prevalent in their context, evidencing the main worries in terms of morbidity. The most cited words, such as hypertension (HAS), Type 2 diabetes (DM_2), diarrhea, and flu, reflect the attention given to the most relevant or alarming health conditions, including the emphasis on chronic diseases and acute infections (diarrhea and flu). The expression NCD (Non-Communicable Diseases) and the term "disease" encompass a broad spectrum of chronic illnesses, while adjectives such as "prevalent" and "principal" reinforce the importance of these conditions. The mention of "beverage" suggests concerns with consumption habits and their health impacts. Class 2, "Prevalent Health Conditions and Diseases," encapsulates the participants' discussions and concerns about the most significant health conditions affecting their community, underscoring the complexity and diversity of social representations of health.

- Class 5: titled "Notions of Food Sovereignty," expresses the participants' social representations regarding food sovereignty, highlighting the importance of autonomy and control over food resources.

"Food sovereignty is the right of the people to determine their own food policy, without external impositions, ensuring access to healthy and culturally appropriate food. This
right also guarantees the appreciation and preservation of traditional agricultural practices, strengthening the connection with our roots and traditional knowledge” (n_07).

"Food sovereignty is the right to have regular and sustainable access to healthy food, in accordance with the food culture and identity of each person, including the guarantee of having land to plant and the freedom to decide how and what foods to cultivate” (n_13).

The five most mentioned words, along with their frequencies of citation, percentages, and grammatical categories, are:

- right (noun) - mentioned 28 times, representing 84.85% of the occurrences in this class, highlighting the perception of food sovereignty as a fundamental right;

- food_Sovereignty (noun) - referred to 20 times, with 90.91% of the occurrences, emphasizing the centrality of the concept in the discussion;

- needs (noun) - appears 20 times, corresponding to 74.07% of the occurrences, indicating the emphasis on basic food needs within the context of food sovereignty;

- respect (verb) - cited 14 times, representing 82.35% of the occurrences, emphasizing the importance of respecting traditional food practices and food rights;

- ensure (verb) - mentioned 13 times, with 86.67% of the occurrences, underscoring the responsibility to guarantee access to adequate and sustainable food.

Lexical Class 5, "Notions of Food Sovereignty," highlights fundamental concepts such as the "right" to adequate food, "food sovereignty" as autonomy over food resources, "needs" for food security, "respect" for food traditions, and "ensure" access to sustainable food. These expressions reflect the participants' emphasis on the importance of food sovereignty, encompassing aspects such as rights, traditions, and sustainability. In summary, this lexical class reveals the complexity of the participants' social representations of food sovereignty, highlighting concerns with food rights, traditional practices, and sustainability.

C) Group C:

- Class 3: designated as "Perceptions of Food Insecurity," expresses the participants' social representations of their conceptions and difficulties associated with food insecurity.

"Food insecurity is when I realize that I have nothing at home to feed my family. I worry a lot about this, especially about my daughters, thinking about how to get food. I heard about some people in the community who at some point have faced hardship due to the lack of food, although this hasn't happened in my family. I have faced difficulties
accessing or buying food, but currently, we rely on state government assistance, which is a support for those of us who live in the city, including situations in the community. This assistance is very useful. Food prices are high, everything is expensive, with 100 reais today, you can buy very little" (n_20).

"Food insecurity happens due to climate problems that harm agriculture, high food prices, and lack of employment. These factors affect our access to food and make us vulnerable. Personally, I have experienced times of food scarcity, facing challenges due to the absence of basic foods. There were days when there was no meal at lunchtime, although at night we managed to prepare something simple. I remember that, since my childhood, breakfast sometimes represented our only sustenance for the day" (n_22).

The five most mentioned words in this class, along with their frequencies of citations, percentages, and grammatical classifications, are:

- buy (verb) - cited 24 times, representing 89.89% of the occurrences in this class, highlighting the action of acquiring food as a challenge in food insecurity;
- price (noun) - referred to 22 times, with 73.33% of the occurrences, emphasizing the concern with the cost of food as a critical factor in food accessibility;
- access (verb) - mentioned 14 times, corresponding to 93.33% of the occurrences, indicating the difficulty in obtaining food as a central issue in food insecurity;
- difficulty (noun) - cited 15 times, representing 88.24% of the occurrences, emphasizing the obstacles faced in accessing adequate food;
- food (noun) - referred to 43 times, with 33.44% of the occurrences, underscoring the centrality of food in the discussion on food insecurity.

Terms such as "buy" and "price" highlight the importance of financial capacity and the cost of food in food accessibility. "Access" and "difficulty" point to the challenges in obtaining adequate food, while "food" underscores the centrality of food in the discussion. Lexical Class 3, "Perceptions of Food Insecurity," demonstrates the participants' concern with issues of food accessibility and availability, highlighting the multifaceted nature of social representations of food insecurity among the interviewees.

- Class 6: titled “Concepts and University Initiatives in Food and Nutritional Security (FNS),” expresses the participants' social representations regarding the concepts and their participation in activities and projects related to FNS at UFRR.

“FNS is about food; depending on what I eat, food can be beneficial or harmful to my health. Using organic foods is important because they are harmless and beneficial, without causing damage to our health. At the university, I participated in an extension activity about FNS, which sought ways to bring knowledge about food and reflections on our food consumption to Indigenous students, and it guided us on consuming a
healthy diet. We managed to take the extension project to an Indigenous community and provide guidance on the risks of consuming processed foods and the health benefits of consuming a healthy diet. I believe that talking about healthy eating is related to FNS” (n_01).

“FNS means having the guarantee of access to adequate quantities of food, regardless of whether they are nutritious or less beneficial. I carried out teaching and research activities focused on FNS at the university. I took a course on the theme of contextual health and quality of life in the teaching degree program, which included educational classes, studies on traditional food, processed foods, and real food. The classes at the university helped me to think about important issues for the community and to plan an activity to be implemented in the school where I work” (n_09).

“FNS represents access to quality food in adequate quantities for the family, without compromising other essential needs; it is a fundamental right for everyone. This right includes respect and appreciation for diverse food practices and cultures. I participated in a project at the university about FNS, which was an extremely valuable experience. The project involved working with Indigenous communities, educating about healthy foods and the dangers of processed foods, and conducting interactive activities with children, young people, and adults” (n_15).

The five most cited words in this class, along with their frequencies of citation, percentages, and grammatical classifications, are:
- project (noun) - cited 19 times, representing 95.0% of the occurrences in this class, highlighting the importance of planned initiatives to promote FNS;
- university (noun) - referred to 21 times, with 80.77% of the occurrences, emphasizing the role of the higher education institution in implementing projects related to FNS;
- extension (noun) - mentioned 13 times, corresponding to 92.86% of the occurrences, referring to university extension activities aimed at applying academic knowledge in real contexts to promote FNS;
- participate (verb) - cited 15 times, representing 78.95% of the occurrences, stressing the action of actively engaging in FNS projects and activities;
- FNS (noun) - referred to 25 times, with 51.02% of the occurrences, being the central term that denotes Food and Nutritional Security, underscoring the main theme of the class.

The term "project" highlights the importance of planned initiatives to address Food and Nutritional Security (FNS), while "university" emphasizes the role of higher education institutions in the development and implementation of these projects. "Extension" refers to university activities that apply academic knowledge in real-world contexts to promote FNS. The verb "participate" underscores active involvement in projects related to FNS. The term "FNS" is central, indicating the participants' concern with food and nutritional security.
These words demonstrate the focus on educational initiatives and academic practices aimed at promoting FNS, highlighting the diversity of social representations of FNS among the participants. Therefore, Lexical Class 6, “Concepts and University Initiatives in Food and Nutritional Security (FNS),” highlights the participants' perceptions and experiences regarding their teaching, research, and extension activities at the university related to FNS.

4 DISCUSSIONS

To identify the Social Representations (SR) of health-disease-care, FNS, insecurity, and food sovereignty developed by Indigenous students, it was noted that common knowledge is anchored in biomedical understanding, but with a holistic perspective. The participants addressed the health-disease process considering biopsychosocial, spiritual, and socio-environmental determinants (Costa et al., 2018). The perception of health-disease-care among Indigenous peoples transcends the biomedical perspective; actions for the promotion, prevention, treatment, and rehabilitation of health must consider the "sociocultural and spiritual aspects, values, and lived experiences of Indigenous peoples (...)” (Souza, 2017, p.157).

This approach may be related to the three-dimensionality of SR, supported by the "information" that a specific group (Indigenous students) has about health-disease-care, whether through university studies or everyday dialogues and media. Additionally, the "field of representation" is mentioned as a unifier of internal tensions and the positioning of "attitudes" toward health and disease, influenced by culture (Costa et al., 2018; Costa; Coutinho, 2018; Moscovici, 2012).

The most frequently mentioned diseases by the study participants in their families and Indigenous communities were alcohol abuse, NCDs, particularly hypertension and Type 2 diabetes, diarrhea, and colds. Compared to the non-Indigenous population in Brazil, Indigenous peoples suffer from insufficient access to quality drinking water, resulting in an epidemiological profile related to a historical prevalence and incidence of infectious and parasitic diseases (Scopel; Dias-Scopel; Diehl, 2017).

Among Indigenous peoples, infectious and contagious diseases, sexually transmitted infections, non-communicable chronic diseases (NCDs) (such as diabetes mellitus, hypertension, and neoplasms, among others), diseases related to social disorders (such as psychiatric disorders,
alcohol abuse, violence, deaths by suicide, and external causes) are present (Carioca et al., 2021; Alves et al., 2019; Malta et al., 2017).

Regarding the healthcare practices, the Social Representations (SR) of the participants are based on both their traditional knowledge and biomedical understanding. They value and recognize the efficacy of their Traditional Medicine, identifying that certain diseases require traditional care, while others, typical of non-Indigenous people, need Western therapeutics. Often, these treatments are used complementarily. This phenomenon is observed in the study by Mura and Silva (2012) on "The Tradition of Knowledge, Experiential Processes, and Healing Practices among the Kaiowa."

Some studies explore the complex interaction between traditional and biomedical healthcare among Indigenous peoples. Machado, Luz, and Martins (2022) emphasize the importance for healthcare professionals to respect and understand the unique worldviews and health practices of Indigenous peoples. Oliveira (2017) highlights the crucial role of spirituality in health, often associated with traditional healing practices. Casas and Mattos (2022) underscore the need for humanization in biomedical care and specifically point to the necessity of recognizing and integrating traditional healing practices into health services. These studies advocate for a holistic approach to health that values and combines traditional and biomedical practices for truly differentiated treatment.

Regarding the therapeutic itineraries practiced by traditional communities, it is essential to observe the entire process involved in their healing practices. This includes the cultivation and/or extraction of medicinal plants, their subsequent use, as well as blessing rituals, shamanism, ebós, and other spiritual healing practices. Additionally, understanding issues related to territory, the use of biodiversity, and natural resources constitutes a vast heritage of knowledge and practices in life care. However, reports indicate that native knowledge is often stigmatized in the context of healthcare for traditional populations (De Las Casas; Mattos, 2022).

Another foundation of the Social Representations (SR) of Indigenous students lies in the concepts of security, insecurity, sovereignty, and university initiatives on Food and Nutritional Security (FNS). This highlights the diversity of SRs on these concepts among the participants and demonstrates their ability to integrate academic knowledge with their traditional knowledge, emphasizing their autonomy.
Indigenous peoples seek to determine their autonomy and strive to establish communication with national society through the fields of "education, food, medicine, ecology, and well-being." Thus, they aim to strengthen their identity, dignity, and ancestral knowledge (Liberato, 2019, p. 50).

Freitas (2017) asserts that, with achievements in the fields of territory and education, Indigenous peoples now seek the training of their peers in various areas to protect the autonomy of their communities. Indigenous peoples continue to resist and seek to reclaim their rights, which were historically taken away through the process of domination and colonization. Therefore, they fight for their culture, equality, and justice, respecting differences and their ethnicities. In relation to their ways of being and living in the world, they present their own cosmology and cosmogony. Regardless of the landscape characteristics of their territories, they create their own relational forms and traditional knowledge (Freitas, 2017).

Currently, there are studies by Indigenous and non-Indigenous researchers on the change in eating habits and the incidence of diseases that previously did not exist among these societies. Traditional foods are losing ground to processed foods rich in sodium, fat, and sugars. These changes need to be studied by understanding the significant social transformations that have occurred over the years among these peoples. Additionally, there are complexities in the profiles of nutrition and determining factors, such as deficiencies, excesses, and dietary inadequacies (Tserenhe’omo, 2017; Baniwa, 2012; Leite, 2012).

The environment plays an important role in the process of FNS. The extent of the demographic space can be highlighted, as it allows access to food and the practice of traditional habits and customs. Therefore, it is necessary to consider cultural aspects, the adaptation to the environment, and the availability of natural resources for the means of sustaining the life of each people (Brito, 2019).

Liberato (2019) reiterates this view by emphasizing the relevance of territory, cultural heritage, and Indigenous food sovereignty. He advocates for holistic and contextualized approaches that transcend simplistic conceptions, highlighting the connection between communication, ancestry, and social mobilization. For Indigenous communities, land is fundamental as it harbors the essential knowledge for the practice of their well-being (Silva, 2023).
The concept of food sovereignty arises from the relationship between conditions of hunger and malnutrition and agricultural and commercial policies influenced by large corporations concerned with preserving their profit levels. Therefore, food sovereignty aims to establish public policies that support indigenous production through locally adapted agricultural practices and incorporate the food culture of the populations (Rodrigues; Santos, 2018).

Indigenous knowledge on the use and conservation of Amazonian ecosystems is essential for food security and sovereignty, in contrast to productive practices that degrade natural resources and affect Indigenous autonomy. However, Indigenous food sovereignty is not a priority for the Brazilian state, which chooses to invest in large projects and agribusiness on Indigenous lands, prioritizing the production of commodities and biofuels (Ramos; Noda; Martins, 2021).

5 CONCLUSIONS

This research aimed to analyze the social representations of health-disease, healthcare, safety, insecurity, and food sovereignty among Indigenous students at the Insikiran Institute. The results reveal a complex tapestry of perceptions that reflect the interaction between traditional and academic knowledge, as well as the influence of the participants' specific cultural and educational context.

The lexicographic analysis highlighted the lexical richness and thematic diversity present in the interviews, with particular emphasis on the categories related to health and food sovereignty. Through Descending Hierarchical Classification (DHC), it was possible to organize the social representations into three main thematic groups, revealing the students' concerns regarding healthcare, prevalent diseases, and aspects related to food and nutritional security.

Group A, composed of classes focused on healthcare and perceptions of health, highlights the importance given to the holistic aspects of health, which extend beyond the biological facets and encompass physical, mental, and social well-being. This outcome underscores the valuation of traditional health practices and the broadened perception of health as synonymous with good living. Group B, which addresses the social representations related to disease and food sovereignty, reflects a second area of thematic interest, highlighting distinct but equally important concerns within the context of the interviews. The emphasis on non-communicable
chronic diseases and issues related to autonomy and control over food resources illustrates the students' perceptions of the challenges faced in their communities.

Group C, comprised of classes that discuss food insecurity as well as food and nutritional security, reveals a significant third thematic axis, emphasizing the participants' concerns with nutritional aspects and food security. The analysis highlights the importance of student participation in university projects and initiatives aimed at promoting food and nutritional security.

A connection was observed between the concepts of health, disease, diet, and community, highlighting the structure of the representational field of factors associated with the social representations of the participants.

However, the study presents limitations that must be considered. The sample was limited to students from the Insikiran Institute, which may restrict the generalizability of the results to other Indigenous contexts. Additionally, comparative studies with students living exclusively in urban and community settings are needed to enhance the understanding of social representations on the topics addressed. Moreover, data collection was based on narratives, which may be subject to memory biases or social desirability trends in the responses.

In summary, the results of this study provide a detailed view of the social representations of Indigenous students from the Insikiran Institute regarding health-disease, healthcare, safety, food insecurity, and food sovereignty. The identified perceptions reflect the intersection between traditional and academic knowledge and highlight the importance of interdisciplinary and culturally sensitive approaches in promoting health and well-being in Indigenous communities. The limitations of the study indicate the need for future research to broaden the understanding of these social representations in different contexts and among different Indigenous populations.
REFERENCES


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