



SOCIAL TECHNOLOGY: AN INTERDISCIPLINARY APPROACH IN PSYCHOSOCIAL ATTENTION TO VULNERABLE POPULATIONS AT URBAN CONTEXT IN RJ/BRAZIL

TECNOLOGIA SOCIAL: UMA ABORDAGEM INTERDISCIPLINAR NA ATENÇÃO PSICOSSOCIAL A POPULAÇÕES VULNERÁVEIS EM CONTEXTO URBANO NO RIO DE JANEIRO/BRASIL

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ABSTRACT

That's a historic description of primary health care activities from 2008 to 2025 dedicated to ethnicities located in an urban context in Rio de Janeiro, Brazil, based on the National Health Policy (NHP). Due to the pluralistic constitution of the country, it was specifically separated as Comprehensive Health Care. For this qualitative description over time, the Instrumental Case Study (Stake, 1995) was adopted. A collective and cooperative construction of knowledge was carried out through the Traditional Knowledge from their territories by Intellectual Property and Rights, a *strictu sensu* post graduation discipline, at Instituto Nacional de Propriedade Industrial (INPI/Ministry of Economy of Brazil) besides Environmental Health, Parasitology, Bioethics Project from Imunne Parasitology and Toxicological Analysis Laboratory of Pharmacy Faculty of Federal University of Rio de Janeiro (UFRJ) and several intersectoral partners. In parallel, intercultural health education was developed for undergraduate students by the Laboratory for Studies of Aging Processes of the Postgraduate Program in Psychosocial Care of the Institute of Psychiatry of the University of Brazil of the Federal University of Rio de Janeiro (UFRJ), in an intersectoral, interuniversity, and interdisciplinary partnership. During pandemic, the work to multidimensional health has developed turned into a qualitative research on Covid-19, authorized by the National Research Commission (CONEP). After, methodology of intergenerational meetings was adopted. As a result, this experience represents the potential of an innovative, simple, inexpensive, and efficient educational practice to address complex health content that is significant to their cultures. Intercultural cooperation correspond to a contemporary global demand to peoples of movement across territories but also regarding climatic related changes and geological instabilities (tectonic plate slippages). National Public Health seeks to create conditions for access to healthcare considering the sociocultural and epidemiological specificities of the Brazilian plural population. Extensive material produced collaboratively are available by the public university. Ethnic leaders and people under vulnerability felt respected and empowered in an urban environment as Rio de Janeiro. Young people advanced towards academic training, aware of their leadership roles in the 21st century. As conclusion, implementation of Public Policies requires intersectoral actions aimed at mitigating prejudice of anthropic features, fear in the face of different cultures and clinical situations that are not yet well

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understood in epidemiology as climatic changes in human beings. This represents one of the roles played by psychosocial care to multidimensional health and autonomy. Environmental ethics, environmental bioethics, environmental technologies were employed to recovery and preventing of harm. Social technology evoked an active posture of citizenship and as an effective dimension of human rights (dignity). Listening, ethic, respect, empathy, solidarity and valorization of “others” knowledge and abilities are foundational and structuring concepts to a continuous construction to reduce asymmetries to Brazilian Health, perhaps a world healthy, with more peaceful and cooperatively society, moving Global Health into the potent One Health conception.

Keywords: Climate-related changes, Social Vulnerability, Interdisciplinary Psychosocial Care, Multidimensional Health. Autonomy.

RESUMO

Este trabalho apresenta um relato histórico das atividades de atenção primária à saúde realizadas entre 2008 e 2025, voltadas para grupos étnicos situados em contexto urbano no Rio de Janeiro, Brasil, com base na Política Nacional de Saúde. Dada a composição plural do país, a iniciativa foi estruturada especificamente sob a perspectiva da Atenção Integral à Saúde. Para essa descrição qualitativa de caráter longitudinal, adotou-se a metodologia de Estudo de Caso Instrumental (Stake, 1995). Promoveu-se uma construção coletiva e cooperativa de conhecimento sobre saberes tradicionais de seus territórios, envolvendo a disciplina de pós-graduação *stricto sensu* “Propriedade Intelectual e Direitos” do Instituto Nacional da Propriedade Industrial (INPI/Ministério da Economia do Brasil), bem como projetos de Saúde Ambiental, Parasitologia e Bioética do Laboratório de Imunoparasitologia e Análises Toxicológicas da Faculdade de Farmácia da Universidade Federal do Rio de Janeiro (UFRJ) e diversos parceiros intersetoriais. Paralelamente, desenvolveu-se uma ação de educação intercultural em saúde para estudantes de graduação, conduzida pelo Laboratório de Estudos dos Processos de Envelhecimento do Programa de Pós-Graduação em Atenção Psicossocial do Instituto de Psiquiatria da UFRJ, em uma parceria intersetorial, interuniversitária e interdisciplinar. Durante a pandemia, o trabalho voltado para a saúde multidimensional evoluiu para uma pesquisa qualitativa sobre a Covid-19, autorizada pela Comissão Nacional de Ética em Pesquisa (CONEP). Posteriormente, adotou-se a metodologia de encontros intergeracionais. Como resultado, essa experiência demonstra o potencial de uma prática educativa inovadora, simples, de baixo custo e eficiente para abordar conteúdos de saúde complexos e significativos para as culturas desses grupos. A cooperação intercultural responde a uma demanda global contemporânea, não apenas relacionada ao deslocamento de povos entre territórios, mas também às mudanças climáticas e instabilidades geológicas (deslocamento de placas tectônicas). A Saúde Pública nacional busca criar condições de acesso à assistência à saúde, considerando as especificidades socioculturais e epidemiológicas da população brasileira plural. Um vasto material produzido de forma colaborativa foi disponibilizado pela universidade pública. Lideranças étnicas e pessoas em situação de vulnerabilidade sentiram-se respeitadas e empoderadas em um ambiente urbano como o Rio de Janeiro. Jovens avançaram em sua formação acadêmica, conscientes de seus papéis de liderança no século XXI. Em suma, a implementação de políticas públicas requer ações intersetoriais voltadas a mitigar preconceitos relacionados a fatores antropogênicos e o receio diante de culturas diversas, bem como a abordar situações clínicas — como os impactos das mudanças climáticas na saúde humana — ainda pouco compreendidas sob a ótica epidemiológica. Esse é um dos papéis desempenhados pela atenção





psicossocial em prol da saúde multidimensional e da autonomia. A ética ambiental, a bioética ambiental e as tecnologias ambientais foram empregadas na recuperação e na prevenção de danos. A tecnologia social fomentou uma postura ativa de cidadania, constituindo uma dimensão efetiva dos direitos humanos (dignidade). A escuta, a ética, o respeito, a empatia, a solidariedade e a valorização dos saberes e capacidades do "outro" são conceitos fundamentais e estruturantes para uma construção contínua visando reduzir assimetrias na saúde brasileira — e, quiçá, na saúde global —, promovendo uma sociedade mais pacífica e cooperativa e transicionando a Saúde Global para o conceito potente de Saúde Única (*One Health*).

Palavras-chave: Mudanças climáticas, Vulnerabilidade social, Atenção psicossocial interdisciplinar, Saúde multidimensional, Autonomia.

INTRODUCTION

Brazil, a South American country, is a plural and diversified country with indigenous people, several ethnic groups (as gipsy) and many foreign people (as Japanese, European, Middle West), among Traditional Communities (TC). Nevertheless, it has historically been plagued by profound social, economic, and inequalities, which are starkly reflected in health indicators including mental health (Varricchio; Lage, 2020).

Thinking in Mental Health and regarding the causes of violent deaths, among the main causes of violent death worldwide, based on the most recent WHO data (2021), are approximately 80.000 to 90.000 deaths from armed conflicts (wars), 464.000 homicides, 727.000 suicides (~1 person each 44 seconds in 2024), and approximately 1.19 million deaths from traffic road accidents (UNODC/OWD, 2024; WHO, 2024; 2025, 2025a, 2026).

These causes, obtained from Global Health Estimates 2000–2021, published between 2024 and 2025, in turn, are very broad and can be further sub-stratified according to the type of violence that had occurred, as the type of traffic accident, or also, whether substance abuse was associated in occasion, and even, if was there any segregation followed by death. In fact, some estimates, such as violent and climate-related deaths, used complementary UN sources (UNODC, 2019; WMO, 2024), when specific WHO data are not available, that can be accessed.

Indeed, psychological suffering is also true for indigenous (originary) people and for ethnic people in urban contexts, by their socio-economic status, but also where many of





their regional uses and knowledge regarding natural resources (referred by them as their richness) are not valued as an ancestry heritage. They are ignored and excluded. Or, when there is a conflict of interest, and a legal loophole regarding access to traditional information, they're invaded by cultural misappropriation. These aspects impact their mental health because their culture and traditions are evaluated by them as their Cultural Legacy and conscientiousness heritage (Nagamatsu et al., 2019; Varricchio; Lage, 2020; Varricchio, 2023).

Based on epidemiological indicators, social suffering and psychological suffering (Kleinman; Das; Lock, 1997; Sawaia, 2009), with negative repercussions on the health of society, as a whole, can be highlighted. So strategic health plans can also be developed for these populations displaced due to several types of violence in the regions they inhabited (Cerqueira et al., 2021) besides special public policies already made by Unified Health System (UHS or Sistema Único de Saúde SUS) of the Ministry of Health of Brazil.

Epidemiological indicators, when considered within a multidimensional health context, intertwine epidemiology and demography, when studying human populations. They directly connect these populations through demographic and epidemiological transitions to understand the health of groups and their specificities, going beyond mere statistical analysis to focus both: on historical and contemporary contexts (IBGE, 2022).

Ethno psychiatry is a multidisciplinary field that studies the complex relationship between culture, mental health, and the individual, analyzing how cultural specificities influence mental disorders, manifestations of suffering and therapeutic responses, seeking to understand and to promote care more adapted to different contexts. It is also known as transcultural psychiatry. As recommended by international psychiatry, the existing psychological suffering can be mitigated by primary health care strategies, via psychosocial care, not being limited to the medicalization of psychological suffering because it does not correspond to mentally ill individuals, but rather to members of different cultures and ways of life (Amaranto, 2010; Amaranto; Nunes, 2015; Patel et al., 2019; EPC, 2022; Varricchio, 2023).





Furthermore, ancestry is the connection with ancestors and the set of genetic, cultural, and spiritual heritages received from past generations; so, this set influence the concept of health and Brazilian health professional daily are invited to deal with this plurality (Gomes; Moura; Amorim, 2006; Helman, 2009) because Cultural Legacy encompasses customs, traditions, worldviews, cuisine, and knowledge passed down from father to son. The Spiritual and Collective Dimension, in many cultures, especially those from African and Indigenous origin, corresponds to the vital force besides a continuous respect for those who came before, serving as a guide to their identity and to resistance (Varricchio; Lage, 2020; Varricchio, 2023).

The multidimensional concept of health understands the human being as a whole. Health encompasses the body, mind, relationships with others, and the environment. This broad perspective helps to better care for people (originary and ethnic people). Besides physical functionality, the Mental/Emotional dimension encompasses feelings and how to deal with stress and emotions; The Social aspect includes relationships with family, friends and society, as the Spiritual or Existential dimension highlights the search for meaning in life (Zhu et al., 2025); While the Environmental factor of health includes the place where the person lives, the resources around, as well as their exposures (WHO, 2023).

Unfortunately, alongside all the unresolved global health problems, extreme weather events represent one of the greatest challenges facing humanity in the 21st century. Over the past twenty years (2004-2024), the world has witnessed an unprecedented escalation in the frequency and intensity of extreme weather and climate events, including hurricanes, storms, floods, droughts, heat waves, and wildfires that have caused massive human losses, large-scale population displacements and economic impacts estimated at trillions of dollars. The WHO and the World Meteorological Organization (WMO) monitor the impacts of climate change on human health (WHO, 2023a; WMO, 2025; Pyrrho; Varricchio, 2026).

The Sixth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC, 2021-2023) makes it clear that the link between extreme events and anthropogenic





climate change is undeniable. Recent climate attribution studies demonstrate that most extreme events that have occurred in the last twenty years have been intensified by climate change caused by greenhouse gas emissions. According to the report "Increasing likelihood of another extremely hot summer in Europe" by the World Weather Attribution group (WWA, 2023), it was possible to establish a quantifiable correlation between climate change and specific extreme events, indicating the exponential acceleration of the phenomena on a planetary scale (Dantas et al., 2024).

In general, all communities and countries are at risk of being exposed to disasters and also to violence (Cerqueira et al., 2021). But the impact of disasters is directly associated with the resilience or susceptibility of individuals and communities to the hazardous events. So, understanding and identifying individual or community vulnerability is important for developing and implementing Disaster Risk Management (DRM) policies and programmes to reduce disaster risk and increase resilience in communities (WHO, 2022). The World Health Organization (2022) defines vulnerability as physical, social, economic, and environmental conditions that increase a person or group's weakness to the impacts of hazards.

Vulnerability is determined by historical, political, cultural, institutional, and natural resource processes that shape people's lives and lifestyles, that may produce a range of underlying drivers of vulnerability (disaster risk areas or in poor housing, ill-health, political tensions, or a lack of local institutions or preparedness measures).

Some groups are more vulnerable to disasters due to characteristics such as age, gender and sexual identities, race, culture, religion, disability, socio-economic status, geographical location, or migration status. It is important to ensure that marginalised and vulnerable populations are included and are represented in evidence-based research and practice for Health Emergency and Disaster Risk Management Framework (Health EDRM). Surely, community resilience and capacity may also be estimated in search to develop and to implement appropriate vulnerability reduction strategies considered in Health EDRM (WHO, 2022).





This article intends to point strategies of health care primary attention those were employed, while Psychosocial Attention was provided. They aimed mitigation at a local level of some types of suffering and needs from displaced vulnerable people that moved to Rio de Janeiro-Brazil at 2008 till 2025 period, some of them under the face of geo-climatic-related change and its accidents.

AIMS

To make a qualitative descriptive study of an institutional case on the main advances and challenges in implementing public policies for ethnicities representatives populations present in Rio de Janeiro/Brazil, with a focus on health promotion through health education at primary attention level.

To communicate historically an interdisciplinary professional training that was performed to learn how to deal and how to work with urban ethnic groups, indigenous and several foreigner people during the environmental and social technological partnership among professors of Intellectual Property and Rights from INPI/Ministry of Economy of Brazil, of the intersectorial Environmental Health, Parasitology, Bioethics (EHPB, or SAPB in portuguese) Project from Immune Parasitology and Toxicological Analysis Laboratory (LIPAT) at Pharmacy Faculty, besides Laboratory of Studies of Aging Processes (PROVE) of Psychosocial Attention Post-graduation (MEPPSO) at Psychiatry Institute (IPUB), both laboratories belong from Federal University of Rio de Janeiro (UFRJ), in urban context in the cosmopolitan city Rio de Janeiro/Brazil.

METHODOLOGY

For this qualitative description over time, the Instrumental Case Study was adopted, where the case is used as a tool (instrument) to provide insights into a larger theme. Robert E. Stake (1995) conceived that the case study is the search for understanding its particularity.





The case study was discussed through a bibliographic review using qualitative exploratory research and documental analysis on public policies addressing health inequality. The criteria used in the data analysis were legislative and government data regarding guaranteed rights, the reality experienced by the population, and current public policies from primary sources.

Specifically to indigenous, ethnic, environmental displaced and refugee people besides secondary sources, as policy aspects that underpin the implementation of specific public policies (BRAZIL, 2001; 2009; 2014; 2014a; 2016; 2017; 2018; 2018a; 2019; 2022; 2023; 2024; 2025; EPC, 2022).

RESULTS

Between 2008 and 2026, the government's approach to environmental security in the face of disasters has undergone changes, shifting from post-disaster management to a preventive approach, in an attempt to suppress the effects of major climatic events in various regions. Examples include the floods in the southern region of the country in the 2000s, floods and landslides in the mountainous region of Rio de Janeiro in 2011, and the dam ruptures in Minas Gerais in 2015, although in Minas Gerais some cases were classified as environmental crimes.

A series of measures have been taken over time:

Law No. 12.340/2010 - Transfer of Resources for Relief and Reconstruction, which "Provides for the transfer of resources from the Union to the bodies and entities of the States, the Federal District and Municipalities for the execution of prevention actions in disaster risk areas and response and recovery actions in areas affected by disasters" (BRAZIL, 2010).

Law No. 12.608 (2012) – National Policy for Civil Protection and Defense (PNPDEC) which "Establishes the National Policy for Civil Protection and Defense - PNPDEC; provides for the National System for Civil Protection and Defense - SINPDEC and the National Council for Civil Protection and Defense - CONPDEC; authorizes the creation of





a disaster information and monitoring system; amends Laws No. 12.340, of December 1, 2010, 10.257, of July 10, 2001, 6.766, of December 19, 1979, 8.239, of October 4, 1991, and 9.394, of December 20, 1996; and provides other measures.” (BRAZIL, 2012).

Law No. 14.026 (2020) – Update of the Basic Sanitation Legal Framework that “Updates the legal framework for basic sanitation and amends Law No. 9.984, of July 17, 2000, and Law No. 11.445, of January 5, 2007, to improve the structural conditions of basic sanitation in the country [...]” (BRAZIL, 2020).

Law No. 14.750 (2023) – Law on the Modernization of Disaster Alerts "This law, sanctioned by the president in December 2025, amends Law 12,608/2012 and Law 12,340/2010, both mentioned above. This law brought improvements to the instruments for prevention and recovery of affected areas, monitoring actions, and the production of early warnings." (BRAZIL, 2023).

Law No. 14.904/2024: Establishes guidelines for the development of climate change adaptation plans; amends Law No. 12,114, of December 9, 2009. "Established the mandatory nature of Climate Change Adaptation Plans at the federal, state, and municipal levels. With this, climate risk formally became part of the public budget and urban planning of Brazilian cities." (BRAZIL, 2024).

Public policies in favor of the Roma people, particularly in the environmental sphere, still face many challenges, such as institutional invisibility. However, with Decree No. 12.128/2024 - the National Policy Plan for Roma Peoples (PNPC) - there is a prospect of greater visibility for the needs of these populations, most of whom live in ranches, camps, and on the outskirts of cities with limited access to infrastructure.

Thus, it can be observed that, throughout the analyzed period, the approach of Brazilian public policies related to environmental security and disaster management has been gradually incorporating strategies for prevention, monitoring, risk reduction, and adaptation to climate change, overcoming, albeit progressively, an approach predominantly focused on response and reconstruction after the occurrence of events. However, the existence of legal





frameworks and planning instruments does not, in itself, guarantee the effective protection of populations in situations of greater vulnerability.

In this context, it becomes fundamental that prevention and adaptation policies consider the socio-territorial specificities of historically marginalized groups, including Roma people, ensuring their access to infrastructure, basic sanitation, information, warning systems, and protection and response strategies in the face of disasters. Thus, strengthening environmental security must be associated not only with improving legislation and institutional mechanisms, but also with building inclusive public policies capable of recognizing the different forms of land occupation and promoting greater equity in the protection of the population against the risks and impacts resulting from climate events.

Since 2008 (Nunes/Tupã et al., 2010), the group have developed a retributive bioethical work (Kottow, 2011) after plant-research which approach was interdisciplinary and intersectorial (Alves, 2017) to these ethnic an indigenous urban populations present in Rio de Janeiro, Brazil (Machado/Doethyró-Tukano 2018; 2019; Wasim et al., 2019; Molina, 2020), besides intercultural medical and health professionals education (Machado/Duigó-Tukano et al., 2019; Lage, 2020; Borsato, 2020).

We also worked with ethnopsychiatry (not in a prescriptive way, which is made by clinical psychiatries, when necessary), but as preconized by Patel et al. (2018) into an existential and cultural approach (Varricchio; Lage, 2020). We dealt with the needs of refugees (Wasim et al., 2022; Borsatto et al., 2020), of urban ethnicities (Vacite et al., 2022; De Luna et al., 2021; Cler et al., 2023), besides indigenous people, all of them displaced from far distant regions to Rio de Janeiro/Brazil (Alves et al., 2019), through dynamic and creative Psychossocial Attention managed care and social technology with their leaders, their elders and young members indicated by their own leaders (Varricchio, 2023).

Indeed, the possibility of using *E. tirucalli*-derived fractions in Environmental Technology, looking for an enzymatic treatment or transformation of persistent waste materials, was therefore an emerging hypothesis with potential relevance to circular-economy strategies is scientifically attractive because enzymatic approaches may contribute to





valorization of solid materials, even through raw latex at room temperatures (Tester; Qi; Karkalas, 2006), with potential to be used in the rubble of geo-climatic accidents, besides an important potential on phyto-recovery to degraded soils (Delaunay de Souza, 2019; Delaunay de Souza et al., 2023, 2023a, 2025).

Other initiatives were important in stimulating interest in the establishment of local communities where humans and animals live, while maintaining dignified conditions for access to the minimum resources necessary for physical survival and also the potential to reduce food insecurity. Also promisors plant species to phytoremediation to be used in hypersaline effluents (Gaspar et al., 2023) and to theorical proposing of removal of chemical elements residues from water (Kathar et al., 2023). Preliminary results suggested a reduction in pollutants – tobacco cigarette smoke – in enclosed environments (Rebelo et al., 2025). While for hyperluminosity and overexposure to heat and to ultraviolet rays, plant may serve as a bioindicator of excess ultraviolet radiation (Rebelo et al., 2026).

So, empirically, we can say that this involvement was reductor of fear, anxiety and loneliness, while increased hope.

Intercultural Interdisciplinary Social Technology as strategy to Healthy Equity Promotion and Psychossocial Attention

Brazil has available several public policies in the sense to professional approach, bioethical research and educational recommendations, regarding to environmental and population health (BRAZIL, 2001; 2009; 2014; 2014a; 2016; 2017; 2018; 2018a; 2019; 2022; 2023; 2024; 2025; EPC, 2022). From a refined perspective, such approaches require respect for Traditional Knowledge, appropriate benefit-sharing frameworks, and careful distinction between documenting traditional practices and validating biomedical or biotechnological claims.

Indeed, the interdisciplinary nature of this trajectory on health promotion through health education has also resulted in several educational and technical products directed toward the dissemination of knowledge on biodiversity, traditional knowledge, environmental





sustainability, bioethics, and the health of socially vulnerable populations. These initiatives include educational booklets addressing the sustainable use of biodiversity, spiritual and mental health among traditional ethnic groups in Brazil, as well as events and activities involving traditional knowledge and associated rights, bioethics, psychosocial care, sustainability, and human rights (Pyrrho; Varricchio, 2020; EHPB(SAPB) Project-LIPAT/FF/UFRJ et al., 2021; Machado et al., 2021; LAFFH, 2021).

This distinction is important for maintaining scientific rigor while recognizing that the value of research on medicinal and biotechnologically relevant plants may extend beyond laboratory findings to include education, knowledge sharing, cultural respect, and socially responsible innovation (Varricchio et al., 2022).

These products are relevant to the present discussion because they demonstrate an approach in which scientific research is not restricted to the production of academic publications, but also encompasses knowledge translation and dialogue with traditional and vulnerable populations, as part of a broader interdisciplinary framework that connects biodiversity, traditional knowledge, environmental health, bioethics, and sustainable development. Educational initiatives further reinforce the importance of inclusive and socially responsive knowledge dissemination from health professionals and interdisciplinary partners (Malfacini et al., 2024; Pimentel da Silva, 2025; Cezar et al., 2026) together with the commitment of citizen groups (Cler et al., 2023; 2024).

These studies subsequently contributed to the development of new approaches in plant biotechnology and to investigations of the environmental potential of the species, also as cultural economic innovation resource to these cited urban communities (Varricchio et al., 2022).

The integration of basic research with ethnobotanical knowledge may therefore contribute to a scientifically grounded return of information to academic communities and, when appropriately validated, to the same traditional communities that have historically maintained the traditional knowledge concerning the species, as for example, the use of mosquito repellent plants (Bentes Lopes et al., 2024).





From this perspective, the main contribution of trajectory reviewed is the identification of an interdisciplinary research platform connecting ethnobotany, phytochemistry, toxicology, pharmacology, plant physiology, eco-physiology, traditional knowledge collaborating to environmental biotechnology and sustainable development through environmental adaptation and biotechnological applications, to promote One Health concept (Hobaica et al., 2025).

In bean model assays, the extracts used as elicitors showed different biological actions according to geographic and geological origin, discussed based on chemical structure and potential application in environmental technology for both germination and dormancy, ensuring effective transport to distant regions (Gaspar et al., 2023; Delaunay de Souza et al., 2025).

Several types of bean and leguminous are important in people diet around the world, with scientific communications very interesting to health (Hansel-Martins et al., 2026). Echinacea genus, used by indigenous people, was studied in the context of functional food applications and phyto-adaptogens (Gaspar et al., 2026a).

In other branch of approach, based on the principles of professional ethics (Beschamps; Childress, 2003; Helman, 2009; Kottow, 2011), on guidelines for higher education (BR.ME.CNS, 2014), on the existing public policies in this regard (already cited in Methodology), especially the recommendations of Professor Dr Eduardo Winter (2018), the cultural preservation work was performed with urban leaders and also the representatives of refugees (Varricchio; Lage, 2020; Varricchio, Lage, Pyrrho, 2021), which was presented to the international defence official organ: World Intellectual Property Organization – WIPO (Varricchio et al., 2022).

Consequently, our work has been associated with the preservation of the psycho-cultural identity of people who had lost so many things sequentially or, even, everything abruptly, throughout human history (Wasim et al., 2019; 2020; 2022; 2025), so, empirically reducing social vulnerability through gender empowerment (Sant’Anna, 2020; Mendes et al., 2021; Vacite et al., 2021), elder group empowerment (Varricchio et al., 2021a; Machado/Duigó-Tukano et al., 2023) at national and international social segments (Cazumbá





et al., 2023; Machado/Duigó-Tukano et al., 2023; Cavalcanti et al., 2024; Cler et al., 2024; 2025; De Almeida/Tukano et al., 2024).

Moreover, COVID-19 pandemic left hard emotional consequences that, when added to the loss of lives who did not resist, overflow any attempt at measurement. A bibliographic survey was carried out using the descriptors Pandemia Covid19, social isolation, mental health of the elderly through the PubMed platform for the first pandemic period 2020-2021 to establish action planning.

With the use of filters, 90 official articles were selected, being classified by the central themes addressed pandemic. In this way, the work sought to outline the perspectives of different peoples through their considerations upon the emotional impacts of social isolation for the elderly in the pandemic period (Varricchio et al., 2021).

So, as result, EHPB(SAPB)-LIPAT Project (Figure 1) observed as each type of culture (oriental and occidental) has different cultural pillars whose beliefs modify affective experiences. Indeed, each society faced these losses from different perspectives. Occidental articles focused mainly in technological supports, besides Oriental articles focused on contribution of daily use of Traditional Knowledge.

Through the findings of the evaluated studies, suggestions were made, because could be applied on a daily basis to increase resistance of host and bring a sense of well-being during a period of global disturbance.

Therefore, the support network could be established or reinforced familiar and affective measures, reducing the psychological force of pandemic, so to geo-climatic events (Varricchio et al., 2021).





Figure 1: Group of EHPB(SAPB)-LIPAT Project/Pharmacy Faculty of Federal University of Rio de Janeiro/Brazil (since 2016) and PROVE Lab MEPPSO IPUB/UFRJ: Professor Researchers, Students, People Leaders and representatives, Intersectorial and Interdisciplinary Voluntary Partners (Image divulgation authorized).

DISCUSSION

From 2000 onwards, an unprecedented acceleration in the frequency and intensity of climate-related accidents was observed (Pyrrho; Varricchio, 2026). This period marks the transition to what scientists call the "new normal" of climate change, characterized by multiple simultaneous changes (IPCC, 2023). Between 2004 and 2024 (a twenty-year period), 7.348 climate-related disasters were recorded, causing 1.23 million deaths (an average of 61,500 per year), affecting 4.2 billion people (an average of 210 million per year), and generating US\$2.97 trillion in economic losses (an average of US\$148.5 billion per year) (CRED, 2024; EM-DAT, 2024).

There has been unequivocal scientific recognition of human influence on extreme events, as documented in successive IPCC reports and climate attribution studies conducted by World Weather Attribution. Climatic events of exceptional magnitude, called "extreme events", have been increasing exponentially, such as hurricanes, storms with floods, with consequent droughts in other areas and desertification, compromising agricultural production



culminating in acute and severe malnutrition, in addition to other financial losses (UNDRR, 2024; Dantas et al., 2024).

Record heat waves have killed countless people, especially elderly people with difficulties in physiological adaptation. The lack of water has become critical, particularly when considering the increase in average temperature in the region. Ocean warming also has accelerated, and the concentration of CO₂ is at record levels. Ocean acidification is occurring at rates not observed in the last 26.000 years (O.C., 2025).

Such events result in the abrupt displacement to other regions of a large number of survivors, desperate under the impacts of post-traumatic stress, besides acute adrenal insufficiency (few recognized) due to excessive stress (earthquakes, tsunamis, wars, among others), cumulative losses with complex layered grief, in addition to Broken Heart Syndrome which may warn the risk of acute myocardial infarction (Hansel-Martins et al., 2026).

There is an unfair geographical and economic distribution of impacts on the planet. Especially vulnerable populations include small farmers and herders, lowland coastal communities; urban populations in at-risk areas, children, elderly, as well as women in gender-unequal regions, with child marriage accelerated due to famine (UNDRR, 2024).

According to WMO and UNDRR reports (2024), this disparity reveals the concentration of differential vulnerability in poor nations, indicating: (a) greater exposure to extreme events; (b) lower infrastructure resilience; (c) limited resources for adaptation and response; (d) dependence for economic survival on vulnerable sectors such as agriculture and livestock.

Population displacements due to extreme events reached their highest level in 16 years in 2024, a growing trend. There is increasing potential for irreversibility: ocean warming will continue for centuries even with future emissions reductions, there is loss of ecosystems (many irreversible, such as coral reefs), glacier retreat on an alarming scale, and possible collapse of critical climate systems.

Extreme weather events have immediate and direct impacts on the population and infrastructure. In addition to deaths, they cause injuries, respiratory illnesses exacerbated by





environmental extremes, malnutrition (particularly in drought contexts), and psychological trauma including post-traumatic stress disorder and depression (WMO, 2024).

Infrastructure suffers extensive damage, including the destruction of roads, bridges, power transmission lines, housing, water and sanitation systems, schools and hospitals. Indirect impacts amplify the initial damage through multiple channels. Impacts on food security result from livestock destruction, crop losses, and disruption of agricultural production chains. Water security deteriorates with emerging conflicts over water resources. Economic security is affected through supply chain losses and unemployment, food and commodity price crises, and exacerbated inequality. Health security suffers from drought-related malnutrition, post-disaster infectious (and parasitic) diseases, psychological trauma, and the collapse of health systems unable to manage abrupt changes (CRED, 2024; NOAA, 2024). In addition, it is known that the structural vulnerabilities of poor countries include inadequate infrastructure for protection against extreme events, economies dependent on climate-sensitive agriculture, limited resources for post-disaster reconstruction, and reduced adaptive capacity (CRED, 2024; NOAA, 2024).

Displacements can be permanent or temporary, causing cascading humanitarian crises when multiple events occur in sequence. Political security is threatened by mass displacements, the possibility of conflict over resources, and prolonged humanitarian crises, as recently and continuously reported by international media. The cumulative global economic losses demonstrate extraordinary magnitude (CRED, 2024; NOAA, 2024).

Future projections, according to the IPCC 2023, indicate that even with mitigation measures, even more extreme events are inevitable. The next decade (2020-2030) constitutes a critical period for determining the planet's centuries-long climate trajectory.

Thereby, Vulnerability and Adaptation (V&A) assessments do not only improve the understanding of the linkages between climate change and health, they can also serve as a baseline analysis against which changes in disease risks (sanitary emergencies) besides protective measures can be monitored. They can also provide the opportunity for building capacity and can strengthen the case for investment in health protection (WHO. CCH, 2026).





Furthermore, it is imperative to rethink about the concept of health. The WHO defines health as a state of complete multidimensional and social well-being. Cultural differences in perceptions of health and illness influence treatment motivation, symptom management, family/community support, healthcare provider choice, healthcare access pathways, and treatment outcomes. Culturally, the understanding of health also varies: some cultures link it to spiritual and social well-being, while others focus on physical health. These disparities generate diverse dimensions of health measurement, hindering the formation of an integrated evidence base (Zhu et al., 2025).

In Science, Ethnobotanical Knowledge has contributed to the identification of plant species used for therapeutic purposes and has, subsequently, stimulated pharmacological and phytochemical investigations. The environmental dimension of the species is also relevant to the broader concept of plant-based approaches for environmental recovery. Investigations, conducted in different geographical contexts, have stimulated interest in the use of plants and plant-derived products in strategies related to environmental management and to interruption of biological cycles associated with parasitic organisms, but also moving toward mitigating some social environmental disruptions which evidence social suffering of several vulnerable, some restricted (and yet some destitute) populations groups (ICHP, 1986; Goffman, 1987; Kleinman; Das; Lock, 1997; Tiwari; Singh, 2005; Varricchio; Lage, 2020).

So, ethnobotanical dimension shall also remain central to this discussion because Traditional Communities have historically developed knowledge concerning plants through long-term interaction with their environments. They're not destitute, but indeed established, well established in their cultures, being who they are. Research involving African and Asian ethnomedicine and ethnobotany could, therefore, contributed not only to the identification of candidate species and compounds, but also to the development of culturally appropriate strategies for health, environmental management and sustainable use of biodiversity in Brazil (Nagamatsu et al., 2019), including germination and transport of seeds, besides solid waste proper destiny (Delaunay de Souza; Rangel, 2019; Delaunay de Souza et al., 2023, 2023a) aiming to fix populations with access to minimum resources to a dign survival, to





environmental recovery (as possible) through their own knowledge besides cultural preservation. Consequently, evoking well-being through the preservation of the psychocultural identity of people, who have lost sequentially throughout human history or abruptly, in recent geo-climatic disasters.

Environmental Health Management (Multidimensional and Intercultural): Professional Team and Populations

According to WHO (2010), Equity is the absence of unfair, avoidable or remediable differences among groups of people, whether those groups are defined socially, economically, demographically, or geographically or by other dimensions of inequality (e.g. sex, gender, ethnicity, disability, or sexual orientation). Health is a fundamental human right, so health equity is achieved when everyone can attain their full potential for health and well-being. Structural determinants (political, legal, and economic) with social norms and institutional processes shape the distribution of power and resources determined by the conditions in which people are born, grow, live, work, play and age as well as biological determinants.

WHO (2010) emphasizes that people's living conditions are often made worse by discrimination, stereotyping, and prejudice based on sex, gender, age, race, ethnicity, or disability, among other factors. Discriminatory practices are often embedded in institutional and systems processes, leading to groups being under-represented in decision-making at all levels or underserved. So, the aim is to eliminate inequities resulting from differences in health and in overall living conditions. Miguel (2015) reflected on Social Vulnerability and Health, in accordance with the model proposed by Castell. Conversely, health issues may weaken social cohesion, increase social burdens, and even threaten social stability and development. When society faces numerous health problems, healthcare resources and economic burdens may be exacerbated, thereby affecting the overall well-being of society. Social epidemiology has consistently demonstrated that social inequalities are powerful determinants of population health (Marmot, 2017).





Further, Clark; Preto (2018) considered, the four principles of bioethics — autonomy, beneficence, nonmaleficence and justice — commonly applied in health care. The early positioning of particular groups as vulnerable in research ethics guidelines (e.g., those who are sick or impoverished, or belong to a minority group) signalled that vulnerability could be considered a product of both internal factors (e.g., limited capacity to consent) and external factors (e.g., subordinated position).

Almost ten years later, a new proposal emerged regarding the concept of Vulnerability in Health (VH), redefined through the social subject concept, with its precariousness and agency related to processes of potentiating or weakening vulnerability in health. The understanding that subject is also a reflection of the social context, then, becomes an essential element for the identification of social vulnerability in health (Florêncio; Moreira, 2021), a condition that brings the social determinants of health closer to the reality, practice and concreteness of the approach embedded in the multidimensional concept of health for promoting health, preventing diseases and providing care. Thus, healthcare providers need to adjust and innovate according to the health status of the population to meet the changing needs (WHO. CCH, 2026).

Regard, Environmental Health is in relation to all aspects of human health, spanning natural and anthropogenic environments, what can reflect human responsibility for the ecological environment. The WHO (2011) proposed the concept of “One Health“, fostering harmony between humanity and nature, individuals and communities, and people and society, which explicitly adaptation to life’s demands and environmental conditions (Lerner, 2019). Researchers aligned it to the concept of resilience (Babic et al., 2020), a fundamental ability, in contemporary world (Varricchio; Lage, 2020).

Collectively, these perspectives converge to health as a balance between internal stability and external perturbations (Zhu et al., 2025). Six core attributes essential to understand the status of health: Complexity (multifarious interactions), Multidimensionality (environmental, psychological, and social factors, constructing a comprehensive network), Dynamism (resilience, coping abilities; vitality), Continuity (from birth till death), Objectivity





(“indicators”) and Subjectivity, reflecting individuals’ unique subjective experiences, known as singularity (Varricchio, 2023; Zhu et al., 2025).

These attributes are further elucidated across five dimensions (Zhu et al., 2025):

- Physical (functional capacity);
- Mental (well-being enables individuals to realize their abilities, engage in productive activities, to enjoy life and resilience to challenges);
- Social (the ability to interact and perform roles in multiple settings, achieving harmony through dynamically adjusting lifestyle);
- Moral (holistic acknowledging how an individual’s ethical reasoning, values, and actions into social equity and basic human rights, exhibits pronounced cultural diversity In Berwick, 2020);
- Environmental health (outside factors and relevant internal factors influencing behavior, achieving sustainable development, and social harmony).

Recognizing the multidimensional nature of health and its intricate connections to social indicators is crucial for developing comprehensive health policies and strategies that resonate across diverse cultural contexts (Barry, 2021; Greer et al., 2022). The impact of health on individuals and society is multifaceted, in multiple areas, such as lifestyle, healthcare services and social development. These perceptions and behaviors, in turn, have an indirect effect on health outcomes. This situation leads to a substantial rise in healthcare costs, also resulting in labor loss and decreased productivity (Weeks, Weinstein, Lavista, 2023; Zhu et al., 2025).

For policymakers, it provides a basis for addressing complex health challenges, fully considering the health needs of different populations, thereby informing the creation of fairer, more sustainable, and impact-driven health policies. It should be particularly pointed out that the concept of health has a significant interdisciplinary nature (Barry, 2021; Weeks, Weinstein, Lavista, 2023).

As previously discussed by EHPB(SAPB) Project upon Pandemics and the first period of academic production (Varricchio et al., 2021), note of worthy, western frameworks





emphasize autonomous moral reasoning, prioritizing individual rights and deontological moral judgment. While Eastern traditions focus on relational morality, centering harmonious integration within collective ethical systems. Thus, a more universal health concept was explored by Zhu et al. (2025) in a way of seeking common ground while reserving differences, providing more inclusive and adaptive theoretical guidance for global health promotion.

Global health is a field of research and practice dedicated to applying multidisciplinary, multi-sectoral and culturally sensitive approaches to reduce health disparities that transcend national boundaries (Alkire; Chen, 2004; Gopalkrishnan, 2020; Salm et al., 2021). The evolution of the health concept towards multi-dimensional integration influences the formulation and practice of global public health policies, promoting the development of global health and wellness through conceptual innovation and practical transformation, looking for a strategy to “seek common ground while respecting differences” (Barry, 2021; Greer et al., 2022; Weeks, Weinstein, Lavista, 2023).

International policy documents suggest that health care providers, researchers and policy-makers have ethical obligations in terms of human rights both to protect from harm and to respond to the needs of those vulnerable. These ideals in Canada’s health care system are rooted in the principles of equity and solidarity, with the goal of providing universal access to medically necessary health care. Piggott still explores semantic differences among the terms “vulnerable,” “marginalized” and “underserved” in relation to populations with relatively lower health status. Whereas the word “vulnerable” situates problems internally, the term “underserved” calls attention to systemic issues that result in unmet needs. As discussed by Clark; Preto (2018), failure to appreciate nuances regarding the language of vulnerability has implications for how we understand, analyze and address challenges in health care.

Nevertheless, in a philosophic way of comprehension, Rendtorff’s caution considers that although it is frequently painted as such, vulnerability need not be considered as a negative attribute, as to be human is to be vulnerable. This understanding mandates an





ethical duty to create just and equitable health care systems that promote autonomy, foster engagement, enhance cultural safety and support the well-being of all (Clark; Preto, 2018).

In addition, in psychosocial care, territory is not merely a geographical delimitation. It encompasses social relations, services, circulation, work, culture, conflicts, affections, and resources that can favor or restrict ways of life. Territorial reintegration, therefore, depends on the transformation of the relationships between the person, the community, the institutions, and the extended support network, provided that this participation does not transfer to the community responsibilities that belong to the State (Buss et al., 2020). For example, Tuberculosis in indigenous people in Brazil is high and is increasing and their social determinants must be officially followed by Ministry of Health (Amarante, 2010; Massa; Moreira; Nicácio, 2019; Buss et al., 2020; Ferreira et al., 2020).

Thus, singularity, understood as an inherent and distinct quality of the subject, takes center stage in the relationship with “environmental dislocated” because, in any action, it must be observed that “The first step in offering humanized care [...] is to recognize the uniqueness of each individual” (Jansen, et al, 2021, p. 5). Here, autonomy should be understood in a relational way, and not as absolute independence. Different people need different support to decide, move around, manage resources, and build life projects. From this perspective, supporting does not mean replacing the person in everything, but expanding their capacity for choice and participation (Silva et al., 2022), as realized (Varricchio, 2023).

Therefore, the construct of Cultural Intelligence (CQ - Earley and Ang, 2003) had already defined the ability of individuals to function effectively in culturally diverse contexts, encompassing four dimensions: metacognitive, cognitive, motivational, and behavioral. So, cultural intelligence strengthens the therapeutic alliance, reduces biases, improves intercultural communication (Nunes, 2013), and enhances culturally sensitive care practices in mental health services, through dialogue that brings a powerful natural encounter among people, but so meaningful, among citizens (Varricchio, Lage, 2020; Varricchio et al., 2022).

While, Cultural Competence (CC) is the ability to understand, communicate, and interact effectively and respectfully with people from different cultural backgrounds and





contexts. It involves knowledge to understand the values, beliefs, and practices of diverse groups; skills (communicating well and adapting approaches to the needs of others); and attitudes (maintaining empathy, openness, and interest in others, avoiding judgment). It demands to be developed in professionals, specially, in healthcare professionals (Varricchio, 2023).

Risk and Vulnerability Management for Professional Teams and Citizens

Our interdisciplinary psychosocial attention approach was based on public health policies and to be performed through Eduardo Winter's social technology methodology proposed (2018). In a comprehensively way, it was elucidated the experience of primary health actions care through respectful, ethical, active, cooperative and collectively encounter bilaterally constructed, providing comprehensive intersectorial health management (Varricchio; Lage, 2020; Varricchio, 2023), as previously pointed out by Zhu et colleagues (2025) on the significant interdisciplinary nature of health. Understanding this type of healthcare is initially – and primarily – provided by workers and voluntary workers dedicated to offering healthcare to the population, this should be the priority for management, given that this segment is what will lead to improvements in the population's health and, conversely, when neglected, has the opposite effect on healthcare quality. Even though the project involved volunteer citizens, professionals, undergraduate and graduated students (Medical Residency, Master's and Doctorate), they were also selected according to their profiles for the different roles, and train was carried out. Cultural Competence was built through a pedagogy of Ancestry, at this stage, associated with "Literacy" (De Luna et al., 2021; Mendes et al., 2022; 2022a; Xavante et al., 2024).

Cultural intelligence of population groups and peoples

Thus, varied paths led these people to refugee shelters, vertical villages, favela communities, and camps on the outskirts of the municipality of Rio de Janeiro/Brazil. Places





where they were deprived of the “freedom to be” (their customs), having been limited in various ways in their lives (without their collective procedures, their individuality, without their will, without the right to choose, without their space or any opportunities to be who they are). So, the sympathy predominated and empathy was higher than barriers (Varricchio; Lage, 2020). As Amarante (2010) observed, the community coexistence with this “other” (intercultural) contributed to modify stigmatizing perceptions and favored responses less centered on distrust, fear and isolation.

“Care in freedom” in Psychosocial Attention care management means and implies in rebuilding citizenship, social bonds, circulation and decision-making capacity (BRAZIL, 2001; Amarante, 2010). Therefore, the evaluation of this construction process must consider the concrete possibility of each person inhabiting the city, establishing relationships, exercising rights and duties, and building unique life projects (Amorim; Dimenstein, 2009; Nascimento; Batista, 2020).

Therefore, and as an alternative, in the absence of intercultural training to provide health support to representatives of displaced populations living in urban areas of Rio de Janeiro, the implementation of matrix support within Family Health Units (USF) was strengthened. During the multi-interdisciplinary and intersectoral work, training was provided to health network professionals by volunteer social workers, three of whom were also indigenous (Leal et al., 2022). We also perceived, through a more transversal management, a more welcoming territory, capable of understanding the diversity of lives, their demands, possibilities, potential and self-direction (Machado/Duigó-Tukano et al., 2019; Wasim et al., 2019; Simões et al., 2021; Alves et al., 2025).

Autonomy is produced in everyday practices — moving around, buying, deciding, creating bonds, and participating in the community — and depends both on the support offered and the opportunities that exist in the territory, on territorial belonging (Massa; Moreira; Nicácio, 2019; Silva et al., 2022). As health professionals, we have an obligation to seek paths in science, experiences and possibilities to increasingly advance the production of





life and autonomy, according to their vulnerable but potent way to citizen participation based in their singularities.

Thus, Silva Júnior & Mascarenhas (2004) had already reflected on the three dimensions of welcoming. Regarding the first dimension, it “implies the humanized and receptive attitude of professionals when receiving, listening to and addressing the demands of users; implying a relationship of mutual interest, trust and support” (Figueiredo; Schmidt, 2009, p. 130).

“[...] Individual Therapeutic Project recognized by the National Humanization Policy (PNH, 2010) as a resolute device within the scope of care, service management and health network. [...] one of the main care strategies in mental health services, as it is a clinic that welcomes, bets on the formation of bonds and monitors the continuity of care for the user”.

Understanding body (the whole person) as a place where the subject's history is inscribed, in the same way that ethnicities and ancestral knowledge consider it, a series of practices were initiated aimed at (i) rescuing self-esteem (ii) and rescuing the perception of their actions both individually and collectively. Rebuilding connections and producing synergy were necessary, along with a great deal of creative work and cherished memories. This was the result of an ongoing process, built in the “here and now,” with each encounter driven by affection: that human capacity to affect and be affected in contact with one another, in that space of “being-with,” and to perceive the nuances of their power to act in a clear and distinct way, sometimes positively, sometimes negatively (Deleuze, 2002; Nunes, 2013).

Furthermore, as a concept widely disseminated in the literature, the psychic function is natural to the human mind and has a structuring function in thought. It can, therefore, be used as a component of ‘healing’, in addition to creativity itself having this function” (Jung, 1964). Creativity, considered as an expansion of knowledge and self-realization, is also an inherent capacity of the subject, during the active application of art therapy, which functions as an instrument to stimulate creation (De Moraes, et al., 2014, p. 9). It was aiming the production





of physical and mental wellbeing for the individuals involved through the rescue of affective memories at brain network (Tavares da Silva, 2017).

This monographic work was guided by the Buddhist myth of the Indra Network, which teaches that absolutely everything is connected in the unity of the universe. There was an approach the human being in an integral way, in his double mind and body, through the window of neuroscience and neuroplasticity. Art is a mobilizer of intense mental and physical strength. Art therapy can and should consider the new frontiers of brain knowledge to enrich and reaffirm its practice in the art of healing. It was concluded that in the paths of creativity occurred an activation of different brain circuits that focus favor the process of the art in order to promote human health (Tavares da Silva, 2017).

Therefore, to minimize memories of suffering and negative experiences, the change needs to be perceived as a significant and positive rupture for both: rescue participants and environmentally displaced persons (Bentes Lopes et al., 2020). This is because it is necessary to describe the perception, since beyond the change of location (from home to temporary shelters and schools, peripheral camps, vertical villages in buildings), there is a change in the daily experience of living (Varricchio; Lage, 2020).

So, a set of care and art activities was proposed for the Individual Therapeutic Project (ITP) of persons of EHPB(SAPB) Project & Institutes Associated, via art therapy, which was based on the conceptions of artistic expressions of different peoples we dealt (Varricchio, 2023; De Souza/Xavante et al., 2024; De Oliveira/Goytaká et al., 2024). Generating also a change in the way people respond to the crisis caused by the environmental catastrophe, and the fear instilled by the abrupt loss of so many people of their affections, stories, and things of value, so creative could be followed by community-based protective initiatives of Cultural Intelligence (Nunes, 2013), such as outreach, communication and network activation.

So, the allowing oneself to be affected by positive emotions such as empathy and solidarity could possibly serve as an indicator of reducing stigma and, at the same time, building a community culture of care as evidenced during pandemics (Agorastos et al., 2021). Besides, family reconciliation, along with the maintenance of bonds weakened by grief





caused by deaths (by violence, Covid19, etc), will always be a challenge. Therefore, it was and will be important to build spaces for health, creative spaces, and spaces for affection, to favor the emergence of the reconstruction of bonds (Leal et al., 2022).

This presentation aimed to explore the possibility of inspiring, through the translation of voices from a unique sociocultural experience: The establishment of a university extension project EHPB(SAPB) Project from Parasitology Laboratory (LIPAT - basic research) associated with Study of Aging Processes Laboratory (PROVE/IPUB) besides several great intersectorial partners, reflecting the vibrant internal reality of the leaders of diversified cultural groups, their psychic singularities, ability to self-care, working with their cultures. In summary, to transform grief in positive attitudes with consequently well-being and self-realization, despite serious concrete difficulties. They're in life (Varricchio, 2023).

The experience also transformed the community's perspective on psychological suffering from collectives diversified (Varricchio, 2023). This suggests that knowing how to deal with different, strange, uncertain, undefined, and "open and unsolved" situations may be part of the process of resilience and maturity for the contemporary world, perhaps stimulating creative solutions based on the cultural observation of nature that these peoples brought to us.

In part, this thought converges to Spinoza's concept upon potency (Deleuze, 2002) and the progressive capacity of being alone (and individualized) as proposed by Donald Winnicott (1983).

From Multiculturalism and Intercultural Education to Transcultural Perception

According to the Ottawa Charter (WHO, 1986):

“Health promotion is the name given to the process of empowering the community to act in improving its quality of life and health, including greater participation in controlling this process.

To achieve a state of complete physical, mental and social well-being, individuals and groups must know how





to identify aspirations, satisfy needs and favorably modify the environment.”

Regarding their right to move around independently... Yes. There is an autonomy that goes beyond the individual characteristic; A socially constructed and recognized autonomy within the territory. The territory appears not only as the geographical location where they currently live, but as a space that produces relationships and care. Data shows the existence of informal and formal territorial resources that sustain daily life. Therefore, even in the absence of specialized equipment, as in a climate disaster situation besides people dislocated, under unfavorable conditions, it does not mean absence of care (Varricchio; Lage, 2020; Cler; Gaspar et al., 2023; Cler et al., 2024; 2025).

Events (meetings) with leaders and professionals held in our healthcare spaces can be considered methodologically as markers of belonging at a local (and also transitory) level, since they were filmed with their free and informed consent, it may be identified and measured the capacity for sociability and affection (MUL-RJ, 2023; EVENT XVI SAPB-LIPAT & PROVE-IPUB & PARTNERS, 2024). They may provide an opportunity for the community to change its prejudice and understanding of people experiencing psychological distress as a result of environmental problems and climate-related accidents (Wasim et al., 2020; 2022; 2025a).

A meeting is not just about bringing people together, it constitutes an open space for confronting and understanding oneself and others. It is required detachment, courage, and openness to experiences of exchange with different singularities. It is in this space that people begin to recognize themselves and project their desires and affections. Here, autonomy was relational and also concrete (MUL, 2022). As discussed by Walker; Mcgee; Druss (2015), the success of this “new beginning” was not measured by passive adaptation to the situation, but by the real expansion of possibilities to desire, choose, participate, and build life projects, besides according with evaluation of emotional/mental conditions and profile of each one – person or group (Varricchio, 2023; Pyrrho; Varricchio, 2026a).





Brazil is a developing country. There is a lack of resources among those we deal with during this period from 2008 to 2025, especially those arriving as war refugees and those displaced by environmental disasters due to geo-climatic events. Therefore, for all these reasons, from both Brazilian and foreign collectives, it was also necessary to invest in the economic dimension of autonomy (Machado/Duigó-Tukano et al., 2021; EVENT XVII SAPB-LIPAT & PROVE-IPUB & PARTNERS, 2024a; De Almeida/Tukano et al., 2024; Alves/Sate-Mawe et al., 2025).

Besides, in a systematization of theoretical productions on human resources in health, Peduzzi and Schraiber (2000) had already pointed out the interdisciplinary nature of the area and the need to promote a new concept of human resources in health. They identified the need for analyses of the anthropological dimensions of these workers, issues of quality and productivity at work, and the construction of a theory of work in health organizations. They also highlighted the gap in alternative approaches to work management, studies on the subjective dimension of workers, and theoretical-methodological alternatives that support the complexity of work in the daily routine of these organizations. Santos (2017) reflected:

“Reflecting on the consequences of [your] work,
not only for others, but for [yourself] as well,
and where all parts
– emotional, spiritual, intellectual, physical, and moral –
can have a voice and be integrated”
(Santos, 2017).

So, based on the principle of caring for those “who care”, as a dimension of the quality of care itself, by producing subsidies in diversified care alternatives, the project to promote the health of members of different populations located in an urban context in Rio de Janeiro, in question, was legitimized (Varricchio, Lage, 2020; Varricchio, 2023) by being duly aligned with recommendation three of the WHO Comprehensive Mental Health Action Plan 2013-2030, which deals with “Strengthening mental health care by changing the places, modalities and people who offer and receive services” (WHO, 2019).





Recent documents identify that the area is being considered the most complex within the Brazilian Unified Health System (SUS), reinforcing the need to reclaim the management of work in health as a public policy and equally the need for professional valorization and regulation of labor relations, thereby strengthening mental health care within the scope of Primary Care, also involving the intersectoral network.

Galileu (2024) placed Brazil among the countries with the worst post-pandemic mental health, with 34% of the population considering themselves “distressed.” Young people under 35 are the most affected. Data from the Ipsos Health Service Report (2025) highlight Brazilians' perception of the urgent need for strategies to health promotion. Added to addiction to quick-response compensation caused by the internet and continued exposure to toxic networks (dark web and deepfakes), with effects on physical health, including the development of cognitive deficits associated with behavioral disorders and lower serical levels of neurotransmitters which don't appear even as an “occult demand”.

The magnitude of the challenge was already highlighted by the WHO (2024), which in 2019 stated that “almost one billion people worldwide were living with a mental disorder.” Its evidence-based Comprehensive Mental Health Action Plan 2013-2030 includes recommendations for actions as a “path to transformation.”

Returning to the central theme, the subjectivity of these representatives, leaders, and members of peoples and ethnic groups was not treated as a license for a narrative lacking rigor, but as a dimension to be critically examined and methodologically confronted through ethnography (Varricchio, 2023), aiming at qualitative theoretical production of the experience, also with the evaluation of health services (management) and the training of human resources into the development of the necessary competence (LAFFH, 2021; Cruz Filho et al., 2023; 2024).

Therefore, during this work, unique access was offered, but it also required reflective vigilance regarding power asymmetries, selectivity of memory, and possible conflicts of position (Beauchamp; Childress, 2002; Helman, 2009). This strengthens interpretative





consistency and allows us to understand how management decisions were experienced by workers, volunteers, participants and communities in the territory (Varricchio, 2023).

Locally, in our territory, the university context, the expression "here and now" was brought to us by a Caeté indigenous from Maranhão. It signified the subjective space and choice of each individual, temporarily distancing themselves from traumatic events that persist in their memories. In other words, the person chooses themselves (prioritizing themselves without guilt to move forward) in that situation, in that place, with those people, and at the same time, broadening their perspective and action towards the world (Varricchio, 2023).

The shared experience during the planning of activities for the recovery, care, or installation of gardens, orchards, and vegetable gardens reduced distances, favoring responses less based on mutual distrust and more focused on the interest in discovery and learning from the culture of the "other", in the "here and now," also incorporating actors from the territory into the expanded care network. Throughout this period, 04 multi- intercultural gardens were constructed with them and with intersectorial interdisciplinary partners to relief, to valorization of each culture, to integrate the group in a health space "possible" (BR.MS.SUS.PNH, 2009), where they were invited "to be" and to offer inter and, much more, transcultural experiences besides cultural, symmetrical, peaceful, affectives exchanges to all, remembering us that we are One (Wasim et al., 2022; Gaspar, 2024).

Contributions to Health Management

The first step in management was the evaluation of partner health services in their different missions. Based on the results, the contributions to management were ordered as follows:

- Before the problem: preparing the team, workflows, communication, and psychosocial protection strategies (Nunes/Tupã et al., 2008; Vacite; Vacite, 2016; Machado/Doethyró-Tukano et al., 2018; Delaunay, 2019; Borsato et al., 2020);





- During the problem: ensuring resources, training, listening, communication, and leadership presence (Molina, 2020; Machado/Doethyró-Tukano et al., 2019; Machado/Duigó-Tukano, Musmanno, Lage et al., 2020; Machado/Doethyró-Tukano et al., 2020; De Luna et al., 2021; Vacite et al., 2022);

- After problem established monitoring repercussions, maintaining spaces for care, recognizing what remained and what is still demand once identified risk (Machado/Duigó-Tukano et al., 2019b; Machado/Duigó-Tukano[†] et al., 2023).

Therefore, this article does not represent an end point, but a starting point in relation to the study of primary health care without the resource and without the specialized support of Psychosocial Care Centers to persons from ethnic groups and indigenous people in Brazil, who did not present aggravated mental illness or mental disorders, but indeed were experiencing intense psychic suffering for several motives, both of their historical environmental displacement and exclusion (Werneck; Dacach, 2004; Mendes; Tavares, 2011; Andrade Junior, 2013; Garnelo, 2013; Lima; Faro; Santos, 2016; Cesarino; França, 2017; Gomes; Batista, 2020) or by geo-climatic disasters (Pyrrho, Varricchio, 2026).

Notably was their conscienciousness as “world citizens maintaining an universal family”: Resilience, a desire to make better use of time for activities carried out together, proactivity, creativity with solutions based on observations of nature. It was clearly expressed and reaffirmed that their cultures promote multidimensional health, both in complexity and in uniqueness (Varricchio, 2023), a comprehension that, in part, converges to discussion made by Correia (2021) and Zubiaurre (2023).

“The resilience of the Roma people is deeply connected to the strength of family and community ties, the preservation of memory, the transmission of knowledge, and the capacity for adaptation in the face of difficulties. Throughout history, even facing persecution, prejudice, displacement, and different forms of exclusion, the Roma have managed to preserve their identity, values, and traditions. It is important to understand, however, that the Roma people are diverse and made up of different clans. Each clan has its own habits, customs, and traditions, just as each family may preserve particularities transmitted between generations. Therefore, cultural practices should not be generalized as if all Roma lived or expressed their traditions in the same way.





Despite this diversity, there are values widely present in Roma culture, especially the importance of family, community, solidarity, and respect for elders and children. The elders are recognized as important guardians of memory. We often say that they are our “living encyclopedias,” as they carry knowledge, experiences, habits, and customs that have historically been transmitted predominantly orally, from generation to generation. Children, in turn, represent continuity: they receive these teachings and can pass them on to future generations.

This relationship between the elders, the family, and the new generations directly contributes to the cultural resilience of the Roma people. It is through these bonds that memory remains alive, knowledge is shared, and identity manages to transcend time, even in the face of adversity. In this broader context, values such as freedom, respect for differences, and a respectful relationship with nature and the environment can also be considered in our culture, always also recognizing the diversity that exists among the different Roma clans and families”.

Marcelo Vacite – President of the Gypsy Union of Brazil.

By documenting the experience of deal with several singularities, its results and its tensions, the work outlines a research agenda capable of deepening, in future studies, the effects of territorial care, network organization, and public policies on life (César et al., 2025; 2026). And yet upon how to deal with the fear of circumstances that cannot be predicted in general, such as the return of a pandemic, glacier fractures due to global warming, earthquakes due to tectonic plate slippage, cyclones, among others (Varricchio, Lage, 2020; Varricchio, 2023; Pyrrho; Varricchio, 2026).

The article proposed to describe strategies developed based on demands and on needs placed on local management to meet, protect the duties and rights of people from other displaced populations, for different reasons, located in Rio de Janeiro in state of psychological suffering, specially during the pandemic. It was aimed to redirect the care model in mental health care (BRAZIL, 2001) but also adopting the expanded concept of multidimensional health for these elements welcomed in intercultural experience by the extension EHPB(SAPB)-LIPAT Project/FF/UFRJ), by INPI, by PROVE Laboratory of the Psychosocial Care Program of the UFRJ Institute of Psychiatry (PROVE-MEPPSO-IPUB/UFRJ) and several intersectoral partners as 7a Ward of Santa Casa da Misericórdia do Rio de Janeiro Hospital, Cultural Center of UNIFASE-FMP, Sol y Luna Cultural Space, CEDIND-RJ, Gypsy Union of Brazil, Amazon Biobusiness Center, Galileo Institute of Technology and Education





of the Amazon among others very relevant partners to the project (Varricchio; Lage, 2020; Varricchio, 2023).

All technical products, technical articles, academic articles, and E-book chapters produced were effectively, cooperatively, voluntarily, and collaboratively developed by leading members from different peoples, addressing the common and cross-cutting problems identified during the events and meetings (LAFFH, 2021; Varricchio et al., 2022; Varricchio, 2022; Varricchio et al., 2026).

Based on the results of our qualitative experience, one of the most technical products discussed was the booklet for management, reception, inclusion and health production in the continuum of life with people with anxiety disorders, post-traumatic stress, psychological distress among others (Wasim et al., 2022). In this sense, our educational activities naturally evolved towards an Intercultural Education and Cultural Intelligence also mitigating stereotypes (Lage, 2020; Do Amaral, 2021; Da Silva In CFQ, 2021).

Themes whose necessarily permeates promotion of Global Health at local level through Transcultural Primer (Machado/Duigó-Tukano et al., 2021) to easier human contact during Primary Health Care approach on Geo-climatic Accidents (Pyrrho; Varricchio, 2026).

PRODUCTS

Events for meetings of ethnic leaders and professionals working on climate issues, for reflections on age-old local solutions associated with environmental and social technologies (Tavares da Silva, 2017a; Machado/Duigó-Tukano et al., 2019; Machado/Duigó-Tukano, 2019a; Delaunay, 2019; Pyrrho; Varricchio, 2020; LAFFH, 2021; EHPB(SAPB)-LIPAT/FF/UFRJ PROJECT & Associated Institutes, 2021; MUL-RJ. 2023; EVENT XVI, 2024; EVENT XVII, 2024a).

Diversified Intercultural Educational Products were made (Vacite; Vacite, 2016; Alves./Sateré-Mawé et al., 2019; Varricchio et al., 2021; Vacite et al., 2022; Wasim et al., 2020; 2022; Bellizzi et al., 2022; 2022a; 2023; Leal et al., 2022; Cazumbá et al., 2023; Da Silva; Cazumbá; Varricchio, 2024; Pimentel, 2025; Gomes, 2025).

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Multi and Intercultural Gardens generated Multicultural Primers (De Oliveira, 2020; Machado/Duigó – Tukano et al., 2021; Wasim; Zafar et al., 2021) and video (Machado/Chief Doethyró-Tukano, 2021), that had sent a potent message to sensibilization to respect and to environmental ethic (PROVE-MEPPSO, SAPB-LIPAT, LAFFH-UNIFASE, 7ª Enfermaria do Hospital Santa Casa da Misericórdia do RJ, 2021).

So, we moved into transcultural products (Machado/Duigó – Tukano et al., 2021a; Varricchio et al., 2022; Gaspar et al., 2024a; Varricchio, 2026).

Scientifically communicated steps concluded:

- From university professionals at an interdisciplinary level (Nigri et al., 2017; Gaspar et al., 2020; Hansel – Martins et al., 2023; Gaspar et al., 2023; a, b; 2024; Bellizzi et al., 2023; Cruz Filho et al., 2023; 2024; Kathar et al., 2023; Bentes Lopes et al., 2024; Gayer, 2024; Ximenes Lins et al., 2024; Malfacini et al., 2024; Cézar et al., 2026; Hansel – Martins et al., 2026; De Souza et al., 2026).

- From representatives of peoples in accordance with their areas of university education (Machado/Duigó-Tukano et al., 2023; De Almeida/Tukano et al., 2024; De Souza/Xavante et al., 2024; Wasim et al., 2025; De Oliveira/Goytaká et al., 2025).

These approaches and products shown are particularly relevant because they may be applied in a transversal cross-cultural way to regions where neglected diseases, environmental degradation and socioeconomic vulnerability occur simultaneously to displaced people, as refugees sites (Shi et al., 2005; Seneviratne et al., 2012; Borsato et al., 2020), survivals in areas of geo-climatic disasters (Wasim et al., 2022; 2022 a); besides ethnic groups as roma (Cavalcanti et al., 2024), black (Cler et al., 2023) and indigenous people (De Oliveira et al., 2025).





LIMITS

This study is a theoretical and narrative literature review and is therefore subject to the limitations inherent to secondary-source research. In addition to a single experience from only one group.

CONTRIBUTION

The following were identified as fundamental elements: (i) the perception of the user as a subject; (ii) the appreciation of their (ethnic) uniqueness; (iii) in the health space (BR.MS.SUS, 2009), the construction of a space of freedom and a sense of belonging; (iv) the construction of a new “body” for the patient, maintaining a traditional vision alongside the contemporary one of the current territory; and (v) the activation of synergy – based on affection – capable of favoring the achievement of other activities at their own local level.

These products illustrated the broader interdisciplinary dimension of the research program, particularly its emphasis on biodiversity, traditional knowledge, environmental sustainability, bioethics, health promotion, and knowledge dissemination. They also demonstrate the commitment to translating scientific knowledge into accessible educational materials and strengthening dialogue between academic research and traditional and socially vulnerable populations regards climate related changes and geological instabilities at a local level.

From a broader perspective, we suggest Multicenter Qualitative Research. According to Yin (2001), a case study constitutes an empirical investigation aimed at understanding a contemporary phenomenon within its context, especially when the boundaries between the phenomenon and its context are not clearly defined. This strategy allows for the use of different data sources and techniques, favoring a deeper understanding of the particularities and complexities of the case under investigation.





CONCLUSION

The reality of increasing extreme weather events is undeniable, supported by objective data from multiple international scientific institutions, and urgent actions for mitigation (reducing emissions by 43% by 2030), adaptation (resilient infrastructure), and climate justice (funding for vulnerable nations) are imperative to reduce present and future human suffering. To proactively address this human suffering, cooperative dialogue regarding the needs identified by population groups should be established, aiming at achieving effective citizen actions at the local level as part of Brazilian Psychosocial Care.

Implementation of Public Policies to climatic changes requires intersectoral actions aimed at mitigating prejudice of anthropic features, fear in the face of different cultures and clinical situations that are not yet well understood in epidemiology as climatic changes in human beings. This represents one of the roles played by psychosocial care to multidimensional health.

Environmental ethics, environmental technologies were employed to recovery and preventing of harm to our plural population. Social technology evoked an active posture of citizenship and as an effective dimension of human rights (dignity). Listening, ethic, respect, empathy, solidarity and valorization of “others” knowledge and abilities are foundational and structuring concepts to a continuous construction to professional competences, to a world healthy, besides a more peaceful society moving into the encounter to One Health conception.

The opportunities included the construction of territorial belonging, a broader understanding of diversity, the development of cultural competence among intersectoral and interdisciplinary professionals, as well as, cultural intelligence within the community, once Care is about welcoming, respecting and recognizing in the other not only their needs, but also their dreams and choices, as well their resilient and singular potential for a new beginning.





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